

Validation of the Names of One Genus and Five Species of Fossil Fungi from Subsurface Aptian-Albian Sediments from Northern Arabian Gulf

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ABSTRACT

The names of one genus and five species of fossil fungi, recognized by Srivastava & Al-Tayyar (2013), are here validated. These names were not registered with any recognized nomenclatural repository by the original describing authors and therefore lacked citation of the identifier, and this validating information is provided herein. All names and their validating descriptions/diagnoses are ascribed to their original authors. These new species names are: *Dicellaesporites arabimarinus* Sat. K. Srivast. & Al-Tayyar, *Fractisporonites lucibiliporus* Sat. K. Srivast. & Al-Tayyar, *Multicellaesporites articulatus* Sat. K. Srivast. & Al-Tayyar, *Tripithonites amoenus* Sat. K. Srivast. & Al-Tayyar, *Tripithonites argoperatus* Sat. K. Srivast. & Al-Tayyar. In addition, the genus name *Tripithonites* Sat. K. Srivast. & Al-Tayyar (Type: *T. amoenus* Sat. K. Srivast. & Al-Tayyar) is also validated, together with the names of its two species, mentioned above.

INTRODUCTION

Encountering dispersed fungal fruiting bodies, spores, and mycelia is a common aspect of palynological investigations. Srivastava and Al-Tayyar (2013) published a detailed palynological and palynofacial sequence stratigraphy of an Aptian-Albian core from northern Arabian Gulf. This study also included a description of various genera and species (including new ones) of pteridophytic spores, gymnosperm and angiosperm pollen, fungal spores, and dinoflagellate cysts and acritarchs. The only new genus proposed for fossil fungal spores was *Tripithonites* Sat. K. Srivast. & Al-Tayyar, 2013, and the five new species were *Dicellaesporites arabimarinus* Sat. K. Srivast. & Al-Tayyar, 2013, *Fractisporonites lucibiliporus* Sat. K. Srivast. & Al-Tayyar, 2013, *Multicellaesporites articulatus* Sat. K. Srivast. & Al-Tayyar, 2013, *Tripithonites amoenus* Sat. K. Srivast. & Al-Tayyar, 2013 and *Tripithonites argoperatus* Sat. K. Srivast. & Al-Tayyar, 2013. It is observed that these species characters are different from the known species of the respective genera and therefore deserve to be recognized as new species. However, all the taxa mentioned above are not validly published because these were not registered with any recognized nomenclatural repository and therefore lacked citation of the identifier required for valid publication (Art. F.5.1, Turland et al., 2018). The Article F.5.1 states: "In order to be validly published, nomenclatural novelties (Art. 6 Note 4) applied to organisms treated as fungi under this Code (Pre. 8; including fossil fungi and lichen-forming

fungi) and published on or after 1 January 2013 must, in the protologue, include citation of the identifier issued for the name by a recognized repository (Art. F.5.3)".

Since 2004, the online database MycoBank (www.mycobank.org) has become increasingly used by mycologists to register new fungal names (names of new taxa, new combinations, replacement names, and names at new rank) and associated data, such as descriptions and illustrations. Upon registration, MycoBank issues a unique number that can be cited in the publication as an identifier issued for the name of the particular taxon. (McNeill & Turland 2011).

VALIDATION OF TAXA NAMES

In compliance with Article F.5.1 (Turland *et al.*, 2018), names of one genus and five species of fossil fungi, as stated above, were registered with www.mycobank.org and MycoBank's unique number for each taxon was obtained. These taxa are here validated by providing the missing validating information, i.e., citation of MB numbers.

Dicellaesporites Elsik 1968 (Didymosporae).

- MycoBank No.: MB 21074.
- Type species: *Dicellaesporites popovii* Elsik, 1968 (original designation).
- The diagnostic characters of *Dicellaesporites* are as follows: Inaperturate, psilate fungal spores or algal bodies. Two cells, uniseptate. Shape variable. Sculpture psilate to scabrate.

