Turczaninowia 18 (2): 80–82 (2015)
DOI: 10.14258/turczaninowia.18.2.7
www.ssbg.asu.ru/turczaninowia.php

ISSN 1560–7259 (print edition)
TURCZANINOWIA
ISSN 1560–7267 (online edition)

УДК 582.394.742

Taxonomic note on the genus *Metapolypodium* (Polypodiaceae)

Таксономическая заметка о роде *Metapolypodium* (Polypodiaceae)

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Key words: Asia, *Metapolypodium*, *Metapolypodium manmeiense*, *Metapolypodium microrhizoma*, new combination, Polypodiaceae, *Polypodium fieldingianum*.
Ключевые слова: Азия, *Metapolypodium*, *Metapolypodium manmeiense*, *Metapolypodium microrhizoma*, новая комбинация, Polypodiaceae, *Polypodium fieldingianum*.

Summary. Taxonomic status of *Metapolypodium* (Polypodiaceae) is discussed which is accepted as a distinct genus comprising two species – *M. manmeiense* (Christ) Ching and *M. fieldingianum* (Kunze ex Mett.) Shalimov et Mazumdar, comb. nov.

Аннотация: Обсужден таксономический статус *Metapolypodium* (Polypodiaceae), который принят в качестве самостоятельного рода, включающего два вида – *M. manmeiense* (Christ) Ching и *M. fieldingianum* (Kunze ex Mett.) Shalimov et Mazumdar, comb. nov.

In its current sense *Metapolypodium* Ching is a small genus with two species confined to Asian tropics (Zhang et al., 2013). Ching (1978b) separated *Metapolypodium* from *Polypodium* L. s. l. He transferred *Polypodium manmeiense* Christ to *Metaplypodium* and designated it as *M. manmeiense* (Christ) Ching, as generic type, and simultaneously described *M. kingpingense* Ching et W.M. Chu which is usually treated conspecific with *M. manmeiense* (e. g., Lu, 2000; Lu, Li, 2006; Zhang et al., 2013). Yang et al. (2010) emphasized that *Polypodium microrhizoma* C.B. Clarke ex Hook. et Baker shares a set of characters with *Metapolypodium* and should be better places in this genus; they made a combination *M. microrhizoma* (C.B. Clarke ex Hook. et Baker) S.G. Lu et L.H. Yang.

Both species are either placed in *Metapolypodium* (Ching, 1978a, b; Lu, Li, 2006; Yang et al., 2010; Zhang et al., 2013) or in *Goniophlebium* (Blume) C. Presl s. l. (Christenhusz, Chase, 2014; Christenhusz et al., 2011; Kreier et al., 2008; Rödl-Linder, 1990) or in *Polypodioides* Ching (Fraser-Jenkins et al., 2015).

Metapolypodium manmeiense and *M. microrhizoma* are distinguishable from all other goniophleboid ferns in having free or partly free veins, similar with free veined *Polypodium* as noted by Christensen (1931) and Ching (1978b). In *Polypodiodes*, *Polypodiastrum* Ching and *Goniophlebium* veins form areoles along costae are with free vein ending towards margins. Majority of the species of goniophleboid ferns has fugacious soral paraphyses. *Polypodiodes formosana* (Baker) Ching and *Polypodiodes niponica* (Mett.) Ching lack for scaly soral paraphyses like *M. manmeiense* and *M. microrhizoma*, but are distinguishable by prominent costal areoles, hairy lamina, etc. (Rödl-Linder, 1990).

Поступило в редакцию 09.06.2015
Принято к публикации 22.06.2015

Submitted 09.06.2015
Accepted 22.06.2015

Spore morphology is very useful to delimit *Metapolypodium* from *Goniophlebium* and *Polypodiastrum*. Spores of *M. manmeiense* and *M. microrhizoma* are reniform, with verrucate exospore and smooth perispore, similar to *Polypodiodes*. In contrast, spores of *Goniophlebium* and *Polypodiastrum* show prominent perisporial ridges or crests (Shalimov et al., 2013). *Polypodiodes lachnopus* (Wall. ex Hook.) Ching (Shalimov et al., 2013) and *Polypodiodes hendersonii* (Bedd.) Fraser-Jenk. (Chang et al., 2006) also show perisporial crests, but are distinguishable by rhizome scale with filiform apices, scaly paraphyses in sori, prominent costal areoles, etc. (Rödl-Linder, 1990).

Molecular data (Kreier et al., 2008; Lu, Li, 2006) revealed *Metapolypodium* as well supported subclade in "goniophleboid clade", and venation pattern, spore morphology, soral paraphyses, etc. support *Metaplypodium* as a good genus having close relationship with *Polypodiodes*.

Molecular data (Kreier et al., 2008; Lu, Li, 2006) also showed close relationship of *M. microrhizoma* with *M. manmeiense* as earlier was indicated morphologically by Christensen (1931). These two species share similar verrucate spores, clathrate rhizome scales with acuminate apices, lamina without acicular hairs, free venations, absence of scaly paraphyses in sori, etc. that justify their placement in one genus.

Nomenclature of *M. microrhizoma* needs revision. The name *Polypodium microrhizoma* was proposed by Clarke and validated by Hooker and Baker (1874). However, Clarke (1880) himself noted that an earlier name, *P. fieldingianum* Kunze ex Mett., published by Mettenius (1857), has priority over *P. microrhizoma*. But type material which he studied was incomplete (without rhizomes) and he did not proceed further study. Similarly, Rödl-Linder (1990) treated *P. fieldingianum* conspecific with *M. microrhizoma* but she was unable to find the type of *P. fieldingianum* and no nomenclature change was attempted. Finally, Fraser-Jenkins et al. (2015) restored the priority of *P. fieldingianum* over *P. microrhizoma* but placed the former in *Polypodioides*. As discussed above, its correct position is in *Metapolypodium* and a new combination is proposed here.

Metapolypodium fieldingianum (Kunze ex Mett.) Shalimov et Mazumdar, **comb. nov.** – *Polypodium fieldingianum* Kunze ex Mett., 1857, Farngatt. 1 : 75. – *Goniophlebium fieldingianum* (Kunze ex Mett.) T. Moore, 1862, Index Fil. : 389. – *Polypodioides fieldingiana* (Kunze ex Mett.) Fraser-Jenk., Kandel et Pariyar, 2015, Ferns and Fern-allies of Nepal 1 : 42.

Lectotype (selected by Fraser-Jenkins et al., 2015): "Himalaya [country unknown], Fielding, Hofmeister" (B, image!).

Acknowledgements

We sincerely thank Prof. B. Zimmer for kindly tracing the specimen and sending the image on behalf of Botanical Garden and Botanical Museum in Berlin-Dahlem, Berlin. Research was supported by the RNF № 14-14-00472 and Ministry of Education and Science of the Russian Federation in within the base portion of the state task in the field of scientific research Altai State University (project code – 316).

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