

Macrophytic flora of Gossaihat Beel, Jalpaiguri Forest Division, West Bengal, India: II. Pteridophyta and Liliopsida

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Abstract

A floristic survey on aquatic macrophytic vegetation in Gossaihat Beel, Moraghat range under Jalpaiguri Forest Division was carried out for the first time on 18th March, 2012. A total of 109 species of Liliopsida covering 71 genera from 13 families and 21 species of Pteridophytes covering 16 genera from 14 families were recorded from the study area. Of these, 38 species of monocots and 06 species of pteridophytes are truly aquatic.

Key words: Gossai Hat Beel, Aquatic vegetation, Flora, Pteridophyta, Liliopsida.

INTRODUCTION

Gossaihat Beel is the life land of aquatic plants, animals and acts as the cardle of biodiversity in Moraghat Reserve Forest area under the Jalpaiguri Forest Division in the Duars region of West Bengal. Many varieties of waterfowl and non-game birds depend on this wetland for their feeding, nesting and resting. Other wild animals, including a variety of reptiles, amphibians and mammals depend on insect-based food webs in the area and on Beel water to drink. Wetlands are also treated as house for turtles, snakes, frogs, toads etc. Geographical position of the central part of the Beel is 26° 41.41' North latitude and 88°59.23' East longitude with an area of about 15 Hecters. The vegetation type of this wetland and its surrounding forest areas are very similar to the vegetation of East Himalayan Foothills and of Duars in West Bengal. Hooker (1872 – 1897) and Cowan & Cowan (1929) previously worked on the foothill part of this region. Recently Grierson & Long (1983 – 2001), Noltie (1994, 2000), Das *et al* (2010 a,b) worked on the flora of Duars region and Banerjee (1993), Das *et al* (2003) worked on the floral struture of nearby Jaldapara Wildlife Sactuary [now, Jaldapara National Park]. Bandyopadhyay & Mukherjee (2005) made detailed survey on aquatic plants of Cooch Behar district. The Moraghat Forest Range is quite close to the base of Darjeeling Hills and forms a part of the IUCN recognized Himalaya Biodiversity Hotspot. The sourrding vegetation structure of this wetland is broadleaf evergreen forest and mixed deciduous forest and the northern part of wetland is *Phragmites* dominated grass land. Biswas *et al.* (2012) published the Magnoliopsids of this Beel and the present article records the Pteridophytes and Liliopsids recorded from the Gossaihat Beel.

METHODOLOGY

Random floristic survey has been conducted throughout the wetland. Collected specimens were processed through the conventional techniques (Jain & Rao 1977) in the Taxonomy

and Environmental Biology Laboratory, Department of Botany of the University of North Bengal. Preliminary identification of specimens were done using floras covering this and nearby areas including Grierson & Long (1983, 1984, 1997, 1999, 2000, 2001), Noltie (1994, 2000), Cook (1996), Bora & Kumar (2003), Ghosh *et al.* (2004), and Singh & Panigrahi (2005). Identity of specimens were confirmed by matching at CAL and NBU Herbaria. Finally the specimens are stored in the NBU Herbarium. While for the nomenclature www.theplantlist.org has been consulted frequently, for family delimitation APG-III classification (Chase & Reveal 2009) has been followed in general.

The recorded flora has been enumerated in the Annexure – I with families arranged alphabetically. The genera under a family and species under a genus are also presented in the similar sequence.

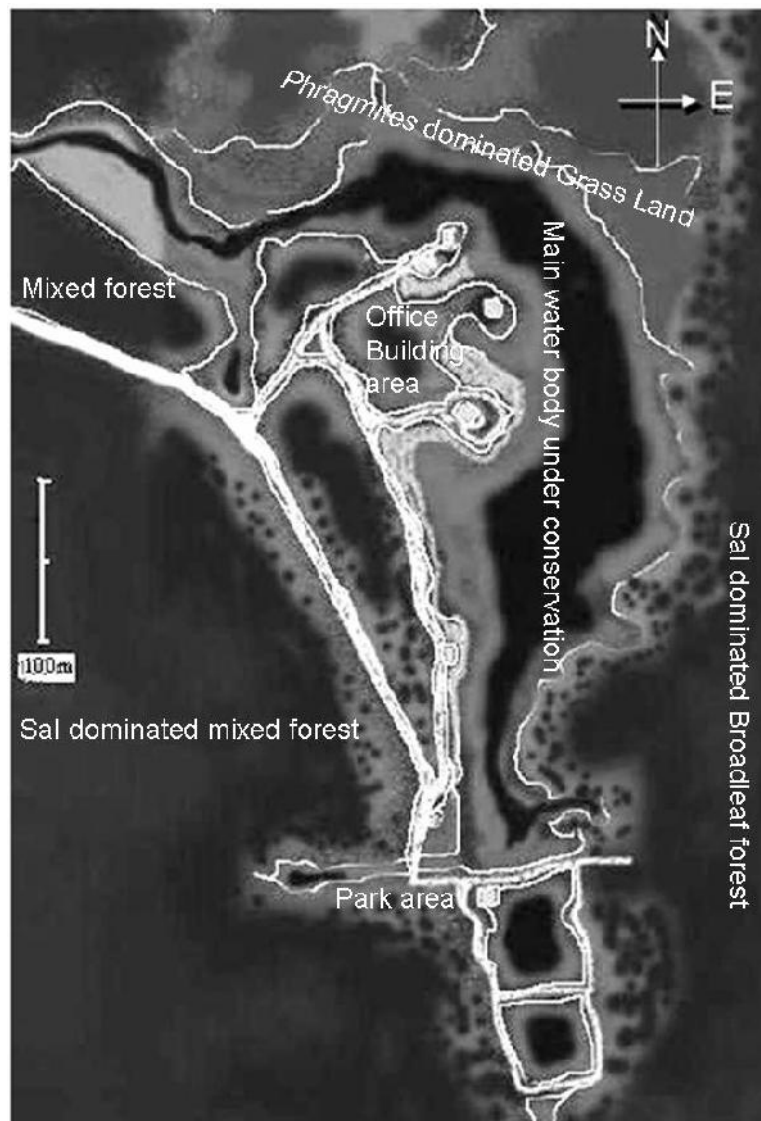


Fig. 1. Map of the Gossaihat Beel. [Source: Biswas *et al.* 2012]

