

# Phytodiversity (pteridophytes and angiosperms) of Parvati Arga Bird Sanctuary, Gonda District, Uttar Pradesh, India

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Manuscript received: 30 September 2015

Accepted for publication: 12 October 2015

## ABSTRACT

Khanna K. K. 2015. Phytodiversity (pteridophytes and angiosperms) of Parvati Arga Bird Sanctuary, Gonda District, Uttar Pradesh, India. *Geophytology* 45(2): 239-244.

The paper deals with an account of pteridophytic and angiospermic plants occurring in Parvati Arga Bird Sanctuary in Gonda district, Uttar Pradesh. The study has indicated that a total of 215 species belonging to 155 genera and 60 families are found in the sanctuary. Of these, 3 species under 3 genera and 3 families belong to pteridophytes whereas 212 species under 152 genera and 57 families belong to angiosperms. An analysis has further indicated that Poaceae is the most dominant family in the area. Moreover, 9 species are rare in the sanctuary.

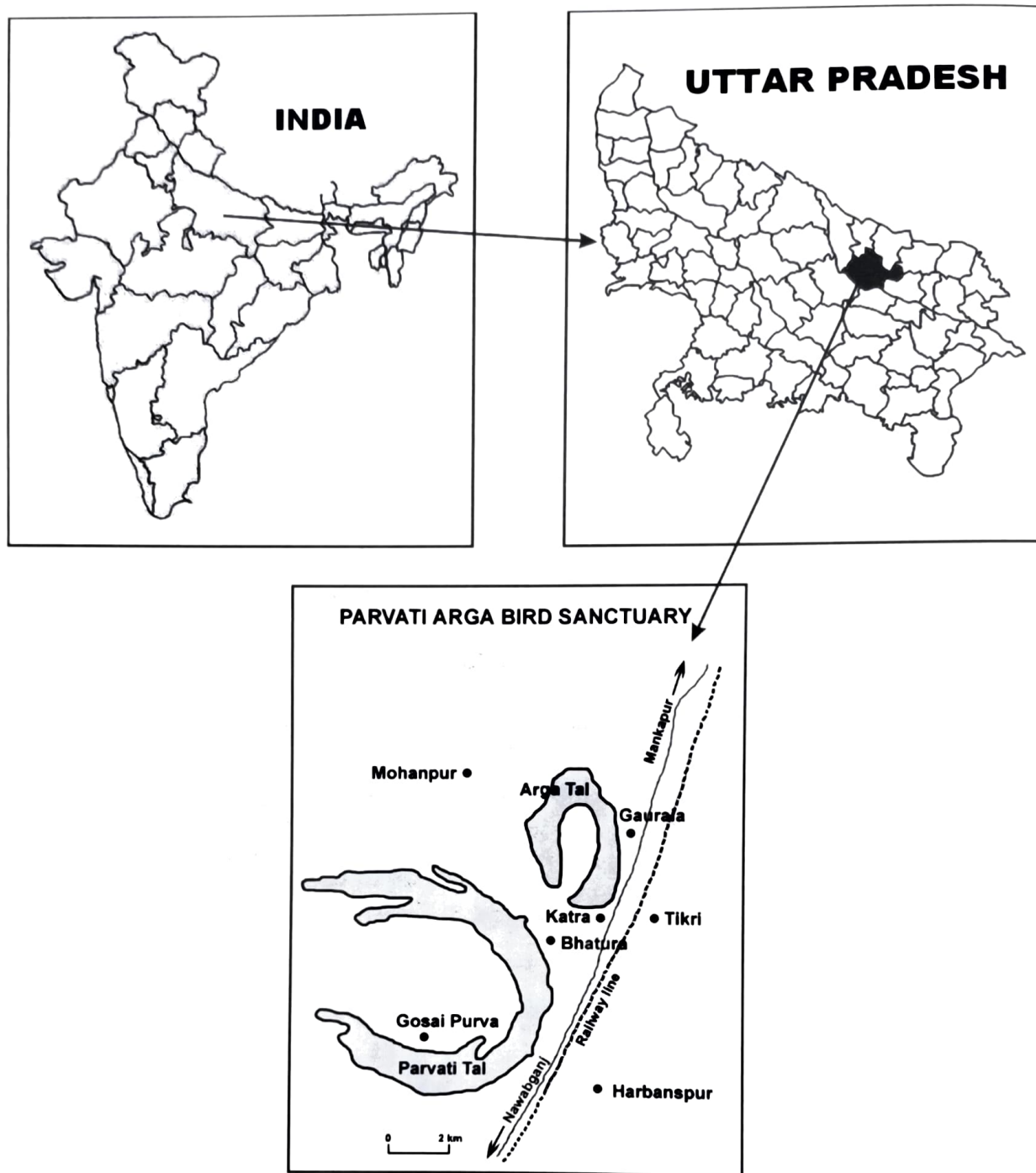
**Key-words:** Phytodiversity, pteridophytes, angiosperms, Parvati Arga Bird Sanctuary, Parvati Arga Wetland, Gonda District, Uttar Pradesh.

