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Short communication

## *Pityrogramma* Link. (Pteridaceae) – A new generic record for Odisha, India

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### ABSTRACT

*Pityrogramma calomelanos* (L.) Link of the fern family Pteridaceae collected from Mahandragiri hills, Gajapati district, Odisha is reported here as new distributional record for the state of Odisha. The genus *Pityrogramma* Link is also reported for the first time from within the geographical boundary of the state.

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India has a rich and varied pteridophytic flora due to its unique geographical location, diversified topography, variable climatic conditions and migration of species of different phytogeographical regions. The pteridophytes in India are distributed in different biogeographic regions from plains to mountains, coastal regions, arid regions, riverine ecosystems etc. with major concentration in the Himalayas, Western Ghats, Eastern Ghats and Panchmarhi Biosphere Reserve. The total number of ferns and fern allies occurring wild in India has been variously estimated between 1200 to 1000 species (Dixit, 1984; Chandra, 2000, Chandra *et al.*, 2008; Fraser-Jenkins, 2012). According to Fraser-Jenkins (2012) the total number of pteridophyte species present in India is c. 1100 and one-third of them *i. e.* 337 taxa are considered to be threatened or endangered.

The *Pityrogramma* Link is a small genus of 14 species (Tryon, 1962) and 3 species are reported to occur in India (Beddome, 1883; Dixit, 1984). Holttum (1954), while reporting the occurrence of two species of *Pityrogramma* viz. *P. calomelanos* (L.) Link and *P. chrysophylla* (Swartz) Link from Malaya, remarked that *P. calomelanos* is found throughout the tropics and probably, it is dispersed by men. This species has long been under cultivation in the name of

‘Silver Fern’. It is reported to be abundant in the plains of Assam and West coast of South India, where the young fronds are used as leafy vegetables (Nayar, 1959). Occurrence of *P. calomelanos* from Garo hills of Meghalaya and Kamrup district of Assam has been recorded by Baishya and Rao (1982) and Handique and Konger (1986) respectively.

During the floristic studies on the Mahandragiri hills, Gajapati district, Odisha, the authors collected some interesting specimens of pteridophytes belonging to the genus *Pityrogramma* Link (Pteridaceae). Through consultation of literature and study of type and other herbarium specimens available at K and NY, we identified it as *Pityrogramma calomelanos* (L.) Link, which has earlier been reported from different parts of India, other than the state of Odisha (Dixit, 1984, Nayar and Geevarghese, 1993; Barbhuiya and Singh, 2014). Therefore, the present occurrence of the species in Odisha is a new generic record of fern for the state. Nomenclature, botanical description, distribution, details of specimens studied and notes on ecology etc. have been provided below along with photographs of plant and plant parts (Fig. 1). The voucher specimen has been deposited in the herbarium of Regional Plant Resource Centre (RPRC), Bhubaneswar, Odisha, India.

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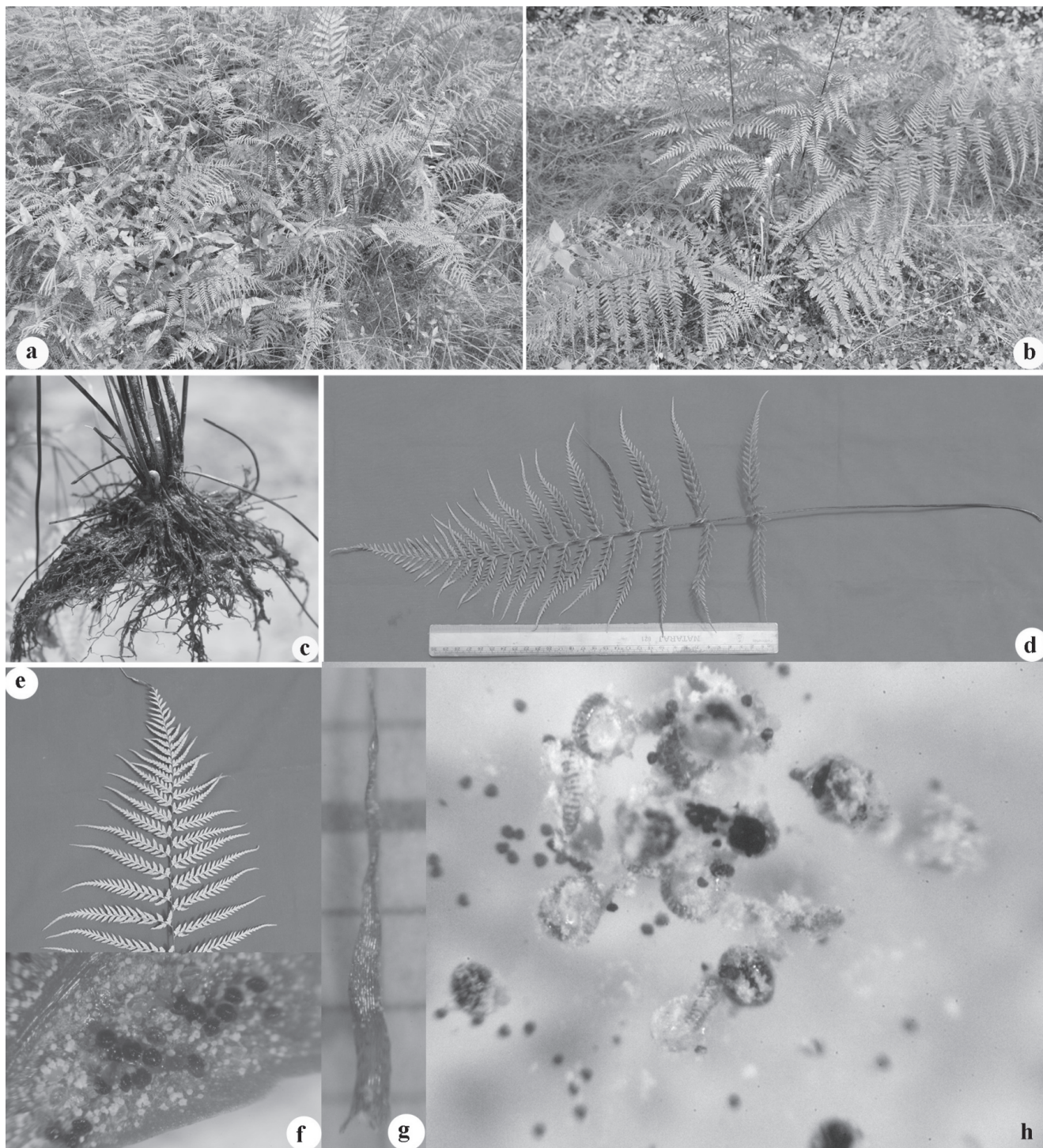


