

## Checklist of the pteridophytes of Narsingdi District, Bangladesh

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### Abstract

The occurrence of a total of 31 species of pteridophytes under 20 genera and 13 families in Narsingdi district were confirmed. Pteridaceae with 11 species was found as the largest family, which was followed by Salviniaceae and Polypodiaceae consisted of four species each and Thelypteridaceae with three species. Each of the rest nine families was represented by only one species. *Pteris* with six species was found as the largest genus, which was followed by *Salvinia* with three species, and *Adiantum*, *Ceratopteris*, *Pyrrosia* and *Cyclosorus* with two species each. Each of the rest 14 genera was represented by only one species. Among these species, 21 were found as terrestrial, two as both terrestrial and semiaquatic, four as aquatic and other four as epiphytic. The occurrence of *Tectaria chattagrammica* Ching, listed as DD (Data Deficient) in Red Data Book of Bangladesh, was common with natural regeneration in this district.

**Key words:** Checklist, Pteridophyte, Narsingdi district, Bangladesh.

### INTRODUCTION

Pteridophytes or the ferns and fern-allies are the most primitive vascular plants in the plant world. They were a major part of the earth's luxuriant vegetation during the Carboniferous period (The Columbia Electronic Encyclopedia, 2012). In the modern era, the pteridophytes are an important component of the flora of any area. They have been used as ornamentals and medicinals (Nayar, 1957; Benerjee & Sen, 1980; Dhiman, 1998; Dixit, 1974 and 1975; Hodge, 1973; Kaushik, 1998; Singh, *et al.*, 1989; Benjamin & Manickam, 2007; Kavitha *et al.*, 2017; Singh & Rajkumar, 2017). Some pteridophytes of Bangladesh are used as vegetables (Sarker & Hossain, 2009). Many species of this plant group occurring in Bangladesh are also reported as ethno-medicinally useful (Uddin, *et al.*, 1998; Uddin, *et al.*, 2008; Sarker & Hossain, 2009). Prain (1903) was the first who reported 98 species of pteridophytes from the then East Bengal including the present Bangladesh. The nomenclature and taxonomic position of many pteridophytic taxa have been changed in last eleven decades. After Prain (1903) different studies have been done on the pteridophytes of Bangladesh (e.g., Pasha & Mallick, 1980; Pasha & Chakraborty, 1984; Pasha, 1985; Mirza & Rahman, 1997; Uddin & Pasha, 1997; Uddin, *et al.*, 1998; Uddin, 2001; Uddin *et al.*, 2001; Siddiqui *et al.*, 2007; Uddin, *et al.*, 2008. Uddin & Hassan, 2012, Hossain *et al.*, 2015). Siddiqui *et al.* (2007) compiled 195 species of pteridophytes from Bangladesh. These works were conducted on specific area or taxon based on representative specimens collected through field inventories, examination of previously collected voucher specimens deposited at different herbaria and of Bangladesh

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or survey of available literatures. However, the pteridophytic flora of this country is still inadequately known and described and until now there is the scope, need and justification of exploring this plant group throughout this country to know their present status and distribution. This study was conducted to know the current status and distribution of pteridophytic flora in Narsingdi district.

## MATERIALS AND METHODS

Narsingdi district is located in central Bangladesh, 50 km north-east of the capital city Dhaka and lies between 23°46' and 24°15' north latitudes and between 90°34' and 90°59' east longitudes. This district with an area of 1140.76 sq km is a part of the Dhaka division and consisted of six upazilas, namely Belabo, Monohardi, Narsingdi Sadar, Palash, Raipura and Shibpur (Fig. 1). Narsingdi is a densely industrial area, harbor many textile and jute mills and includes numerous agricultural fields. The northern region of the district is composed of both hillocks and plain lands and the rest of plain and low lands. It includes a total of 89045 hectares of cultivable land and 22154 hectares of fallow land. The maximum annual average temperature is 36°C, minimum 12.7°C, annual rainfall 2376 mm. Main rivers crossing this district are Meghna, Arial Khan, Haridhoa, Kalagachhia and Paharia.