## INTRODUCTION

Parvati Arga Bird Sanctuary, covering an area of 1084.47 hectares, is situated in Gonda district of Uttar Pradesh (Text-figure 1). In fact, there are two lakes in the shape of cow's foot, viz. Parvati and Arga, and so named as these are situated near an old Shiva-Parvati temple. Since the area of the two lakes is home of several indigenous birds and attracts a number of exotic and migratory birds during winter season, it has been declared as a bird sanctuary on 23<sup>rd</sup> May, 1990. Earlier, the sanctuary was under the Fisheries Department but was later transferred to Forest Department for proper management. The sanctuary harbours a number of birds including common sarus, northern pintail (seenkhar), bar-headed goose (savan), little grebe (dubdubi),

Eurasian wigeon (piyasan batak), mallard (neelsar), red-crested pochard (lalsar), tufted pochard (dabaru), tufted duck (ablak batak), comb duck (nakata), ruddy shelduck (surkhab), cotton pygmy-goose (girri batak), little cormorant (chota pankau), great cormorant (bara pankau), common moorhen (samanya jalmurgi), cattle egret (gay bagla), intermediate egret (patokha bagla), asian openbill (ghonghil) and purple moorhen (jamuni jalmurgi). Besides, tortoises and snakes also occur at places.

The climate of the area is typically tropical with hot waves during the summer season followed by rainy and winter seasons. The temperature during summer goes up to 45°C while during winter it lowers up to 5°C. Although the bird sanctuary experiences extreme hot weather it remains full of water throughout the year.



**Text-figure 1.** Map showing location of Parvati Arga Bird Sanctuary in Gonda district, Uttar Pradesh.

A review of literature indicates that the sanctuary (wetland) has not been botanically surveyed. Since there is much emphasis laid down by Ramsar Convention (1971) to study such areas, it has been considered worthwhile to study it in detail and the results are presented in this paper.

### **MATERIALS AND METHODS**

Entire bird sanctuary was surveyed during different

seasons from 2004 to 2008. The specimens were collected, poisoned, identified and housed in the herbarium of Botanical Survey of India, Allahabad (BSA). Under enumeration, pteridophytic families are arranged alphabetically whereas those of angiosperms are arranged according to Bentham and Hooker's system of classification (1862-1883). Taxa have been arranged alphabetically under their respective families. Habitat of each taxon is also provided.