RESULT AND DISCUSSION

A total of 130 species have been recorded from the study area. These includes 21 species of Pteridophytes covering 16 genera from 14 families and the remaining 109 species are the members of Liliopsida covering 71 genera from 16 families. Of these 06 species of Pteridophytes and 38 species of monocots are truly aquatic. All the recorded species were classified into 15 growth forms, and from the analysis of data, it is evident that there are 14 species of Ceratophyllids, 6 of Parvopotamids, 6 of Nymphaeids, 2 of Utriculareids, 38 of Helophytes, 2 of Marselids, 3 of Lemnids, 4 of Magnolemnids, 22 Psuedohydrophytes, 15 Rhizopleaustohelophytes, 14 Tenagophytes and one species each for Eichhornids, Vallisnerids, Trapids and Myriophyllids. *Caldesia parnassifolia*, *Cryptocoryne ciliata* are the most interesting plants of the study area.

Biswas *et al.* (2012) recorded 176 species of Magnoliopsids (covering 129 genera under 45 families) and the present communication records the presence of 21 species of Pteridophytes and 109 species of Liliopsids that brings the total vascular flora of Gossaihat Beel to 306 species under 216 genera from 75 families. This speaks for the richness of biodiversity of the small (about 15 hectares) tropical sub-Himalayan perennial wetland.

Gossaihat Beel has a significant area of marshy land which allures various migratory and inland birds including *Machhranga*, *Neel Finga*, *Fingey*, *Dhanesh*, *Bene Bou*, *Hartiti*, *Titeer*, *Goyar*, *Bali Hans*, *Peeing Hans*, *Sharal*, *Jal-Pipi*, *Madantak*, *Samukh-Khol*, *Brahmni-Duc* etc. This wetland is increasingly facing several anthropogenic pressures. The key factors may be cited here as tourism and various other anthropogenic activities resulted in over exploitation of wetland resources leading to the large scale degradation in terms of their quality and quantity. Besides, unplanned grazing and fishing activities are also degrading this wetland biodiversity.

From the conservation point of view it is suggested that the extraction of forest resources should be minimized to check the degradation of the present vegetation structure in and around the wetland area; local people may be trained to avoid the collection of forest-resources; tourism should be conducted in quite controlled condition and no exotic species of plants should be introduced in the area, even not the garden plants!

Acknowledgements

Authors are thankful to Mr. Kalyan Das, the then Divisional Forest Officer and other personnel of the Jalpaiguri Forest Division, Government of West Bengal, India for allowing and assisting the survey work.

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ANNEXURE – I

Enumeration of Pteridophyta and Liliopsida recorded from the Gossaihat Beel

PTERIDOPHYTA

Adiantaceae

Cheilanthes albomarginata C.B. Clarke in Trans. Linn. Soc. London, Bot. 1(7): 456, pl. 52 1880. *Aleuritopteris albomarginata* (C.B. Clarke) Ching in Hong Kong Nat. 10: 199. 1941.

Exsicattus: Gossaihat Beel, Anurag, Rajib & A.P.Das 01243, dated 18. 03. 2012.

General Distribution: India, Nepal, Bhutan, China.

Azollaceae

Azolla pinnata R. Brown. in Prodr. 167. 1810.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01353*, dated 18. 03. 2012.

General Distribution: India (Entire low lands), Africa, Asia, Australia, Malaya and Taiwan.

Blechnaceae

Blechnum orientale Linnaeus, Sp. Pl. ed. 1, 2: 1077. 1753; Beddome, Handb. Ferns Brit. Ind. 132. t. 66.1883.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01351*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka, Nepal, Bhutan, Bangladesh, China, Myanmar, Thailand, Indonesia, Malaysia, Australia.

Davalliaceae

Nephrolepis auriculata (Linnaeus) Trimen in J. Linn. Soc. London Bot. 24: 152. 1887.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01360*, dated 18. 03. 2012.

General Distribution: India: throughout Tropical Asia.

Dryopteridaceae

Dryopteris filix-mas (Linnaeus) Schott, Gen. Fil. Ad. pl. 9. 1834.

Polypodium filix-mas Linnaeus, Sp. Pl. 1090. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01241*, dated 18. 03. 2012.

General Distribution: India, Afganistan, Pakistan, Europe, North America.

Dryopteris sikkimensis (Beddome) O. Kuntze., Rev. Gen. Pl.,2, 813, 1891.

Polystichum sikkimensis Beddome, Ferns brit. India,t.127, 1866.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01240*, dated 18. 03. 2012.

General Distribution: India, Bhutan, China, Bangladesh, Pakistan.

Polystichum lentum (D. Don) T. Moore, Ind. Fil.: 86, 95. 1858.

Aspidium lentum D. Don, Prod. Fl. Nepal. 4. 1825

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01346*, dated 18. 03. 2012.

General Distribution: India, Nepal, Bhutan.

Gleicheniaceae

Dicranopteris linearis (Burman *f.*) Underwood in bull. Torey Bot. Cl., 34: 250. 1907.

Polypodium lineare Burman *f.*, Fl. India 235, t. e. 2. 1768.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 011352*, dated 18. 03. 2012.