This study was based on a thorough taxonomic inventory comprised of 29 field trips conducted in different seasons of 2014-2018 throughout the Narsingdi district. Standard herbarium methods and techniques were followed (e.g., Hyland, 1972, Jain & Rao, 1977) in collection, processing, drying and preservation of plant specimens. The representative herbarium specimens were examined at the Bangladesh National Herbarium (DACB), and Jahangirnagar University Herbarium (JUH). The specimens were identified by consulting Clarke (1880), Holttum (1968, 1991), Siddiqui *et al.* (2007). The relevant type images of pteridophytes available in the web pages of different international herbaria (e.g., Kew Herbarium Catalogue, Geneva Herbarium) were also matched. The voucher specimens have been preserved at JUH. Nomenclatural information of each taxon was verified following Smitinand & Larsen (1975 and 1989), Wu *et al.* (1995-2013), IPNI (2016), The Plant List (2017) and TROPICOS (2017). The families have been arranged according to the classification system of Pichi (1977). The genera and species under each family have been arranged alphabetically. The valid name of each taxon has been mentioned with full original citation, followed by the basionym and synonym/s (if available). Each species is presented with minimum taxonomic description including comment on its present distribution in the study area and citation of representative specimens.

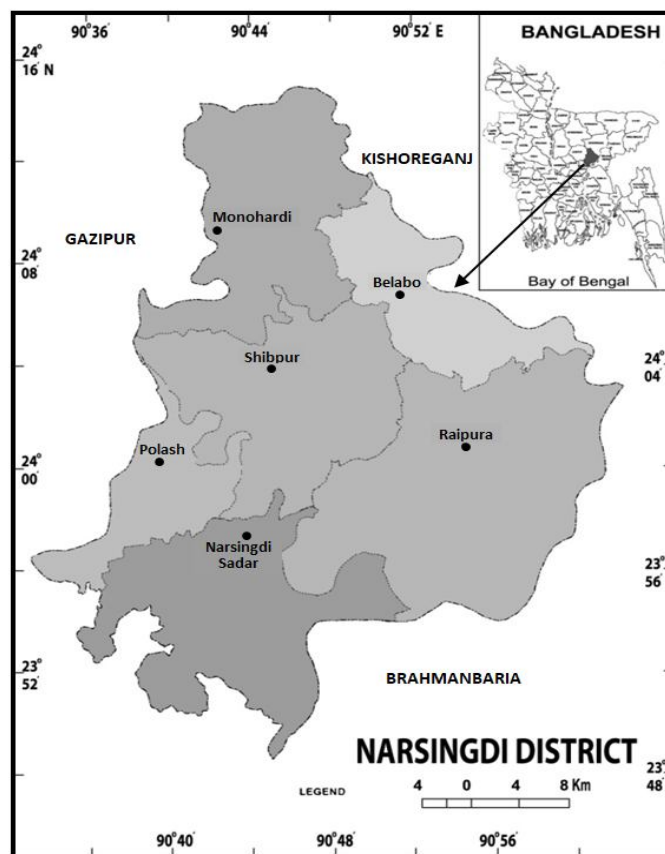


Fig. Map Showing Narsingdi district of Bangladesh

## RESULTS AND DISCUSSION

In this study a total of 31 species belonging to 20 genera of 13 families of pteridophytes have been found in Narsingdi district. For each species, up-to-date nomenclature, plant habit, ecology, distribution in Bangladesh, distribution in Narsingdi and the examined representative specimens collected from Narsingdi district has been mentioned below.

Family: **SELAGINELLACEAE** Willk., *Anleit. Stud. Bot.* 2: 163. (1854).

**Selaginella** P. Beauv., *Prodr. Aethogam.* 101 (1805).

**Selaginella ciliaris** (Retz.) Spring, *Bull. Acad. Roy. Sci. Bruxelles* 10(1): 231, no. 136. (1843). *Lycopodium ciliare* Retz. (1789).

Terrestrial herb, stem creeping, rooting at intervals. In open thickets, on sandy soil. In Bangladesh it occurs in the northern and eastern part of the country (Pasha, 1985). In Narsingdi it was found as common in Monohordi.

*Representative Specimens:* Narsingdi: Monohordi, 11 November 2016, *Robayda 989 & 990* (JUH)

Family: **SALVINIACEAE** Martinov, *Tekhno-Bot. Slovar.* 559 (1820).

