38. ADDITIONS TO THE GRASSES OF BIHAR, ORISSA & WEST BENGAL

Jain *et al.* (1975) published a list of grasses of Bihar, Orissa and West Bengal. They did not include some of the known species because of the non availability of representative specimens. We have identified few such specimens that can now be added to the list. The specimens studied are mentioned below.

1. *Calamagrostis pseudophragmites* (Hall. f.) Koeler var. *pseudophragmites.*
   W. BENGAL: Darjeeling, 1800-2100 m., Aug., 1957, K. C. Chowdhury 1 (CAL).
2. *Dichanthium pallidum* (Hook. f.) Stapf ex Fisch.
   ORISSA: Gunjam, Dec. 1949, W. Wight 3023 (CAL).
3. *Festuca gigantea* (L.) Vill.
   W. BENGAL: Darjeeling, Tiger hill, 2400 m., 6.7.1956, D. Chatterjee's collector 77 (CAL).
4. *F. undata* Stapf var. *aristata* Stapf
   W. BENGAL: Darjeeling, 3500 m., 27.6.1960, A. B. Chowdhury 31 (CAL).
5. *Paspalum longifolium* Roxb.
   W. BENGAL: Malda, Sarul forest, 25.8.1966, R. M. Dutta 489 (CAL).

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REFERENCE

JAIN, S. K., BANERJEE, D. K. & PAL, D. C. (1975): Grasses of Bihar, Orissa & West Bengal. *J. Bombay nat. Hist. Soc.* *72*(3): 758-773.

39. A LITTLE KNOWN FERN FROM THE HIMALAYA — *ASPLENIUM NESII* CHRIST, AND THE NOMENCLATURE OF *A. EXIGUUM* BEDD. (ASPLENIACEAE)

(With a text-figure)

A description of the little known, *Asplenium nesii* Christ, hitherto unrecorded in the Himalayan fern literature is provided. Its further detection in the various herbaria (under *A. varians* or *A. exiguum*) or from other localities in the Himalaya would help in determining the geographical range of this Chinese fern. The real *A. exiguum* Bedd. occurs in south India only. The Himalayan fern conventionally so known is much different and should be given another name.

An *Asplenium* collected from Deoban (2,700 m) above Chakrata, Mussoorie hills (W. Himalayas) was found to be distinct from all known Himalayan species of this genus. Prof. T.

Reichstein (Basel, Switzerland) confirmed the identity of this fern as *Asplenium nesii* Christ. It is unrecorded in Himalayan fern literature and a detailed description of this species is very much required and desirable as it seems to be not much known to Indian pteridologists.

Asplenium nesii Christ

Rhizome short, erect to ascending, apex clothed in black clatherate ovate-lanceolate 2.5-3.0 mm long scales; fronds numerous, 2-12 (14) cm long x 1-2 (3) cm broad (at the widest), grey-green; stipe short 2-6 cm, 2-10 times shorter than the lamina, invariably black, at least in the lower half, green upwards, a tuft of scales (similar to those on rhizome apex) at base, less dense becoming scattered narrower hair-like and light-brown upwards running on to half of rachis, 0.5-1 mm thick; lamina coriaceous to subcoriaceous, lanceolate widest a little above the middle, tapering to base, tip incised on both sides to produce 3-5 blunt teeth on each side directed upwards, bipinnatifid or partly bipinnate in the lower part; pinnae 8-12 pairs, 0.5-1.5 cm long, more or less linear, bases cuneform, lower ones shortly stipitate stalk 0.5-1 mm, upper ones becoming decurrent and sessile, lower pair of pinnae small, often irregular, about 1 cm apart from the next pair, becoming slightly closer higher up and sometimes touching the next but not crowded, larger pinnae (0.5) 0.8-12 (15) cm long x 0.3-0.5 cm broad, deeply incised to form 2-4 irregular lobes on both sides, the larger lobes often forked or cleft again forming obtuse teeth that are directed towards the midrib; rhachis green, lower portion scaly; veins obscure; indusia whitish, entire, open up at maturity; sori close to the costae, 5-7 (10) to a pinna; spores bilateral, brown, perinate, perine large, (30) 34-42 (45) μm long.