General Distribution: India: throughout; Tropics and Subtropics.

Lycopodiaceae

Lycopodiella cernua (Linnaeus) Pichi Sermolli in Webbia 23: 166. 1968.

Lycopodium cernuum Linnaeus, Sp. Pl. 2: 1103. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01346*, dated 18. 03. 2012.

General Distribution: India: throughout; Tropics and Subtropics.

Marsileaceae

Marsilea minuta Linnaeus, Mant. 308. 1771.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01246*, dated 18. 03. 2012.

General Distribution: India, Africa, Trinidad, Brazil.

Pteridaceae

Ceratopteris thalictroides (Linnaeus) Brongniart, Bull. Soc. Philom. Paris 186. 1821.

Acrostichum thalictroides Linnaeus, Sp. Pl. 2: 1070.1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01245*, dated 18. 03. 2012.

General Distribution: Throughout the tropics & sub-tropics.

Pteris biaurita Linnaeus, Sp. Pl. 2: 1076. 1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01366*, dated 18. 03. 2012.

General Distribution: India; Tropics and Sub tropics.

Pteris vittata Linnaeus, Sp. Pl. 2: 1074. 1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01359*, dated 18. 03. 2012.

General Distribution: India: throughout; Cosmopolitan.

Salviniaceae

Salvinia natans Allioni, Fl. Pedemont.2: 289. 1785.

Mersilea natans Linnaeus Sp. Pl. ed. 2: 1099. 1762.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01356*, dated 18. 03. 2012.

General Distribution: India (Bihar, West Bengal, Assam, Meghalaya, Manipur, Tripura, Uttar Pradesh and Kashmir), Europe, Asia, Africa and North America..

Salvinia cucullata Roxburgh *ex* Bory in C.P. Belanger, Voy. IndesOr. 2(1): 6. 1833.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01352*, dated 18. 03. 2012.

General Distribution: India (Bihar, West Bengal, Assam, Meghalaya, Manipur, Tripura, Nagaland and Mizoram) and South – East Asia.

Schizaeaceae

Lygodium flexuosum (Linnaeus) Swartz, in Schard. In J. Bot. 1800(2): 7. 106. 1810.

Ophioglossum flexuosum Linnaeus, Sp. Pl. 2: 1063. 1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01339*, dated 18. 03. 2012.

General Distribution: India, Africa, Australia, China, Malaysia, Philippines, Sri Lanka.

Lygodium microphyllum (Cavanilles) R. Brown, Prodr. Nov. Hollandiae: 162. 1810;

Ugena microphylla Cavanilles, Icon. 6: 76, pl. 595, f. 2. 1801.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01243*, dated 18. 03. 2012.

General Distribution: India, Srilanka, Malaysia, Hong Kong, Australia.

Selaginellaceae

Selaginella tenuifolia Spring, Monogr. Lyc. 2: 253, 1850; Alston, Proc. Nat. Inst. Sc. Ind. 11: 226. 1945.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das01242* , dated 18. 03. 2012.

General Distribution: India, Japan, China, Korea, Pakistan, Bangladesh, Myanmar, Thailand, Laos.

Selaginella monospora Spring in Mem. Acad. Roy. Sci. , Belgique, 24.135.1850.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01350*, dated 18. 03. 2012.

General Distribution: India, Nepal, Bhutan, Myanmar, Thailand, China, Vietnam.

Thelypteridaceae

Thelypteris rectangularis (Zollinger) B.K. Nayer & S. Kaur in Comp. Bedd. Handb. 74. 1974.

Polypodium rectangulare Zollinger, Syst. Verz. 37: 48. 1854.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01235*, dated 18. 03. 2012.

General Distribution: India, Malaya, Indonesia.

Woodsiaceae

Diplazium esculentum (Retzius) Swartz in Schrader, J. Bot. 1801 (2): 312. 1803.

Hemionitis esculenta Retzius, Obs. Bot. 4: 38. 1791.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01355*, dated 18. 03. 2012.

General Distribution: India (Arunachal Pradesh, Assam, Meghalaya, Tripura, Western Ghats), Bangladesh, China, Formosa and Malaya.

MAGNOLIOPHYTA : LILIOPSIDA

Alismataceae

Butomopsis latifolia (D. Don) Kunth, Enum. Pl. 3: 165. 1841.

Butomus latifolius D. Don, Prodr. Fl. Nepal. 22. 1825.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01322*, dated 18. 03. 2012.

General Distribution: Old world tropics and W, Australia: India, Bangladesh, Nepal.

Limnocharis flava (Linnaeus) Buchenau, Abh. Naturwiss. Verein Bremen 2: 2. 1868.

Alisma flavum Linnaeus, Sp. Pl. 1: 343. 1753.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01335*, dated 18. 03. 2012.

General Distribution: Tropical America: Bangladesh, India and Burma.

Sagittaria sagittifolia Linnaeus, Sp. Pl. 2: 993. 1753.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01249*, dated 18. 03. 2012.

General Distribution: Plains of India; N. Asia, N. America, Europe.

Sagittaria guayanensis Humboldt, Bonpland & Kunth, Nov. Gen. Sp.1: 250. 1815.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01296*, dated 18. 03. 2012.

General Distribution: Throughout India; China, Malaysia, Australia.

Caldesia parnassifolia (Bassi ex Linnaeus) Parlatore, Fl. Ital. 3: 599. 1860. *Alisma parnassifolium* Bassi ex Linnaeus, Syst. Nat., ed. 12, 3: 230. 1768.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01349*, dated 18. 03. 2012.

General distribution: India, Japan, Korea, Nepal, Pakistan, Russia, Thailand, Vietnam; Africa, Australia, Europe.

Aponogetonaceae

Aponogeton crispus Thunberg, Nov.Gen. 4: 73. 1784.

Exsiccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01262*, dated 18. 03. 2012.

General Distribution: India; Native to Sri Lanka

Aponogeton natans (Linnaeus) Engler & Krause, Engler Pfreich. 24: 11. 1906.

Saururus natans Linnaeus, Mantissa 2: 227. 1767.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01266*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka, Tropical Asia and Africa.

Araceae

Colocasia esculenta (Linnaeus) Schott in Schott & Endlicher, Melet. Bot. 18. 1832.

Arum esculentum Linnaeus, Sp. Pl. 965. 1753.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01247*, dated 18. 03. 2012.

General Distribution: Tropical Asia and South America.

Cryptocoryne ciliata (Roxburgh) Fischer ex Wydler, Linnaea 5: 428. 1830.

Ambrosinia ciliata Roxb. Corm. Pl. 7. 90, t. 294. 1819.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01309*, dated 18. 03. 2012.

General Distribution: India and Malaya Island.

Lasia spinosa (Linnaeus) Thwaites, Enum. Pl. Zeyl. 336. 1864.

Dracontium spinosum Linnaeus, Sp. Pl. 2: 967. 1753.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01306*, dated 18. 03. 2012.

General Distribution: India (Tropical Himalaya), China, Malaysia, Myanmar, Sri Lanka.

Typhonium flagelliforme (Roxburgh) Blume, Rumphia 1: 134. 1835.

Arum flagelliforme Roxburgh in Hort. Beng 65: 1814.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01340*, dated 18. 03. 2012.

General Distribution: India, China, Malaya to Timor, Marianne Island.

Pistia stratiotes Linnaeus, Sp. Pl. 2: 963. 1753.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01258*, dated 18. 03. 2012.

General Distribution: Throughout India; Sri Lanka.

Pothos scandens Linnaeus, Sp. Pl. 2: 968. 1753.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01285*, dated 18. 03. 2012.

General Distribution: Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, Philippines, Singapore, Sri Lanka, Thailand, Vietnam; Madagascar.

Lemna minuta Kunth in A. von Humboldt *et al.*, Nov. Gen. Sp. 1: 372. 1816.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01320*, dated 18. 03. 2012.

General Distribution: Throughout the India; Cosmopolitan in tropics and subtropics.

Spirodela polyrrhiza (Linnaeus) Schleiden in Linnaea 13: 392. 1829.

Lemna polyrrhiza Linnaeus, Sp. Pl. 970: 1753.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01345*, dated 18. 03. 2012.

General Distribution: India; tropical and temperate part of the world.

Wolffia globosa (Roxburgh) Hartog & Plas, Blumea 18: 367. 1970.

Lemna globosa Roxburgh, Fl. Ind. 3: 565. 1832.

Exsciccattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01332*, dated 18. 03. 2012.

General Distribution: India, warmer part of both Hemispheres.

Commelinaceae

Amischotolype hookeri (Hasskarl) H. Hara, Fl. East. Himal. 1:399. 1966.

Forrestia hookeri Hasskarl, Flora 47: 629. 1864.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01270*, dated 18. 03. 2012.

General Distribution: Bangladesh, Bhutan, India, Laos, Myanmar, Nepal, Vietnam.

Commelina benghalensis Linnaeus, Sp. Pl. 1: 41.1753, nom. cons.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01329*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Myanmar, Java, Hong Kong.

Commelina diffusa Burman *f.*, Fl. Indica 18. t. 7. f. 2. 1768.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01337*, dated 18. 03. 2012.

General Distribution: Pantropic.

Commelina sufruticosa Blume, Enum. Pl. Jav. 1: 3. 1827.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01248*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Nepal, Malay.

Cyanotis vaga (Loureiro) Schultes & J.H. Schultes in Roemer & Schultes, Syst. Veg. 7: 1153. 1830. *Tradescantia vaga* Loureiro, Fl. Cochinch. 1: 193. 1790;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01289*, dated 18. 03. 2012.

General Distribution: Bhutan, India, Laos, Myanmar, Nepal, Sikkim, Thailand, Vietnam

Cyanotis axillaris (Linnaeus) D. Don *ex* Sweet, Hort. Brit. 430. 1826.

Commelina axillaris Linnaeus, Sp. Pl. 1: 42. 1753;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01257*, dated 18. 03. 2012.

General Distribution: Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand, Vietnam; Oceania.

Cyanotis cristata (Linnaeus) D. Don, Prodr. Fl. Nepal. 46. 1825.

Commelina cristata Linnaeus, Sp. Pl. 1: 42. 1753;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01302*, dated 18. 03. 2012.

General Distribution: Bhutan, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Sikkim, Sri Lanka, Thailand, Vietnam.

Murdannia nudiflora (Linnaeus) Brenan in Kew Bull. 7: 189. 1952.

Commelina nudiflora Linnaeus, Sp. Pl. 41. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01314*, dated 18. 03. 2012.

General Distribution: Pantropical.

Murdannia spirata (Linnaeus) G. Brueckner in Pfamilien. ed. 2, 15a: 173. 1930.

Commelina spirata Linnaeus, Mant. Alt. 176. 1771.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01267*, dated 18. 03. 2012.

General Distribution: India, Indo-Malaysia.

Costaceae

Cheilocostus speciosus (J.Koenig) C.D.Specht, Taxon 55: 159. 2006. *Banksea speciosa*

J.Koenig, Observ. Bot. 3: 75. 1783. *Costus speciosus* (Koenig) J.E. Smith, Trans. L. Soc. 1: 249. 1791.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01354*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Sri Lanka, Java.

Cyperaceae

Carex maculata Boott in Trans. Linn. Soc. London, 20: 128. 1846.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01290*, dated 18. 03. 2012.