## ENUMERATION

| PTERIDOPHYTA    |  |   |
|-----------------|--|---|
| Family          | Plant Name   | Habitat   |
| Azollaceae      | <i>Azolla pinnata</i> R.Br.  | Along the edges of lake and in marshy places.   |
| Marsileaceae    | <i>Marsilea minuta</i> L.  | In marshy places.   |
| Salviniaceae    | <i>Salvinia natans</i> (L.) All.   | Floating on the surface of lake.  |
| ANGIOSPERMAE    |  |   |
| Ranunculaceae   | <i>Ranunculus sceleratus</i> L.  | In marshy places.   |
| Nymphaeaceae    | <i>Nymphaea nouchali</i> Burm.f.<br><i>Nymphaea pubescens</i> Willd.   | Common in lake.<br>Common in lake.  |
| Papaveraceae    | <i>Argemone mexicana</i> L.  | In wastelands along the lake.   |
| Brassicaceae    | <i>Brassica rapa</i> L.<br><i>Rorippa indica</i> (L.) Hiern  | As an escape from cultivation near the lake.<br>In moist places.  |
| Capparaceae     | <i>Cleome gynandra</i> L.<br><i>Cleome viscosa</i> L.  | In wastelands near the lake.<br>In wastelands near the lake.  |
| Caryophyllaceae | <i>Polycarpon prostratum</i> (Forssk.) Asch. & Schweinf.<br><i>Spergula arvensis</i> L.  | In moist places.<br>In moist places as a weed.  |
| Portulacaceae   | <i>Portulaca oleracea</i> L.   | In moist places.  |
| Elatinaceae     | <i>Bergia ammannioides</i> Roxb. ex Roth   | In moist places.  |
| Malvaceae       | <i>Abutilon indicum</i> (L.) Sweet<br><i>Malvastrum coromandelianum</i> (L.) Garcke<br><i>Sida cordata</i> (Burm.f.) Borss.<br><i>Sida cordifolia</i> L.<br><i>Sida rhombifolia</i> L. emend. Mast.                                | In wastelands adjoining the lake.<br>In shady habitat and wastelands near the lake.<br>In wastelands near the lake.<br>In wastelands near the lake.<br>In wastelands near the lake. |
| Sterculiaceae   | <i>Melochia corchorifolia</i> L.   | In wastelands near the lake.  |
| Tiliaceae       | <i>Corchorus aestuans</i> L.<br><i>Corchorus capsularis</i> L.<br><i>Corchorus olitorius</i> L.<br><i>Triumfetta pentandra</i> A.Rich.<br><i>Triumfetta rhomboidea</i> Jacq.   | In moist places along the lake.<br>In moist places along the lake.<br>In moist places along the lake.<br>In moist places along the lake.<br>In wastelands near the lake.            |
| Oxalidaceae     | <i>Biophytum sensitivum</i> (L.) DC.<br><i>Oxalis corniculata</i> L.   | In moist places.<br>In moist places as a weed.  |
| Rutaceae        | <i>Glycosmis pentaphylla</i> (Retz.) DC.   | In wastelands near the lake.  |
| Rhamnaceae      | <i>Ziziphus mauritiana</i> Lam.  | In wastelands near the lake.  |
| Fabaceae        | <i>Aeschynomene aspera</i> L.<br><i>Aeschynomene indica</i> L.<br><i>Desmodium gangeticum</i> (L.) DC.<br><i>Medicago polymorpha</i> L. emend. Shin.<br><i>Melilotus alba</i> Medik. ex Desr.<br><i>Melilotus indica</i> (L.) All. | In marshy places.<br>In marshy places.<br>In wastelands along the lake.<br>In moist places.<br>In moist places.<br>As a weed in moist places.                                       |
| Caesalpiniaceae | <i>Caesalpinia bonduc</i> (L.) Roxb.<br><i>Senna occidentalis</i> (L.) Link<br><i>Senna tora</i> (L.) Roxb.  | In wastelands near the lake.<br>In wastelands along the lake.<br>In wastelands along the lake.  |
| Mimosaceae      | <i>Acacia nilotica</i> (L.) Delile subsp. <i>indica</i> (Benth.) Brenan<br><i>Albizia lebbek</i> (L.) Benth.<br><i>Neptunia oleracea</i> Lour.   | Growing near the lake.<br>Growing near the lake.<br>Floating on lake.   |
| Rosaceae        | <i>Potentilla supina</i> L.  | In marshy places.   |
| Lythraceae      | <i>Ammannia baccifera</i> L.<br><i>Ammannia multiflora</i> Roxb.<br><i>Rotala densiflora</i> (Roth ex Roem. & Schult.) Koehne<br><i>Rotala rotundifolia</i> (Roxb.) Koehne   | In marshy places.<br>In marshy places.<br>In marshy places.<br>In marshy places.  |
| Onagraceae      | <i>Ludwigia octovalvis</i> (Jacq.) Raven<br><i>Ludwigia perennis</i> L.<br><i>Ludwigia prostrata</i> Roxb.   | In marshy places.<br>In marshy places.<br>In marshy places.   |
| Cucurbitaceae   | <i>Coccinia grandis</i> (L.) Voigt   | Climber near the lake.  |
| Apiaceae        | <i>Centella asiatica</i> (L.) Urban<br><i>Oenanthe javanica</i> (Blume) DC.  | In moist places.<br>In lake.  |
| Rubiaceae       | <i>Hedyotis corymbosa</i> (L.) Lam.  | In moist places.  |