(Based on Ching and Reichstein (1980); emended on basis of present specimens personally examined).



Fig. 1. *Asplenium nesii* Christ from Deoban 2700 m, Chakrata hills.

Characteristic features: A small fragile fern growing in the clefts and fissures of dry but shaded rocks. Stipes many, tufted, blackish at least in the lower portion, higher up and rhachis green; lamina bipinnatifid, grey-green, coriaceous to subcoriaceous, widest a little above the middle, lower pinnae small and distinct. Fig. 1.

Extremely rare in the Deoban forest (2,700 m), Uttar Pradesh. Specimens have been deposited at PAN (Chandigarh) and PUN (Patiala).

A. nesii has been detected from previous collections from only the following three Himalayan localities:—

(i) Uttar Pradesh, Kumaon; rocks in Dhauli Valley, 3,000 m, J. F. Duthie, 6.8.1886 (DD).

(ii) Uttar Pradesh, Deoban, 2,700 m; R. L. Flemming, 1.10.1951 (MICH) No. 1096.

(iii) Himachal Pradesh, Lahul, Shipting Nulla, 3,300 m; Walter Koelz, 2.8.1938 (MICH) — doubtful.

The above three herbarium specimens were identified provisionally as *A. nesii,* by Ching and Reichstein (*pers. comm.*) although no. (i) had been labelled as *A. exiguum* and no. (ii) as *A. varians.* (Herbaria: DD = herbarium of the F.R.I. Dehradun; MICH = The University of Michigan, U.S.A.).

The present gatherings of *A. nesii* are the first authentic record for this fern from the Himalaya. It is quite probable and possible that a re-examination of the specimens in various herbaria all over the country, under *A. varians* Wall. *ex* Hook. & Grev. *A. exiguum* Bedd. and *A. pseudofontanum* Koss., Naturl. System. Herb. Hortii Petr. *3*: 121-124 (1922) (earlier known as *A. fontarum* (L.) Bernh. in which the lamina is more divided and pinnae more numerous), may be successful in detecting and adding to the number of Himalayan localities for this primarily Chinese fern. The geographical range of *A. nesii* could also thus be determined.

A. nesii shares with *A. varians* the absence of proliferating buds on lamina. But in *A. varians* the lamina is herbaceous, primarily bipinnate (1-pinnate or tripinnatifid), bright-green (not grey-green); lowest pinnae generally only a shade smaller (or even longer) than the second pair which is often the largest and only the extreme basal 1-2 cm of stipe may be black.

Another Himalayan fern quite close to *A. nesii* is *A. exiguum.* Both have a similar frond form (tapering at ends and broadest a little above middle) and blackish stipes. *A. exiguum,* however, differs in having: complete and even lower part of rhachis blackish, vegetative proliferating buds always present, lamina herbaceous, bright-green; prefers more humid situations compared to *A. nesii.*

Nomenclature of *A. exiguum*

It would be pertinent to point out here that true *A. exiguum* Bedd. occurs only in south India. The form described from various localities in the Himalaya (Mehra, 1939, from Mussoorie; Bir, 1962 from Simla; Verma & Khullar, 1980 from Nainital; Dhir, 1980 from N. W. Himalaya, etc.) under this name is different. Earlier, Hope (1901) had pointed out the distinctness of the Himalayan and south Indian forms, but later workers unfortunately treated these under a common name.

In the south Indian taxon, vegetative buds are present only on an extended rhachis and not on pinnae; many fronds of a plant are with such buds. The Himalayan form has vegetative buds on both, an extended rhachis (only on a few fronds of a plant) and pinnae. Another fern of this group, *A. yunnanense* Franchet, also has vegetative buds on the apex, but the rhachis is not extended (Reichstein, *pers. comm.*). The Himalayan form is thus distinct from the true south Indian, *A. exiguum.*

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