General Distribution: Sri Lanka, China, Malesia, Japan, Formosa. INDIA: South India and North East India.

Kyllinga brevifolia Rottboell, Descr. Icon. Rar. Pl. 13. 1773.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01311*, dated 18. 03. 2012.

General Distribution: India, Bhutan, China, native to Bahamas, Asia, Malesia, Australia, and Pacific Region, United States, Mexico, Central America, South America, Africa, Cuba, Jamaica, Puerto Rico, Tobago, Trinidad.

Kyllinga nemoralis (J.R. Forster & G. Forster) Dandy ex Hutchinson & Dalziel, Fl. W. Trop. Afr. 2: 487. 1936. *Thryocephalon nemorale* J. R. Forster & G. Forster, Char. Gen. Pl. 130. 1776.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01318*, dated 18. 03. 2012.

General Distribution: India, Bhutan, China, native to the tropics and subtropics of Africa, Asia, Malesia, Australia, and the Pacific Region including Hawaii, Jamaica, Puerto Rico, Lesser Antilles, Tobago, Trinidad, Hawaii, and South America.

Cyperus halpan Linnaeus, Sp. Pl. 1: 45. 1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01300*, dated 18. 03. 2012.

General Distribution: India, Tropical, sub-tropical and temperate regions of the old world.

Cyperus pangorei Rottboøll, Descr. Pl. Rar. 18. 1772.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01305*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Burma, Pakistan.

Cyperus stoloniferus Retzius, Observ. Bot. 4: 10. 1786.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01336*, dated 18. 03. 2012.

General Distribution: Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Pakistan, Philippines, Sri Lanka, Thailand, Vietnam; N Australia, Indian Ocean Islands, Madagascar.

Cyperus digitatus Roxburgh, Fl. Ind. 1: 205. 1820.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01344*, dated 18. 03. 2012.

General Distribution: India; Tropical countries.

Cyperus distans Linnaeus f., Suppl. Pl. 103. 1781.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01328*, dated 18. 03. 2012.

General Distribution: Tropical and sub-tropical regions of the old world.

Cyperus rotundus Linnaeus, Sp. Pl. 1: 45. 1753.

Exscicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01277*, dated 18. 03. 2012.

General Distribution: Throughout India; warm countries.

Cyperus difformis Linnaeus, Sp. Pl. 46. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01250*, dated 18. 03. 2012.

General Distribution: India, Bangladesh and Sri Lanka.

Cyperus pilosus Vahl, Enum. Pl. 2: 354. 1805.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01261*, dated 18. 03. 2012.

General Distribution: India, Tropical Africa, Asia and Australia.

Cyperus iria Linnaeus, Sp. Pl. 1: 45. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01330*, dated 18. 03. 2012.

General Distribution: India; Southern Hemisphere.

Cyperus compressus Linnaeus, Sp. Pl. 1: 46. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01273*, dated 18. 03. 2012.

General Distribution: Throughout India; Sri Lanka, Tropical Africa, Asia and America.

Cyperus cyperoides (Linnaeus) Kuntze, Revis. Gen. Pl. 3: 333. 1898.

Scirpus cyperoides Linnaeus, Mant. Pl. Alt. 181. 1771;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01284*, dated 18. 03. 2012.

General Distribution: Tropical and sub-tropical regions of the old world.

Bulbostylis densa (Wallich) Handel-Mazzetti, Vegetationsbilder 20(7): 16. 1930.

Scirpus densus Wallich in Roxburgh, Fl. Ind. 1: 231. 1820.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01263*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Nepal, China, Japan, Africa.

Fimbristylis aestivalis (Retzius) Vahl, Enum. Pl. 2: 288.1806.

Scirpus aestivalis Retzius, Observ. Bot. 4: 12. 1786.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01283*, dated 18. 03. 2012.

General Distribution: India, china, Japan, Malaysia and N. Australia.

Fimbristylis dichotoma (Linnaeus) Vahl, Enum. Pl. 2: 287.1806.

Scirpus dichotomus Linnaeus, Sp. Pl. 50. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01271*, dated 18. 03. 2012.

General Distribution: Tropical to temperate Zone across the world.

Fimbristylis tetragona R. Brown, Prodr. 226. 1810.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01265*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Nepal, Sri Lanka, E. Asia to tropical Australia.

Eleocharis acutangula (Roxburgh) Schultes, Mant. 2: 91.1824.

Scirpus acutangulus Roxburgh, Fl. Ind. 1: 216. 1820.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01252*, dated 18. 03. 2012.

General Distribution: India; Cosmopolitan.

Eleocharis retroflexa (Poiret) Urban ssp. chaetaria (Roemer & Schultes) Koyama, Bull. Nat. Sci. Mus.Tokyo 17: 68. 1974. *Eleocharis chaeraria* Roemer & Schultes, Syst. 2: 154. 1871.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01275*, dated 18. 03. 2012.

General Distribution: Tropical and temperate regions of the world.

Eleocharis congesta D. Don, Prodr, Fl. Nepal 41. 1825.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01296*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka, Malaysia.

Eleocharis atropurpurea (Retzius) J. Presl & C. Presl, Reliq. Haenk. 1: 196. 1828.

Scirpus atropurpureus Retzius, Observ. Bot. 5: 14. 1788.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01301*, dated 18. 03. 2012.

General Distribution: India; Cosmopolitan.

Fuirena ciliaris (Linnaeus) Roxburgh, Fl. Ind.1: 184. 1820.

Scirpus ciliaris Linnaeus, Mant. Ail. 182. 1771.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01313*, dated 18. 03. 2012.

General Distribution: Old World tropics and subtropics: India.

Actinoscirpus grossus (Linnaeus f.) Goetghebeur & D.A. Simpson, Kew Bull. 46: 171. 1991.