**Salvinia** Ség., *Fl. Veron.* 3: 52 (1754).

**Salvinia cucullata** Roxb., *Calcutta J. Nat. Hist.* 4: 470 (1844).

Aquatic, free floating, rhizomatous herbs. On stagnant water. In Bangladesh it occurs throughout the country. In Narsingdi it was commonly found throughout the district.

*Representative specimens:* Narsingdi: Belabo, 10 June 2018, *Robayda 2045 & 2047* (JUH).

**Salvinia natans** (L.) All., *Fl. Pedem.* 2: 289 (1785). *Marsilea natans* L. (1753).

Free floating, rhizomatous herbs. On stagnant water. In Bangladesh it occurs throughout the country. In Narsingdi it was found as common in Belabo, Monohordi and Narsingdi Sadar.

*Representative specimens:* Narsingdi: Belabo, 11 August 2018, *Robayda 2820* (JUH).

**Salvinia molesta** Mitch. Br., *Fern. Gaz.* 10 (5): 251 (1972).

Aquatic, free floating, stem succulent. In river and ponds. In Bangladesh it occurs in Dhaka district and Sundarbans. In Narsingdi it was found as common in Narsingdi Sadar, Palash and Shibpur.

*Representative specimens:* Narsingdi: Narsingdi Sadar, 2 May 2017, *Robayda 2012* (JUH); 5 October 2018, *Robayda 2925 & 2927* (JUH).

**Azolla** Lam., *Encycl.* 1(1): 343 (1783).

**Azolla pinnata** R. Br., *Prodr.* 167. (1810). *Azolla imbricata* (Roxb. ex Griff.) Nakai *Bot. Mag. (Tokyo)* 39(463): 185. (1925). *Salvinia imbricata* Roxb. ex Griff. *Calcutta J. Nat. Hist.* 4: 469. (1844).

Aquatic, free floating. On stagnant water. In Bangladesh it occurs in Dhaka district. In Narsingdi it was commonly found in Belabo, Monohordi, Narsingdi Sadar and Shibpur.

*Representative specimens:* Narsingdi: Narsingdi Sadar, 20 April 2018, *Robayda 2728* (JUH); 20 September 2018, *Robayda 2890* (JUH).

Family: **MARSILEACEAE** Mirb., *Hist. Nat. Vég.* 5:126. (1802).

**Marsilea** L., *Sp. Pl.* 2: 1099. (1753).

**Marsilea quadrifolia** L., *Sp. Pl.* 2: 1099–1100 (1753). *Marsilea polycarpa* Hook. & Grev. *Icon. Filic.* 2: pl. 160 (1831) [1830].

Terrestrial herb, rhizomes creeping. In rice fields; on moist soil. In Bangladesh it occurs throughout the country. In Narsingdi it was commonly found throughout the district.

*Representative specimens:* Narsingdi: Shibpur, 25 December 2014, *Robayda 188 & 189* (JUH). Palash, 19 March 2015, *Robayda 328* (JUH). Monohordi, 11 November 2016, *Robayda 973* (JUH). Raipura 12 April 2017, *Robayda 1889* (JUH). Belabo, 8 July 2017, *Robayda 2307* (JUH).

Family: **GLEICHENIACEAE** C. Presl, *Reliq. Haenk.* 1: 70. (1825).

**Dicranopteris** Bernh., *Neues J. Bot.* 1(2): 38–39 (1805).

**Dicranopteris linearis** (Burm. f.) Underw., *Bull. Torrey Bot. Club* 34 (5): 250 (1907);

*Dicranopteris dichotoma* (Thunb.) Bernh. *Neues J. Bot.* 1(2): 38, 49, pl. 3, f. 13. 1806

[1805]; *Gleichenia linearis* (Burm. f.) C.B. Clarke Trans. Linn. Soc. London, Bot. 1(7): 428. (1880).

Terrestrial herb, rhizome long, creeping. In hill slopes, on moist soil. In Bangladesh it occurs in eastern parts of the country. In Narsingdi it was rarely found in Shibpur.

*Representative specimens*: Narsingdi: Shibpur, 7 April 2015, *Robayda* 368 & 369 (JUH).

Family: **LYGODIACEAE** M. Roem., Handb. Allg. Bot. 3: 520 (1840).