Fig. 1: *Pityrogramma calomelanos*(L.) Link (Pteridaceae): a. Habitat, b. Habit, c. Rhizome, d. Frond, e. Abaxial of pinnae, f. Enlarge of sori, g. Rhizome scale, h. Sporangia with spores.

***Pityrogramma calomelanos* (L.) Link**, Handb. Gewachse 3: 20. 1833; Baishya, & Rao, Ferns & Fern Allies of Meghalaya State, India 146. 1982; Dixit, Census of Ind. Pteridophytes 79. 1984; Handique, & Konger, J. Assam Sci. Soc. 31 (2): 70. 1989; Nayar & Geevarghese, Fern Fl. Malabar 99. 1993; Barbhuiya, & Singh, J. Threat. Taxa 6(9): 6252. 2014; Dudani, *et al.*, Indian Journ. Plant Sciences

3(1): 33. 2014. *Acrostichum calomelanos* L. *Sp. Pl.* 2: 1072. 1753. *Ceropteris calomelanos* (L.) Link, *Fil. Spec.* 141. 1841. *Ceropteris serrata* Fée, *Mém. Foug.* 8: 81. 1857. *Gymnogramma calomelanos* var. *aureoflava* Hook. *Gard. Ferns t.* 50. 1862. *Pteris calomelanos* (L.) Bedd. Ferns Brit. India t. 22. 1863. *Pellaea calomelanos* (L.) Link, *Fil. Sp.* 61. 1841; Bedd. Handb. Ferns Brit. India 104. 1883.

*Gymnogramma calomelanos* var. *denudata* Harr. *J. Linn. Soc. Bot.* 16: 37. 1877. *Neurogramma calomelanos* (L.) Diels *Nat. Pflanzenfam.* 1(4): 264. 1899. *Ceratopteris calomelanos* (L.) Underw. *Bull. Torrey Bot. Club.* 632. 1929.

Plants terrestrial; rhizomes erect or ascending, covered by paleae, pale brown, narrowly lanceolate. Frond erect, 60-120 cm long, with the stipe erect, 15-50 cm long, 2-4 mm thick, dark brown, covered by silvery farina when young, covered by a scale, golden brown, 4 mm long, 0.5 mm width, linear, apex tapering. Lamina erect, obovate, 20-60×10-20 cm, covered by dense silvery farina on lower surface; rachis similar to stipe and bearing several loosely placed alternate primary pinnae which are oblong to ovate, 5-15×2-5 cm, facing nearly upwards, and with the secondary rachis adaxially grooved; secondary pinnae pinnatifid and acuminate in the apical region but pinnate below with many subopposite or alternate, sessile ultimate pinnae having the basiscepic base, narrowly decurrent, elongate-ovate to rhomboidal, 10 - 15×3-5 mm, with bluntly acute apex and serrate margin. Sporangia on lower side of pinnae, along the veins; stalk shorter than the capsule and with 32-60 spores, triangular or hemispherical.

*Ecology:* It grows on humus-rich mountain slopes usually near streams in dense forest at an altitude of about 300m above MSL.

*Specimens examined:* India, Odisha, Gajapati District, Mahaendragiri hill top, 20-08-2015, C. Kalidass & P. Murugan, 9483 (RPRC) N 18°58'270", E 084°21'238" and Alt. ±1002m above MSL.

*World distribution:* The species is native to America; now widely naturalized in many tropical regions.

*Distribution in India:* Tamil Nadu, Kerala, Karnataka, Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim and Odisha (present report).

*Notes:* Tryon *et al.* (1975) presented a well-documented chromosome count of  $n = 116$  ( $x = 29$ ) for *Pityrogramma calomelanos* from Brazil, in disagreement with previous counts for that species.

## Acknowledgement

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