Dicellaesporites arabimarinus Sat. K. Srivast. & Al-Tayyar, **sp. nov.**, validated herein

- MycoBank No.: MB 818887.
- Validating description and illustration: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 166, pl. 83, figs. 1-5. 2013.
- Holotype: Pl. 83, figs. 1-2; slide no. 4, 45.2: 108.0 (England finder location K46); Sample no. 122 (14.7 m above the base); stored in Natural History Museum, London, U.K.
- Etymology: Arabimarinus = of the Arabian Sea.

Fractisporonites Clarke 1965 (Phragmosporae).

- MycoBank No.: MB 21106.
- Type species: *Fractisporonites canalis* Clarke 1965 (original designation).
- The diagnostic characters of *Fractisporonites* are as follows: Fungal spores uniseriate, fragments consist of four to many rectangular to square cells, sides generally parallel.

Fractisporonites lucibiliporus Sat. K. Srivast. & Al-Tayyar, **sp. nov.**, validated herein

- MycoBank No.: MB 818888.

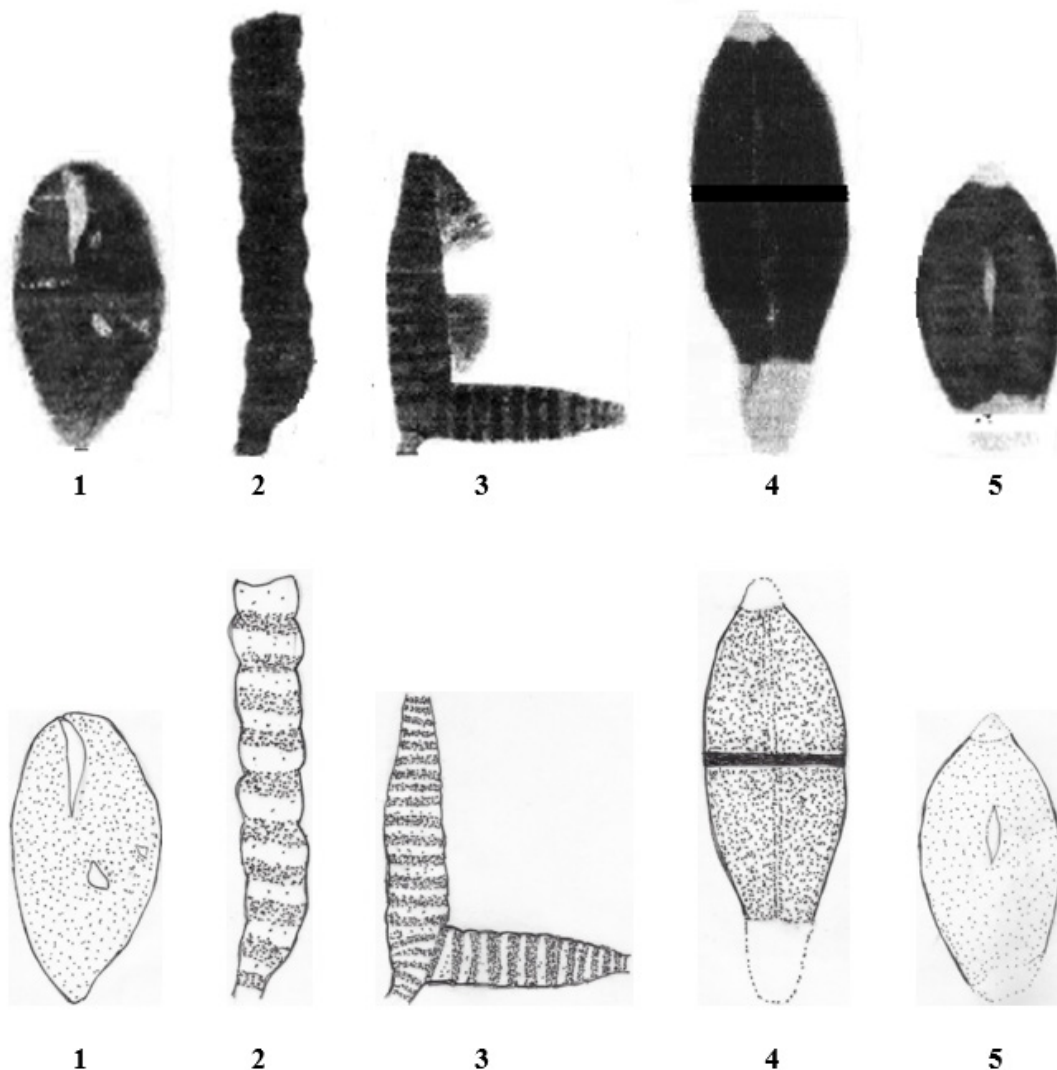


Fig. 1: 1. *Dicellaesporites arabimarinus* Sat. K. Srivast. & Al-Tayyar 2013. 2. *Fractisporonites lucibiliporus* Sat. K. Srivast. & Al-Tayyar 2013. 3. *Multicellaesporites articulatus* Sat. K. Srivast. & Al-Tayyar 2013. 4. *Tripithonites amoenus* Sat. K. Srivast. & Al-Tayyar 2013. 5. *Tripithonites argoperatus* Sat. K. Srivast. & Al-Tayyar 2013.

- Validating description and illustration: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 170, pl. 84, fig. 9. 2013.
- Holotype: Pl. 84, fig. 9; slide no. 4, 50.3: 104.5, (England finder location N51); Sample no. 92 (138.41 m above the base); stored in Natural History Museum, London, U.K.

Multicellaesporites Elsik 1968 (Phragmosporae).

- Mycobank No.: MB 21181.
- Type species: *Multicellaesporites nortonii* Elsik 1968 (original designation).
- The diagnostic characters of *Multicellaesporites* are as follows: Inaperturate, fungal spores of three or more cells; elongate. A longitudinal slit or furrow present. Spore wall smooth or ornamented or differentially colored or thickened. Shape variable around a long axis.

M. articulatus Sat. K. Srivast. & Al-Tayyar, **sp. nov.**, validated herein