**Lygodium** Sw., J. Bot. (Schrader). 1800 (2): 7, 106 (1801).

**Lygodium flexuosum** (L.) Sw., J. Bot. (Schrader). 1800 (2): 7, 106 (1801). *Ophioglossum flexuosum* L. (1753). *Lygodium pilosum* Desv. (1827).

Terrestrial climbing herbs, rhizome creeping. In scrub jungle; on moist soil. In Bangladesh it occurs throughout the country. In Narsingdi it was found as common in Belabo, Monohordi, Palash and Shibpur.

*Representative specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 23 & 121 (JUH). Palash, 28 October 2016, *Robayda* 820 & 821 (JUH). Monohordi, 11 November 2016, *Robayda* 906 & 1310 (JUH). Belabo, 8 July 2017, *Robayda* 2232 (JUH).

Family: **PTERIDACEAE** E.D.M. Kirchn., Schul-Bot. 109. (1831).

**Adiantum** L., Sp. Pl. 2: 1094 (1753).

**Adiantum philippense** L., Sp. Pl. 2: 1094, (1753). *Adiantum arcuatum* (Poiret) Swartz; *A. lunatum* Cavanilles; *A. lunulatum* N.L. Burman; *A.*

*lunulatum* var. *limbatum* Christ; *A. lunulatum* var. *subjunonicum* Christ; *Polypodium arcuatum* Poiret; *Pteris lunulata* (N. L. Burman) Retzius.

Terrestrial herb, rhizome erect, short. On moist shady places. In Bangladesh it occurs in Chittagong district (Pasha and Chakraborty, 1984). In Narsingdi it was occasionally found in Palash.

*Representative Specimens*: Narsingdi: Palash, 28 October 2016, *Robayda* 593 (JUH).

**Adiantum tenerum** Sw., Prodr. 135, (1788).

Terrestrial herb, rhizome covered with persistent leaf bases, semi erect; on shady places. In Bangladesh it occurs in Mymensing district (Pasha and Chakraborty, 1984). In Narsingdi it was found as common in Shibpur.

*Representative Specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 96 & 97 (JUH).

**Cheilanthes** Sw., Syn. Fil. 5, 126 (1806).

**Cheilanthes belangeri** (Bory in Belang.) C. Chr., Index Filic. fasc. 3: 172 (1905).

Terrestrial herb, rhizome erect, short. In moist shady places. In Bangladesh it occurs in Chittagong, Comilla, Dhaka and Mymensing district. In Narsingdi it was found as common in Narsingdi Sadar and Shibpur.

*Representative Specimens*: Narsingdi: Narsingdi Sadar, *Robayda* 2830, 2831 (JUH). Shibpur, 25 December 2014, *Robayda* 133 (JUH).

**Pteris** L., Sp. Pl. 2: 1073 (1753).

**Pteris biaurita** L., Sp. Pl. 2: 1076 (1753). *Campteria biaurita* (L.) Hook. Gen. Fil. (Hooker) pl. 65, A. (1842). *Pteris flavicaulis* Hayata (J. Coll. Sci. Imp. Univ. Tokyo) 30(1): 443–444. (1911).

Terrestrial herb rhizome short, erect. In shady places; on moist soil. In Bangladesh it occurs in Dhaka, Sylhet, Pabna, and Panchagarh districts. In Narsingdi it was rarely found in Belabo.

*Representative Specimens*: Narsingdi: Raipura, 20 September 2018, *Robayda* 2911 & 2912 (JUH).

***Pteris ensiformis*** Burm. f., Fl. Indica 230 (1768).

Terrestrial herb, rhizome suberect. In hill slopes; on moist soil. In Bangladesh it occurs in forest areas. In Narsingdi it was commonly found in Monohordi and Shibpur.

*Representative Specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 81 & 82 (JUH); 7 April 2015, *Robayda* 378 (JUH). Monohordi, 15 August 2017, *Robayda* 2523 (JUH).

***Pteris griffithii*** Hook., Sp. Fil. 2: 170, t. 123 A (1858).

Terrestrial herb, rhizome short, ascending. In hilly forest areas, on moist soil. In Bangladesh it occurs in Sylhet

district. In Narsingdi it was commonly found in Shibpur.

