

THREE SPECIES OF THE FERN GENUS *COLYSIS* PRESL (POLYPODIACEAE)
NEW TO INDIA

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ABSTRACT

Colysis digitata (Bak.) Ching, *C. longisora* (Bak.) Ching, and *C. pentaphylla* (Bak.) Ching are being reported for the first time from India. A revised key to the Indian species of the genus *Colysis* Presl section *Dictyogramme* Presl, has been provided.

INTRODUCTION

During the course of identification of the ferns collected from Manipur in Feb.-Mar. 1978, the authors came across some interesting specimens belonging to the genus *Colysis* Presl. A critical study of these with relevant literature revealed them to be *C. digitata* (Bak.) Ching and *C. pentaphylla* (Bak.) Ching, which are so far not reported from this country cf. Beddome (1892), Ching (1933, 1937), Mehra and Bir (1964), Tagawa (1966, 1971). An examination of the collections of this genus present in the Central National Herbarium (CAL) revealed that a specimen from Manipur earlier identified as *C. elliptica* (Thunb.) Ching, was infact *C. longisora* (Bak.) Ching, which also is a new record for India. Amongst the present new records *C. digitata* (Bak.) Ching was earlier known from China, *C. longisora* (Bak.) Ching from China and Vietnam, and *C. pentaphylla* (Bak.) Ching from China, Thailand and Bhutan. In this paper, these three species are described with suitable illustrations, a revised key to the Indian species of the genus *Colysis* Presl, section *Dictyogramme* Presl, has also been included.

Key to the Indian species of the genus *Colysis* Presl, section *Dictyogramme* Presl.

- | | | |
|---|-----|-----------------------|
| 1. Fronds digitately lobed | ... | <i>C. digitata</i> |
| 1. Fronds pinnatifid or pinnate : | | |
| 2. Fronds pinnatifid : | | |
| 3. Fronds pinnatifid with a broad wing on each side of rachis; pinnae 2-7 jugate, oblong-lanceolate, 13-28 × 2.5-4 cm : | | |
| 4. Pinnae 2-5 jugate, 13-15 × 3-4 cm | ... | <i>C. latiloba</i> |
| 4. Pinnae 5-7 jugate, 18-28 × 2.5-3 cm | ... | <i>C. pothifolia</i> |
| 3. Fronds pinnatifid with a very narrow wing on each side of rachis or the lowermost pinnae almost wing-less, pinnae 3-4 jugate, elliptic, 11.5-15.5 × 1.2-1.5 cm | ... | <i>C. elliptica</i> |
| 2. Fronds pinnate : | | |
| 5. Pinnae 5-jugate, oblong-lanceolate, 12-13.5 × 2.2-2.4 cm, sori long, extending from costa to margins, ascending | ... | <i>C. longisora</i> |
| 5. Pinnae 2-4 jugate, broadly-lanceolate, 12-16 × 2.7-3.5 cm, sori short, not extending upto margins, patent | ... | <i>C. pentaphylla</i> |

Colysis digitata (Bak.) Ching in Bull. Fan. Mem. Inst. Biol. 4: 328. 1933. *Gymnogramme digitata* Bak. in Journ. Bot. 267. 1890.

Rhizomes wide-creeping, slender, 3-4 mm in diameter; scales clathrate, iridescent, lanceolate, atrobrown, hair pointed at apex. Fronds distant, 1.5 to 4 cm apart, 35-40 cm tall, digitate; stipes 18-21 cm, erect, pale stramineous, naked; pinnae 3, digitately divided, wingless or shortly decurrent at base, segments lanceolate, 11.5-20 × 2.8-4.6 cm, (middle pinna larger than the lateral ones), acuminate at apex, slightly narrowed at base, margins thickened, entire but repand, pale