Scirpus grossus Linnaeus f., Suppl. Pl. 104. 1782;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01268*, dated 18. 03. 2012.

General Distribution: Tropical SE Asia: India, Bangladesh.

Schoenoplectiella articulata (Linnaeus) Lye, Lidia, 6: 21.2003.

Scirpus articulatus Linnaeus, Sp. Pl. 47. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01321*, dated 18. 03. 2012.

General Distribution: India, Indonesia, China, Srilanka, Thailand, Vietnam.

Schoenoplectiella juncoides (Roxburgh) Lye, Lidia, 6: 25. 2003. *Scirpus juncoides*

Roxburgh, Fl. Ind. 1: 218. 1820. *Schoenoplectus juncoides* (Roxburgh) Palla, Bot. Jahrb.

Syst. 10: 299. 1888.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01323*, dated 18. 03. 2012.

General Distribution: Madagascar, India to China.

Scirpus michelianus Linnaeus, Sp. Pl. 1: 52. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01269*, dated 18. 03. 2012.

General Distribution: India, Pakistan, China, Algeria, Europe, Vietnam.

Eriocaulaceae

Eriocaulon cinereum R. Brown, Prodr. 254. 1810.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01264*, dated 18. 03. 2012.

General Distribution: India and Tropical part of World.

Eriocaulon setaceum Linnaeus, Sp. Pl. 87. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01253*, dated 18. 03. 2012.

General Distribution: From Srilanka through India to Myanmar and Vietnam

Hydrocharitaceae

Blyxa octandra (Roxburgh) Planchon ex Thwaites, Enum. 332. 1864.

Vallisneria octandra Roxburgh, Pl. Corom. 2: 34. t. 165. 1802.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01276*, dated 18. 03. 2012.

General Distribution: Tropical part of Asia & Australia.

Hydrilla verticillata (Linnaeus f.) Royle, Ill. Bot. Himal. Mts. 1: t. 376. 1839.

Serpicula verticillata Linnaeus f., suppl. 416. 1781.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01347*, dated 18. 03. 2012.

General Distribution: S. & E. Europe, Africa, S. & E. Asia and Australia.

Nechamandra alternifolia (Roxburgh *ex* Wight) Thwaites, Enum. Pl. Zeyl. 332. 1864.

Vallisneria alternifolia Roxburgh *ex* Wight, Bot. Misc. 2: 344. 1831.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 1255*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka and Tropical Asia.

Ottelia alismoides (Linnaeus) Persoon, Syn. Pl. 1: 400. 1805.

Stratiotes alismoides Linnaeus, Sp. Pl. 1: 535. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01316*, dated 18. 03. 2012.

General Distribution: N & E. Africa, Tropical Asia and Australia.

Najas graminea Delile, Descr. Egypt. Hist. Nat. 2: 282, t. 50, f. 3. 1813.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01317*, dated 18. 03. 2012.

General Distribution: India, N. Africa to Japan, New Caledonia and Australia.

Najas indica (Willdenow) Chamisso in Linnaea 4: 501. 1829.

Cauline indica Willdenow In Mem. Ac. R. Sc. Berl. 89, f. 3. 1801.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01251*, dated 18. 03. 2012.

General Distribution: India, China, Japan, Taiwan.

Vallisneria spiralis Linnaeus, Sp. Pl. 2: 1025. 1753.

Physkium natants Loureiro, Fl. Cochinch. 663.1790.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01325*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka, Nepal, China, Japan, Malaysia and Australia.

Poaceae

Axonopus compressus (Swartz) P. Beauvois, Ess. Agrost. 12:154. 167. 1812.

Milium compressus Swartz, Prodr. Veg. Ind. Occ. 24. 1788.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01260*, dated 18. 03. 2012.

General Distribution: India (Arunachal Pradesh, assam, North India, Andaman & Nicobar Islands.), America, Brazil, Mexico, Myanmar.

Arundo donax Linnaeus, Sp. Pl. 81: 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01254*, dated 18. 03. 2012.

General Distribution: India, Myanmar, and Nepal.

Bracharia distachya (Linnaeus) Stapf in Prain, Fl. Trop. Afr. 9: 565. 919.

Panicum distachyum Linnaeus, Mant. 1: 138. 1767.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01341*, dated 18. 03. 2012.

General Distribution: Plain of India, Myanmar, Malaysia, China and Australia.

Brachiaria reptans (Linnaeus) Gardner & C.E. Hubbard in Hook., l.c. Pl. sub. t. 3: 363. 1938.

Panicum reptans Linnaeus, Syst. Nat. ed. 10: 870. 1759.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01291*, dated 18. 03. 2012.

General Distribution: Pantropic.

Capillipedum assimile (Steudel) A. Camus in Lecomte, Fl. Gen. De l' Indo-Chine 7: 314. 1922. *Andropogon assimile* Steudel in Zollinger, Syst. Verz. 58. 1854.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01259*, dated 18. 03. 2012.

General Distribution: India, Burma, Thailand, China, Japan.

Chloris barbata Swartz, Fl. Ind. Occid. 1: 200. 1797.

Chloris inflata Link, Enum. Pl. 1: 105. 1821.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01294*, dated 18. 03. 2012.

General Distribution: Pantropical.

Coix lachryma-jobi Linnaeus, Sp. Pl. 972. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 1274*, dated 18. 03. 2012.

General Distribution: India; Tropical Asia, Africa and America.

Chrysopogon aciculatus (Retzius) Trinius, Fund. Agrost. 188. 1820.

Andropogon aciculatus Retzius, Observ. Bot. 5: 22. 1789.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01343*, dated 18. 03. 2012.

General Distribution: India, Bhutan, Bangladesh, Nepal, Sri Lanka, Thailand, Vietnam.