*Representative Specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 212 & 213 (JUH).

***Pteris pellucida*** C. Presl, Reliq. Haenk. 1(1): 55 (1825).

Terrestrial herb, rhizome erect. In hilly forest areas, on moist soil. In Bangladesh it occurs in Dhaka, Sylhet, and Panchagarh districts. In Narsingdi it was rarely found in Shibpur.

*Representative Specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 43 (JUH); 7 April 2015, *Robayda* 353 & 375 (JUH); 18 July 2017, *Robayda* 2406 & 2407 (JUH).

***Pteris semipinnata*** L., Sp. Pl. 2: 1076 (1753).

Terrestrial herb, rhizomes erect. In hilly forest areas, on moist soil. In Bangladesh it occurs in Chittagong and Sylhet district. In Narsingdi it was rarely found in Shibpur.

*Representative specimens*: Narsingdi: Shibpur, 25 December 2014, *Robayda* 126 (JUH).

***Pteris vittata*** L., Sp. Pl. 2: 1074 (1753). *Pteris longifolia* L (1753).

Terrestrial, rhizomatous, prostrate herbs. In marginal land; on semi dry soil. In Bangladesh it occurs throughout the country. In Narsingdi it was commonly found throughout the district.

*Representative specimens*: Narsingdi: Narsingdi Sadar, 16 May 2016, *Robayda* 468 (JUH). Palash, 28 October 2016, *Robayda* 818 (JUH), 10 February 2017, *Robayda* 1586 (JUH). Monohordi, 25 January 2017, *Robayda* 1230 (JUH). Raipura, 17 April 2017, *Robayda* 1921 & 1922 (JUH).

***Ceratopteris*** Brongn, Bull. Sci. Soc. Philom. Paris. 1821: 186. (1822).

***Ceratopteris pteridoides*** (Hook.) Hieron., Bot. Jahrb. Syst. 34(5): 561 (1905)

*Ceratopteris parkeri* J. Sm. J. Bot. (Hooker) 4: 70. (1842). *Parkeria pteridoides* Hook. Exot. Fl. 2: 147, pl. 147. (1825).

Terrestrial, aquatic or semi aquatic herb, fronds dimorphic. In lakes and ponds; on marshy soil. In Bangladesh it occurs in different parts of the country. In Narsingdi it was found occasionally in Belabo and Monohordi.

*Representative specimens*: Narsingdi: Monohordi, 25 January 2017, *Robayda* 1313 (JUH), 15 August 2017, *Robayda* 2577 & 2578 (JUH). Belabo, 8 July 2017, *Robayda* 2136 (JUH).

***Ceratopteris thalictroides*** (L.) Brongn, Bull. Sci. Soc. Philom. Paris. 8: 186. (1821).

*Acrostichum thalictroides* L., Sp. Pl. 2: 1070. (1753); *A. siliquosum* L., Sp. Pl. 2: 1070. (1753); *Ceratopteris siliquosa* (L.) Copel. Philipp. J. Sci. 56 (2): 107.

(1935). *Ellobocarpus oleraceus* Kaulf. Enum. Filic. 148. (1824). *Pteris thalictroides* (L.) Sw. J. Bot. (Schrader) 1800 (2): 65. (1801).

Terrestrial, aquatic or semi aquatic herb, rhizome erect, short. In lakes and ponds; on marshy soil. In Bangladesh it occurs all over the country. In Narsingdi it was found as common in Belabo and Monohordi.

*Representative specimens*: Narsingdi: Belabo, 8 July 2017, *Robayda 2121 & 2122*, (JUH).

Family: **DENNSTAEDTIACEAE** Lotsy, Vortr. Bot. Stammesgesch. 2: 655. (1909).

**Microlepia** C. Presl, Tent. Pterid. 124–125, pl. 4, f. 21–23 (1836).

**Microlepia speluncae** (L.) T. Moore, Index Fil. 93 (1857). *Scyphofilix speluncae* Farw. mer. Midl. Naturalist 263. (1931). *Polypodium speluncae* L. Sp. Pl. 2: 1093–1094. (1753).

Terrestrial herb, rhizome creeping. In scrub jungle, on moist soil. In Bangladesh it occurs in Chittagong, Dhaka and

Rangpur district. In Narsingdi it was commonly found in Belabo, Monohordi and Shibpur.

