Ferns of Mussoorie

We are in receipt of a paper on "Ferns of Mussoorie" by P. N. Mehra of the Punjab University, with a *Foreword* by Dr. H. Chowdhuri, Director of the **Kashyap Research Laboratory** of the Punjab University, Lahore. The author has listed 94 species including one new species and two new varieties of ferns. Such an attempt on the part of the author, to bring together in one easily accessible form, the fern flora of the locality is indeed laudable. Such local lists of special groups of plants are now in great demand. We welcome more of such local lists from systematists all over India in order to enrich our knowledge of the Indian flora.

It is our earnest desire to invite attention of such would-be authors to many important points that have to be taken into account in the preparation of such works. A thorough knowledge of the international rules of botanical nomenclature, as amended by the Cambridge Congress of 1930 and accepted by the Amsterdam Congress of 1935, is the first and foremost requisite for any systematist in India, without which, any work on Systematic Botany in India is bound to suffer considerably in the estimation of botanists outside India. The second requisite is complete knowledge of the literature, not only of the Indian but also of the other countries, dealing with the subject, because, the nomenclature of and the interpretation of species have undergone and are undergoing great changes with the increase of our knowledge. A third but not the least important, is the necessity of correlating the local collections with the authentic collections available in a fully equipped and well recognised Herbarium. For us, in India, the Herbarium at the **Royal Botanic Garden**, Sibpur, has been recognised by the Amsterdam Congress of 1935 as the chief representative botanical institution in Asia, besides the ones in China and Japan.

We have been reluctantly forced to dilate a little more than what we desired to say on this subject, as we have been observing of late, that some of the systematists have been publishing new species without any regard to the rules governing such publications. They have thus been wasting their time and energy on publishing new species which will have no value before the scientific world and we are afraid, in the long run, are likely to be discarded and forgotten.

We congratulate Mr. Mehra, the author of the *Ferns of Mussoorie*. We are also grateful for his kind reference to us in this connection. However, we have to dissociate ourselves from some of the author's conclusions as discussed below. Apart from some nomenclatorial defects, especially in the genus Polypodium, we regret to notice the utter disregard, rather to the ignorance of the author, of the International Rules of Botanical Nomenclature, in connection with the publication of his new species *Polypodium Kashyapii* nov. sp. This name is invalid and will have no status in science as it is not in conformity with the articles Nos. 18, 19, 37 and 38 of these rules, which provide, to say briefly, (1) to the existence in a well recognised institution of a type specimen on which this new species is based and (2) particularly to a latin diagnosis, followed, if possible, with proper sketches or photos of the type, without which any new species does not become valid.

Apart from the absence of this important desideratum for a new name, we have also been unable to agree with the author in regarding it as a new species. The "*certain important characters*" on which the author has based this new species, appear to us to be chiefly the "*presence of scales on the under-surface of the midrib with ovate lacerate margin and apex long drawn out, hair-like and thrown into wavy curves* (in *P. excavatum*, scales on the under-surface of the midrib are ovate or orbicular-ovate, never hair-pointed)." Secondly, the author says that the scales on the under-surface of the fronds in the new species are more numerous and hair-pointed than in *P. excavatum*.

There is a very good set of collections of *P. excavatum* (*Polypodium lineare* var. β simplex) in the Herbarium at Sibpur, especially

from Mussoorie and the surrounding localities. According to all pteridologists, including Baker and Hooker, Beddome, Christensen, Ching and others, *Polypodium excavatum* belongs to a group of ferns with the fronds having naked under-surface, *i.e.*, without any persistent matted scales (*vide Hk. & Bk., Syn. Fil.*, pp. 353, 354). The author says that the scales in *P. excavatum* are fewer and ovate or ovate orbicular, etc., and never hair-pointed. In the collections at Sibpur, belonging to *P. excavatum*, we have failed to detect this scaly nature (large or small) on the under-surface of the fronds. In a few sheets, especially on the stipe near the rhizome, a few scattered scales whose number could be counted on the finger, are noticeable. In certain sheets a few scattered hair-like scales also by the side of the midrib towards the base of the stipe, like those pictured on p. 24 of Mr. Mehra's paper, are also present. As regards the habit, the author appears to generalise from observation made at one place only, which may be due to the nature of the habitat in that locality. We do not consider these points sufficient for specific differentiation. Further we know that the only Indian representative of the widely spread American fern, Pleopeltis, a group of ferns segregated from the heterogeneous Polypodia, having persistent peltate scales, with a dark centre, is the South Indian *Pleopeltis lanceolata* Kaulf. (*P. lanceolatum*). We also know that, according to R. R. Ching, the fronds in the young stages are densely covered with easily detachable scales which fall off with age. There will be no end to the creation of new species based upon such characters, which vary with age and are of no permanent nature. We are, therefore, apart from its invalidity of publication, inclined to consider this as only a particular stage of *Polypodium excavatum*.

The other point on which we wish to say a few words, is the nomenclature of some of these Polypodiums. It is true that Christensen has retained the name Polypodium. Under it, he has included several other groups as Subgenera. But when we consider the heterogeneous nature of the genus Polypodium and its huge size (in *Hk.f. & Bk. Syn. Fil.*, there are 390 species of Polypodium) we will be justified in splitting it up, on practical grounds, into smaller, easily recognisable groups with generic status to each. R. C. Ching has relegated all these Polypodia with simple lanceolate, shortly stipitate naked leaves and with the sori on a plexus of radiating veinlets and densely covered with detachable peltate scales when young, to *Lepisorus* (J. Sm.) Ching. According to this view, which we consider good, on practical grounds, some of the species listed in this paper become *Lepisorus Thunbergianus* (Klf.) Ching *P. linearis*), *L. clathratus* (Cl.) Ching and *L. excavatus* (Bory) Ching.

Further we consider the figure of *P. excavatum* too narrow for *P. excavatum* and it represents rather the linear leaves of *P. lineare* than those of *P. excavatum*.

The author's two varieties, var. *xerophytica* nov. of *P. lachnopus* and *P. microrhizoma*, are according to the author himself, plants occurring in open situations on calcareous rocky soil. They are, therefore, only edaphic variants of the same mother species and do not deserve a varietal rank.

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