Cynodon dactylon (Linnaeus) Persoon, Syn. Pl. 1: 85. 1805.

Panicum dactylon Linnaeus, Sp. Pl. 58. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01295*, dated 18. 03. 2012.

General Distribution: India, S. E. Asia.

Digitaria bicornis (Lamark) Roemer & Schultes, Syst. 2: 470. 1817.

Paspalum bicornis Lamark, Encycl. 1: 176. 1791.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01279*, dated 18. 03. 2012.

General Distribution: India, Tropical and Sub tropical Asia and Africa.

Digitaria ciliaris (Retzius) Koeler, Descr. Gram. 27. 1802.

Panicum ciliare Retzius, Obs. Bot 4: 16. 1786.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01284*, dated 18. 03. 2012.

General Distribution: Pantropical.

Echinochloa colona (Linnaeus) Link, Enum. Hort. Berol. 2: 209. 1833.

Panicum colonum Linnaeus, Syst. 870. 1759.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01272*, dated 18. 03. 2012.

General Distribution: India, Tropical Asia and Australia.

Echinochloa crus-galli (Linnaeus) P. Beauverd, Ess. Agrost. 53: 161. 1812.

Panicum crusgalli Linnaeus, Sp. Pl. 56. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01310*, dated 18. 03. 2012.

General Distribution: India, Myanmar, S. E. Asia, Sri Lanka and Africa.

Eleusine indica (Linnaeus) Gaertner, Fruct. 1: 8. 1788.

Cynosurus indicus Linnaeus, Sp. Pl. 72. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01293*, dated 18. 03. 2012.

General Distribution: India, Tropical and Subtropical part of world.

Eragrostis atrovirens (Desfontaines) Trinius ex Steudel, Nom. Bot. ed. 2, 1: 562. 1840.

Poa atrovirens Desfontaines, Fl. Atlant. 1: 73, t. 14. 1798.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01299*, dated 18. 03. 2012.

General Distribution: India (Punjab & Kashmir); North Africa to Zambia and Angola; Mauritania to the Philippines.

Eragrostis gangetica (Roxburgh) Steudel, Syn. Pl. Glum. 1: 266. 1854.

Poa gangetica Roxburgh, Fl. Ind. 1: 340. 1820.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01297*, dated 18. 03. 2012.

General Distribution: India, Burma, Sri Lanka, Tropical Asia and Africa.

Eragrostis tenella (Linnaeus) Beauverd *ex* Roemer *et* Schultes, Syst. Veg. 2: 576. 1817.

Poa tenella Linnaeus, Sp. Pl. 69. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01331*, dated 18. 03. 2012.

General Distribution: India, Tropical parts of world.

Eragrostis unioloides (Retzius) Nees *ex* Steudel, Syn. Pl. Glum. 1: 264. 1854.

Poa unioloides Retzius, Obs. Bot. 5: 19. 1789.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01307*, dated 18. 03. 2012.

General Distribution: India, Myanmar, Sri Lanka, and S. E. Asia.

Hygroryza aristata (Retzius) Nees *ex* Wight & Arn., Edinb. New Phil. Journal 15: 380.

1838. *Pharus aristatus* Retzius, Observ. Bot. 5: 23. 1789.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01278*, dated 18. 03. 2012.

General Distribution: India, Myanmar, S. E. Asia.

Imperata cylindrica (Linnaeus) Raeuschel, Nom. Bot. 3:10. 1797.

Lagurus cylindricus Linnaeus, Syst. Nat. ed. 10, 2: 878. 1759.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01315*, dated 18. 03. 2012.

General Distribution: India, Asia, Australia, S. E. Africa.

Isachne albens Trinius, Sp. Gram. Ic. t. 25. 1828.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01272*, dated 18. 03. 2012.

General Distribution: South East Asia and Himalayas: India, Nepal, Bhutan, Bangladesh, Myanmar.

Oplismenus burmannii (Retzius) P. Beauverd, Ess. Agrost. 54: 168 – 169. 1812.

Panicum burmannii Retzius, Obs. Bot. 3: 10. 1783.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01312*, dated 18. 03. 2012.

General Distribution: India (Plains), Bangladesh, China, Japan and Sri Lanka.

Oplismenus compositus (Linnaeus) P. Beauvois, Ess. Agrost. 54: 168. 1812.

Panicum compositum Linnaeus, Sp. Pl. 57. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01287*, dated 18. 03. 2012.

General Distribution: Tropical.

Ottochloa nodosa (Kunth) Dandy in J. Bot. 69: 55. 1931.

Panicum nodosum Kunth, Enum. Pl. 1: 97. 1833.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01324*, dated 18. 03. 2012.

General Distribution: India (North –East and South India), Malaysia, Myanmar.

Panicum repens Linnaeus, Sp. Pl. ed. 2: 87. 1762.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01312*, dated 18. 03. 2012.

General Distribution: India, S. Europe, Asia, Africa, and America.

Pennisetum polystachion (Linnaeus) Schultes, Syst. Veg. Mant. 2: 146. 1824.

Panicum polystachyon Linnaeus, Syst. Nat. ed. 10, 2: 870. 1759.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01304*, dated 18. 03. 2012.

General Distribution: Tropical Africa to India.

Paspalum conjugatum P.J. Bergius, Acta Helv. Phys.-Math. 7: 129. 1772.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01280*, dated 18. 03. 2012.

General Distribution: India; Tropics and subtropics throughout the world.

Paspalum scrobiculatum Linnaeus, Mant. 1: 29. 1767.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01342*, dated 18. 03. 2012.

General Distribution: India (Plains), Warm countries of world.

Paspalidium punctatum (Burman) A. Camus in Lecomte, Fl. Gen. De 1 Indo – China 7: 419. 1922. *Panicum punctatum* Burman, Obs. Bot. 4: 15. 1786.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01334*, dated 18. 03. 2012.