*Representative specimens*: Narsingdi: Shibpur, 2 April 2017, *Robayda 1743 & 1745* (JUH). Belabo, 8 April 2017, *Robayda 2156 & 2158* (JUH). Monohordi, 18 August 2017, *Robayda 2614 & 2615* (JUH).

Family: **LINDSAEACEAE** C. Presl ex M.R. Schomb, Reis. Br.-Guiana 3: 883, 1048 (1848) [1849].

**Lindsaea** Dryand. ex Sm., Mém. Acad. Roy. Sci. (Turin) 5: 413, pl. 9, f. 4 (1793).

**Lindsaea ensifolia** Sw., J. Bot. (Schrader) 1800(2): 77 (1801). *Schizoloma pentaphyllum* (Hook.) Fée 5: 108, t. 67. 1852. *Adiantum ensifolium* (Sw.) Poir. Encycl., Suppl. 1(1): 139. (1810).

Terrestrial herb, rhizomes long creeping. In hill slopes, on moist soil. It is widespread in Bangladesh. In Narsingdi it was rarely found in Shibpur.

*Representative specimen*: Narsingdi: Shibpur, 7 April 2017, *Robayda 355 & 372* (JUH).

Family: **POLYPODIACEAE** J. Presl & C. Presl, Delic. Prag. 159. (1822).

**Drynaria** (Bory) J. Sm., J. Bot. (Hooker) 4: 60 (1842).

**Drynaria quercifolia** (L.) J. Sm., J. Bot. (Hooker). 3: 398 (1841). *Polypodium quercifolium* L. Sp. Pl. 2: 1087 (1753).

Epiphytic herbs, rhizome fleshy. On tree trunks. In Bangladesh it occurs throughout the country. In Narsingdi it was commonly found all over the district.

*Representative specimen*: Narsingdi: Narsingdi Sadar, 9 May 2017, *Robayda 2112* (JUH). Monohordi, 18 August 2017, *Robayda 2646 & 2684* (JUH).

**Microsorium** Link, Hort. Berol. 2: 110 (1833).

**Microsorium punctatum** (L.) Copel., Univ. Calif. Publ. Bot. 16(2): 111 (1929). *Acrostichum punctatum* L. Sp. Pl. (ed. 2) 2: 1524. 1763. *Polypodium validum* Copel. Fragm. Fl. Philipp. 3: 191. (1905).

Epiphytic herb, rhizome creeping. On tree trunks. In Bangladesh it occurs throughout the country. In Narsingdi it was occasionally found in Monohordi, Palash and Raipura.

*Representative specimens*: Narsingdi: Monohordi, 25 January 2017, *Robayda 1107 & 1187* (JUH). Raipura, 17 April 2017, *Robayda 1961* (JUH).

**Pyrrhosia** Mirb., Hist. Nat. Vég. 3: 471 (1803) [1802].

**Pyrrosia nuda** (Giesenh.) Ching, Bull. Chin. Bot. Soc. 1(1): 70. 1935.  
*Cyclophorus nudus* (Giesenh.) C. Chr. Index Filic. 4: 200. (1905).  
*Niphobolus nudus* Giesenh. Farn. Niph. 149–151. (1901).

Epiphytic herb, rhizome long creeping. On tree trunks. In Bangladesh it occurs throughout the country. In Narsingdi it was occasionally found in Monohordi and Narsingdi Sadar.

*Representative specimens*: Narsingdi: Narsingdi Sadar, 9 May 2017, *Robayda 2113* (JUH). Monohordi, 18 August 2017, *Robayda 2674* (JUH).

**Pyrrosia piloselloides** (L.) M.G., Price Kalikasan 3: 176–197 [1975].  
*Drymoglossum piloselloides* (L.) C. Presl Tent. Pterid. 227, pl. 10, f. 5–6. 1836.  
*Pteris piloselloides* L. Sp. Pl. (ed. 2) 2: 1530. (1763).

Epiphytic herb, rhizome long creeping. On tree trunks. In Bangladesh it occurs throughout the country. In Narsingdi it was found as common in Belabo, Monohordi and Palash.