- Mycobank No.: MB 818889.
- Validating description and illustration: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 174, pl. 84, fig. 13. 2013.
- Holotype: Pl. 84, fig. 13; slide no. 4, (England finder location U45/1); Sample no. 124 (6.858 m above the base); stored in Natural History Museum, London, U.K.
- Etymology: Latin *articulus* = joint.

Tripithonites Sat. K. Srivast. & Al-Tayyar, **gen. nov.**, validated herein (Phragmosporae).

- Mycobank No.: MB 817993.
- Type species: *T. amoenus* Sat. K. Srivast. & Al-Tayyar, **sp. nov.** (designated herein).
- Validating description: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 180.
- Etymology: Greek *tri-* = three; *pithon* = cellar.
- The genus *Tripithonites* Sat. K. Srivast. & Al-Tayyar was not validly published because the species name indicating its type was not validly published (Turland et al., 2018: Art. F.5.1). The type, *T. amoenus*, is validated by providing the missing information, i.e. citation of the Mycobank registration number of the holotype.

T. amoenus Sat. K. Srivast. & Al-Tayyar, **sp. nov.**, validated herein

- Mycobank No.: MB 818890.
- Validating description and illustration: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 180, pl. 83, figs. 6-8. 2013.
- Holotype: Pl. 83, figs. 7-8; slide no. 4, 53.2: 113.6 (England finder location D54/2); Sample no. 37 (141.3 m above the base); stored in Natural History Museum, London, U.K.
- Etymology: Latin *amoenus* = delightful, lovely.
- The genus *Tripithonites* Sat. K. Srivast. & Al-Tayyar, is also here validated with the validation of its type *T. amoenus*.

T. argoperatus Sat. K. Srivast. & Al-Tayyar, **sp. nov.**, validated herein

- Mycobank No.: MB 818891.
- Validating description and illustration: S.K. Srivastava & H. Al-Tayyar in *Savitriana* 3: 180, pl. 83, fig. 9. 2013.
- Holotype: Pl. 83, fig. 9; slide no. 5, 40.0: 102.7 (England finder location P40/4); Sample no. 111 (53.9 m above the base); stored in Natural History Museum, London, U.K.
- Etymology: Greek *argos* = white; *peratos* = end, extremity.

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