General Distribution: India (Marshy lands), Tropical Asia and North Africa.

Phragmites karka (Retzius) Trinius ex Steudel, Nomencl. Bot. ed. 2(1): 144. 1840.

Arundo karka Retzius, Observ. Bot. 4: 21. 1786.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01308*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, China, Pakistan, Northern Australia, tropical Assia and tropical Affrica.

Saccharum spontaneum Linnaeus, Mant. Alt. 183. 1771.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01282* , dated 18. 03. 2012.

General Distribution: India (Warmer part), E. Australia, S. Europe, Sri Lanka.

Sacciolepis indica (Linnaeus) Chase in proc. Biol. Soc. Wash. 21: 8. 1908.

Panicum indicum Linnaeus, Mant. 2: 184. 1771.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01326*, dated 18. 03. 2012.

General Distribution: India, Tropical and sub Tropical Asia and Australia.

Sacciolepis interrupta (Willdenow) Stapf, Prain, Fl. Trop. Afr. 9: 757. 1920.

Panicum interrupta Willdenow, Sp. Pl. 1: 341.1798.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01338*, dated 18. 03. 2012.

General Distribution: India, Assam, Sri Lanka, Burma, Malaya and China.

Setaria glauca (Linnaeus) P. Beauvois, Ess. Agrost. 51: 178.1812.

Panicum glaucum Linnaeus, Sp. Pl. 56.1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01319*, dated 18. 03. 2012.

General Distribution: India, throughout the warm and temperate countries.

Setaria palmifolia (J. Koenig) Stapf, J. Lin. Soc. Bot. 42: 186. 1914.

Panicum palmaefolium J. Koenig, Naturf. 22: 208. 1788.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01368*, dated 18. 03. 2012.

General Distribution: Tropics of Old World.

Sporobolus diander (Retzius) P. Beauvois, *ess. Agrost.* 26: 147, 178. 1812.

Agrostis diandra Retzius, *Obs. Bot.* 5: 19. 1789.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01362*, dated 18. 03. 2012.

General Distribution: India (Assam, Manipur, Nagaland, Bihar, Orissa, West Bengal), Australia, Sri Lanka.

Chrysopogon zizanioides (Linnaeus) Roberty, *Bull. Inst. Franç. Afrique Noire*, A22: 106. 1960.

Phalaris zizanioides Linnaeus, *Mant* 2: 183. 1771.

Vetiveria zizanioides (Linnaeus) Nash in Small, *Fl. South-East U.S.* 67. 1903.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01358*, dated 18. 03. 2012.

General Distribution: India (Plains & Lower hills), Java, Myanmar, Sri Lanka, Tropical Africa.

Thysanolaena latifolia (Roxburgh *ex* Hornemann) Honda in *J. Fac. Sc. Tokyo Sect. III. Bot.* 3: 312. 1930.

Melica latifolia Roxburgh *ex* Hornemann, *Hort. Bot. Hafn. Suppl.*: 117 1819.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01365*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Bhutan, Cambodia, Indonesia, Laos, Malaysia, Sri Lanka.

Pontederiaceae

Eichhornia crassipes (Martius) Solms in A. de Candolle & C. de Candolle, *Monogr. Phan.* 4: 527. 1883. *Pontederia crassipes* Martius *Nov. Gen. Pl.* 9.t. 4. 1823.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01244*, dated 18. 03. 2012.

General Distribution: India, Native to Brazil, now Pantropic.

Monochoria hastata (Linnaeus) Solms in A. de Candolle & C. de Candolle, *Monogr. Phan.* 4: 523. 1883. *Pontederia hastata* Linnaeus, *Sp. Pl.* 1: 288. 1753;

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01238*, dated 18. 03. 2012.

General Distribution: Throughout India; China, Malaysia, Sri Lanka, S. E. Asia.

Monochoria vaginalis (Burman *f.*) C. Presl, *Fl. Ind.* 80. 1768.

Pontederia vaginalis Burman *f.*, *Fl. Indica* 80. 1768.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01239*, dated 18. 03. 2012.

General Distribution: India, Bangladesh, Sri Lanka, Malay Island, China, Japan and Tropical Africa.

Potamogetonaceae

Potamogeton crispus Linnaeus, *Sp. Pl.* 1: 126. 1753.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01303*, dated 18. 03. 2012.

General Distribution: Tropical to sub-tropical Asia, Africa, Europe and Australia.

Potamogeton distinctus A. Bennett, *J. Bot.* 42: 72. 1904.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01281*, dated 18. 03. 2012.

General Distribution: India, Bhutan, Japan including Ryukyus, Korea, Russia; Pacific islands.

Potamogeton nodosus Poirlet, *Encycl. Meth. Bot. Suppl.* 4: 535. 1816.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01333*, dated 18. 03. 2012.

General Distribution: India, Sri Lanka, Malaya, Temperate and Tropical region of World.

Typhaceae

Typha angustifolia Roxburgh, Fl. Ind., ed. 1832, 3: 566. 1832.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01367*, dated 18. 03. 2012.

General Distribution: India; Africa and S. Europe.

Zingiberaceae

Globba racemosa J.E. Smith, Exot. Bot. 2: 15. t. 117. 1804.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01357*, dated 18. 03. 2012.

General Distribution: Bhutan, India, Myanmar, Nepal, Thailand.

Hedychium spicatum Buchanan-Hamilton *ex* J.E. Smith in Rees Cyclop. 17: 3. 1811.

Exsicattus: Gossaihat Beel, *Anurag, Rajib & A.P.Das 01246*, dated 18. 03. 2012.

General Distribution: India, Nepal, Bhutan, China, Thailand.