*Representative specimens*: Narsingdi: Belabo, 8 July 2017, *Robayda 2317 & 2318* (JUH). Monohordi, 15 August 2017, *Robayda 2501 & 2502* (JUH).

Family: **BLECHNACEAE** Newman, Hist. Brit. Ferns (ed. 2) 8. (1844).

**Blechnum** L., Sp. Pl. 2: 1077 (1753).

**Blechnum orientale** L., Sp. Pl. 2: 1077. 1753. *Blechnopsis orientalis* (L.) C. Presl. Abh. Königl. Böhm. Ges. Wiss., ser 5, 6: 477. (1851).

Terrestrial herb, rhizome erect, stout. In open places of hill foot; on moist soil. In Bangladesh it occurs throughout the country. In Narsingdi it was rarely found in Shibpur.

*Representative specimen*: Narsingdi: Shibpur, 7 April 2015, *Robayda 429 & 430* (JUH).

Family: **THELYPTERIDACEAE** Ching ex Pic., Serm. Webbia 24: 709. (1970).

**Ampelopteris** Kunze, Bot. Zeitung (Berlin) 6: 114. (1848).

**Ampelopteris prolifera** (Retz.) Copel., Gen. Fil. 144. (1947).

*Dryopteris prolifera* (Retz.) C. Chr. Index Filic. 5: 286. (1905).

*Hemionitis prolifera* Retz. Observ. Bot. 6: 36, 38. (1791).

Terrestrial herb, rhizome creeping, stout. Open places of hill foot; on moist soil. In Bangladesh it occurs in Sylhet district. In Narsingdi it was found as common in Monohordi, Palash and Raipura.

*Representative specimens*: Narsingdi: Monohordi, 11 November 2016, *Robayda 857* (JUH), 25 January 2017, *Robayda 1243 & 1268* (JUH). Palash, 10 February 2017, *Robayda 1607* (JUH). Raipura, 12 April 2017, *Robayda 1897 & 1901* (JUH).

**Cyclosorus** Link, Hort. Berol. 2: 128. (1833).

**Cyclosorus aridus** (D. Don) Tagawa, Acta Phytotax. Geobot. 7: 78. 1938.

*Aspidium aridum* D. Don Prodr. Fl. Nepal. 4. 1825. *Christella arida* (D. Don) Holttum Companion Beddome's Handb. Ferns Brit. India 206 (1974).

Terrestrial herb, rhizome long creeping. In scrub jungle, on moist soil. In Bangladesh it occurs in Chittagong, Chittagong Hill Tracts, Cox's Bazar and Sundarbans. In Narsingdi it was rarely found in Monohordi and Palash.

*Representative specimens*: Narsingdi: Monohordi, 25 January 2017, *Robayda 1289 & 1363* (JUH); Palash, 10 February 2017, *Robayda 1608* (JUH).



**Cyclosorus dentatus** (Forssk.) Ching, Bull. Fan Mem. Inst. Biol., Bot. 8(4): 206–209 (1938). *Polypodium dentatum* Forssk. Fl. Aegypt.-Arab. 185. (1775). *Christella dentata* (Forssk.) Brownsey & Jermy Brit. Fern Gaz. 10(6): 338. (1973).

Terrestrial herb, rhizome short creeping. In scrub jungle, on moist soil. In Bangladesh it occurs in Chittagong and Dhaka districts. In Narsingdi it was commonly found all over the district.

*Representative specimens*: Narsingdi: Shibpur 25 December 2014, *Robayda 210 & 211* (JUH). Palash, 28 October 2016, *Robayda 595* (JUH), 3 February 2017, *Robayda 1460* (JUH). Monohordi, 11 November 2016, *Robayda 1013* (JUH), 25 January 2017, *Robayda 1253* (JUH). Belabo, 8 July 2017, *Robayda 2194 & 2274* (JUH).

Family: **ATHYRIACEAE** Alston, Taxon 5: 25. (1956).

**Diplazium** Sw., J. Bot. (Schrader) 1800(2): 4, 61 (1801).

**Diplazium esculentum** (Retz.) Sw., J. Bot. (Schrader) 1801(2): 312 (1803). *Hemionitis esculenta* Retz. Observ. Bot. 6: 38. (1791). *Anisogonium esculentum* (Retz.) C. Presl Tent. Pterid. 116. (1836).