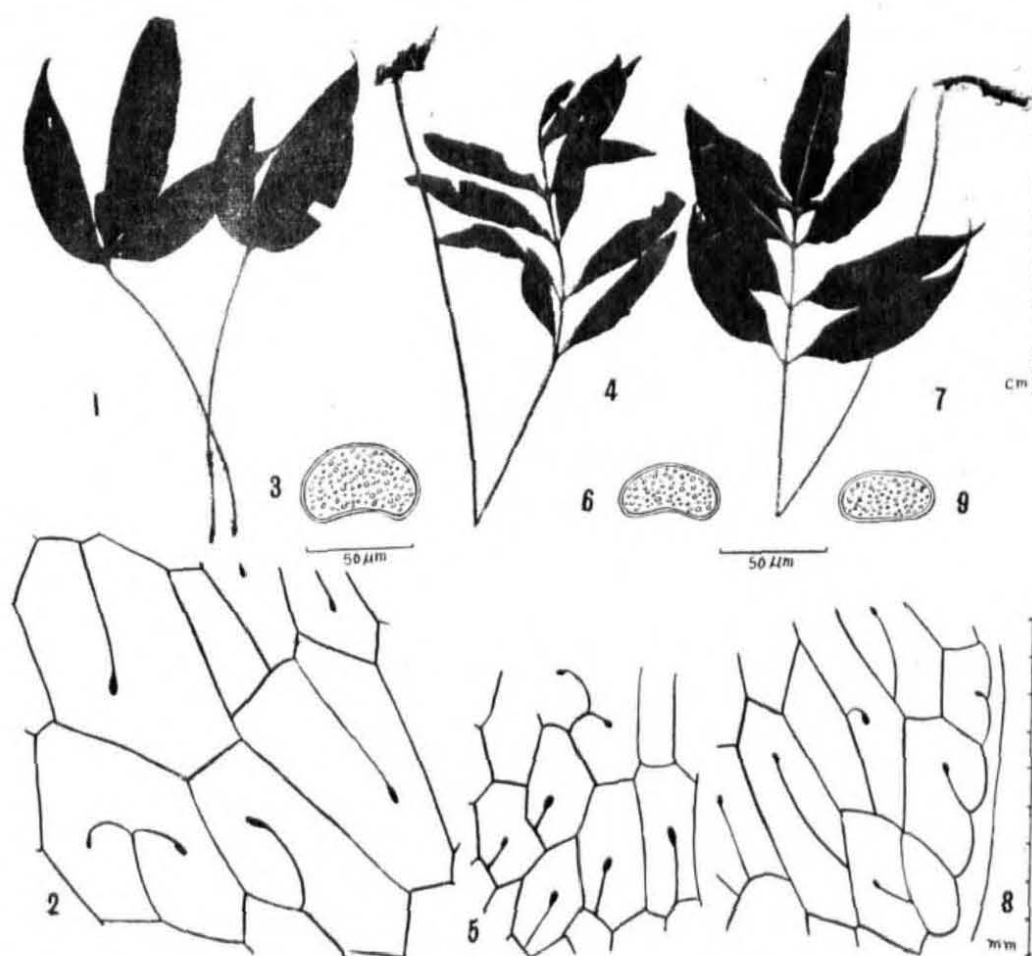
brownish-green, thin but firm in texture, glabrous on both the surfaces, midrib slightly raised on the lower surface. Venation reticulate, areoles large, copious, irregularly hexagonal with included recurrent simple or forked veinlets. Sori linear, $10-20 \times 1-1.5$ mm, slightly oblique, extending from the costa to nearly to the margin. Spores monolete, $35-60 \mu$, yellowish-green, verrucoid. (Figs. 1-3).

Specimens examined: SIKKIM-1879, King

s. n. (CAL ACC. No. 7294). MANIPUR-Litan: Karpung, 2000 m, 14.2.78, Dixit 58944 (CAL).

The Indian plants possess 3 segments only, although according to Ching (1937) simple to 5 leaf-segments are not uncommon in Chinese populations.

Colysis longisora (Bak.) Ching in Bull. Fan. Mem. Inst. Biol. 4: 331. 1933. *Gymnogramme longisora* Bak. in Journ. Bot.



Figs. 1-9: 1-3. *Colysis digitata* (Bak.) Ching: 1. Habit, Dixit 58944. 2. Venation. 3. Spore. 4-6. *C. longisora* (Bak.) Ching: 4. Habit, Meebold 5307. 5. Venation. 6. Spore. 7-9. *C. pentaphylla* (Bak.) Ching: 7. Habit, Dixit 59018. 8. Venation. 9. Spore.

267. 1890.

Rhizomes wide creeping, slender, 3-4 mm in diameter; scales clathrate, ovate-lanceo-

late, iridescent, dark brown. Fronds upto 65 cm, tall, stipes 45 cm, stramineous, naked; lamina oblong, impari-pinnate, pinnae

5-jugate, 12-13.5 × 2.2-2.4 cm, oblong-lanceolate, long attenuate at base, obtuse or acute at apex, lower ones sub-petiolate, upper ones more or less decurrent to adnate, thin but firm in texture, green, glabrous on both the surfaces, margins entire to repandulous, midrib distinct and slightly raised on the lower surface. Venation reticulate, areoles small, hexagonal, usually with a free included veinlet. Sori linear, very oblique, extending from the costa to the margin. Spores monolete, 23-48 μ , pale, verrucoid. (Figs. 4-6).

Specimen examined: MANIPUR: Maotana, 1,500 m, Feb. 1906, *Meebold* 5307 (CAL).

Colysis pentaphylla (Bak.) Ching in Bull. Fan. Mem. Inst. Biol. 4: 332. 1933. *Gymnogramme pentaphylla* Bak. in Kew Bull. 233. 1898.

Rhizomes wide-creeping, slender, 2-3 mm in diameter; scales clathrate, iridescent, ovate-lanceolate, dirty brown. Fronds distant, 50-70 cm tall, simple pinnate; stipes 35-45 cm, pale-stramineous, naked; lamina impari-pinnate, ovate, green; pinnae 2-4 jugate, broadly lanceolate, 12-16 (-20) × 2.7-3.5 cm, opposite, base attenuate and slightly decurrent, acuminate at apex, herbaceous, glabrous on both the surfaces, margins entire to repandulous, midrib distinct and slightly raised on the lower surface. Venation reticulate, areoles copious, irregularly

hexagonal with included recurrent simple veinlets, lateral main veins visible above. Sori linear, 8-15 × 1-1.5 mm, oblique, extending over two third from the costa towards margin. Spores monolete, 22-42 μ , yellowish-green, verrucoid. (Figs. 7-9).

Specimens examined: MANIPUR: Ukhrul, 2000 m, 24.2.1978, *Dixit* 58880, (CAL); Sir-ohi hill, 2200 m, 25.2.1978, *Dixit* 59018, (CAL). CHINA: Yunnan: Szemov mts. 2300 m, 1899 *Henry* 9033B (CAL); 2000 m, 1899, *Henry* 9259B (CAL).

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