Terrestrial herb, rhizome creeping. In scrub jungle, on moist soil. In Bangladesh it occurs in Chittagong, Cox's Bazar, Rajshahi, Rangpur and Sylhet districts. In Narsingdi it was commonly found throughout the district.

*Representative specimens*: Narsingdi: Narsingdi Sadar, 16 May 2016, *Robayda 520* (JUH);

Palash, 28 October 2016, *Robayda 596 & 819* (JUH); 3 February 2017, *Robayda 1524* (JUH). Monohordi, 25 January 2017, *Robayda 1242 & 1333* (JUH); 15 August 2017, *Robayda 2531 & 2532* (JUH). Belabo, 8 July 2017, *Robayda 2159 & 2275* (JUH). Raipura 12 April 2017, *Robayda 1827 & 1905* (JUH).

Family: **TECTARIACEAE** Panigrahi, J. Orissa Bot. Soc. 8: 41 (1986).

**Tectaria** Cav., Anales Hist. Nat. 1(2): 115 (1799).

**Tectaria chattagrammica** Ching, Sinensia 2: 35, fig. (1931).

Terrestrial herb, rhizome short, stout. In hill slope, on moist soil. In Bangladesh it occurs in Chittagong district. In Narsingdi it was occasionally found in Shibpur and Raipura.

*Representative specimen*: Narsingdi: Shibpur, 25 December 2014, *Robayda 98 & 99* (JUH); 7 April 2015, *Robayda 373 & 413* (JUH). Raipura, 18 July 2017, *Robayda 2408* (JUH).

Among the total 31 pteridophyte species recorded from Narsingdi district 21 were terrestrial, two species were both terrestrial and semiaquatic, four species were aquatic and other four species were epiphytic. A total of 19 species were found in each of Monohordi and Shibpur upazilas, which was followed by 14, 13, 11 and 9 species, found respectively in Belabo, Palash, Narsingdi Sadar and Raipura upazilas. *Selaginella ciliaris* (Retz.) Spring was found only in Monohordi upazila, whereas *Adiantum philippense* L. in Palash upazila and *Pteris biaurita* L. in Belabo upazila only. Seven species, viz. *Dicranopteris linearis* (Burm. f.) Underw., *Adiantum tenerum* Sw., *Pteris griffithii* Hook., *P. pellucida* C. Presl, *P. semipinnata* L., *Lindsaea ensifolia* Sw., and *Blechnum orientale* L. were found only in Shibpur upazila. These data indicate that Monohordi and Shibpur upazilas harbors most of the pteridophytes of Narsingdi district recorded during this study. Pteridaceae with 11 species was found as the largest family, which was followed by Salviniaceae and Polypodiaceae, each with four and

Thelypteridaceae with three species. The rest nine families consisted of one species each. Only four families, namely Pteridaceae, Salviniaceae, Polypodiaceae and Thelypteridaceae constituted 70.96% of total pteridophytic flora of the area, whereas, remaining nine families 29.03%. *Pteris* with six species was found as the largest genus, which was followed by *Salvinia* with three species, *Adiantum*, *Ceratopteris*, *Pyrrosia* and *Cyclosorus*, each with two species. The rest of the 14 genera consisted of one species each. Uddin & Pasha (1997) recorded 16 fern allies, Mirza & Rahman (1997) listed 161 species of fern and fern allies & Siddiqui *et al.* (2007) compiled 195 species of pteridophytes from Bangladesh. Considering Siddiqui *et al.* (2007), the Narsingdi district harbors 15.89 percent of the pteridophyte species of Bangladesh, which indicate that this district is an important area for harboring the pteridophytes of this country. Uddin & Hassan (2012) reported 41 species from Rampahar & Sitapahar and Rahman *et al.* (2016) 24 species from Sundarbans. In respect to the size of land area, the species composition of the pteridophytes of Narsingdi district seems higher than that of Sundarbans (Rahman *et al.*, 2016), whereas it is relatively poorer than that of Rampahar & Sitapahar (Uddin & Hassan 2012). The species *Tectaria chattagrammica* Ching. has been enlisted as DD (Data deficient) in Red Data Book by Khan *et al.* (2001). During this study, it has been found as common in Narsingdi district with normal natural regeneration.

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