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| <b>Asteraceae</b>       | <i>Acmella paniculata</i> (Wall. ex DC.) R.K.Jansen   | In moist and marshy places.                  |
|                         | <i>Ageratum conyzoides</i> L.                         | In wastelands along the lake.                |
|                         | <i>Conyza bonariensis</i> (L.) Cronq.                 | In wastelands along the lake.                |
|                         | <i>Cyanthillium cinereum</i> (L.) H.Rob.              | In wastelands along the lake.                |
|                         | <i>Eclipta prostrata</i> (L.) L.                      | In moist and marshy places.                  |
|                         | <i>Enhydra fluctuans</i> Lour.                        | In shallow water of lake.                    |
|                         | <i>Gnaphalium pensylvanicum</i> Willd.                | In moist places.                             |
|                         | <i>Gnaphalium polycaulon</i> Pers.                    | In moist places.                             |
|                         | <i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal | In wastelands along the lake.                |
|                         | <i>Parthenium hysterophorus</i> L.                    | In wastelands near the lake.                 |
|                         | <i>Sonchus asper</i> (L.) Hill.                       | In wastelands along the lake.                |
|                         | <i>Tridax procumbens</i> L.                           | In wastelands along the lake.                |
|                         | <i>Xanthium indicum</i> Koenig                        | In wastelands along the lake.                |
| <b>Primulaceae</b>      | <i>Anagallis arvensis</i> L.                          | In moist places.                             |
| <b>Asclepiadaceae</b>   | <i>Calotropis procera</i> (Aiton) R.Br.               | In wastelands along the lake.                |
| <b>Menyanthaceae</b>    | <i>Nymphoides hydrophylla</i> (Lour.) Kuntze          | Floating on lake.                            |
|                         | <i>Nymphoides indica</i> (L.) Kuntze                  | Floating on lake.                            |
| <b>Convolvulaceae</b>   | <i>Ipomoea aquatica</i> Forssk.                       | Floating on lake.                            |
|                         | <i>Ipomoea carnea</i> Jacq.                           | In marshy places.                            |
| <b>Solanaceae</b>       | <i>Datura innoxia</i> Mill.                           | In wastelands along the lake.                |
|                         | <i>Physalis minima</i> L.                             | In moist places.                             |
|                         | <i>Solanum nigrum</i> L.                              | In moist places.                             |
|                         | <i>Solanum virginianum</i> L.                         | In moist places.                             |
| <b>Scrophulariaceae</b> | <i>Bacopa monnieri</i> (L.) Wettst.                   | On the margins of lake.                      |
|                         | <i>Limnophila chinensis</i> (Osbeck) Merr.            | On the margins of lake.                      |
|                         | <i>Limnophila indica</i> (L.) Druce                   | In marshy places.                            |
|                         | <i>Lindernia crustacea</i> (L.) F.v.Mull.             | In moist places.                             |
|                         | <i>Mazus pumilus</i> (Burm.f.) Steenis                | In moist places.                             |
|                         | <i>Scoparia dulcis</i> L.                             | In wastelands near the lake.                 |
|                         | <i>Verbascum chinense</i> (L.) Santapau               | In wastelands near the lake.                 |
|                         | <i>Veronica anagallis-aquatica</i> L.                 | In marshy places.                            |
| <b>Lentibulariaceae</b> | <i>Utricularia aurea</i> Lour.                        | In shallow areas of the lake.                |
|                         | <i>Utricularia exoleta</i> R.Br.                      | In shallow areas of the lake.                |
|                         | <i>Utricularia stellaris</i> L.f.                     | In shallow areas of the lake.                |
| <b>Pedaliaceae</b>      | <i>Martynia annua</i> L.                              | In wastelands along the lake.                |
| <b>Acanthaceae</b>      | <i>Sesamum indicum</i> L.                             | As an escape from cultivation near the lake. |
|                         | <i>Dicliptera paniculata</i> (Forssk.) I.Darbysh      | In wastelands near the lake.                 |
|                         | <i>Hygrophila auriculata</i> (Schumacher) Heine       | In marshy places.                            |
|                         | <i>Hygrophila polysperma</i> (Roxb.) T.Anderson       | In marshy places.                            |
|                         | <i>Hygrophila salicifolia</i> (Vahl) Nees             | In marshy places.                            |
|                         | <i>Justicia adhatoda</i> L.                           | In wastelands near the lake.                 |
|                         | <i>Justicia diffusa</i> Willd.                        | In moist places.                             |
|                         | <i>Ruellia prostrata</i> Poir.                        | In moist places.                             |
| <b>Verbenaceae</b>      | <i>Rungia repens</i> (L.) Nees                        | In wastelands near the lake.                 |
| <b>Lamiaceae</b>        | <i>Phyla nodiflora</i> (L.) E.Greene                  | In marshy places.                            |
|                         | <i>Anisomeles indica</i> (L.) Kuntze                  | In wastelands along the lake.                |
|                         | <i>Leucas aspera</i> (Willd.) Link                    | In moist places.                             |
|                         | <i>Micromeria capitellata</i> Benth.                  | In moist places.                             |
|                         | <i>Ocimum americanum</i> L.                           | In wastelands near the lake.                 |
|                         | <i>Ocimum basilicum</i> L.                            | In wastelands near the lake.                 |
| <b>Amaranthaceae</b>    | <i>Salvia plebeia</i> R.Br.                           | In moist places.                             |
|                         | <i>Achyranthes aspera</i> L.                          | In wastelands along the lake.                |
|                         | <i>Alternanthera sessilis</i> (L.) R.Br. ex DC.       | In moist places.                             |
|                         | <i>Amaranthus spinosus</i> L.                         | In wastelands along the lake.                |
|                         | <i>Amaranthus tricolor</i> L.                         | In wastelands near the lake.                 |
|                         | <i>Amaranthus viridis</i> L.                          | In wastelands near the lake.                 |
|                         | <i>Celosia argentea</i> L.                            | In wastelands near the lake.                 |
|                         | <i>Digera muricata</i> (L.) Mart.                     | In wastelands near the lake.                 |
| <b>Chenopodiaceae</b>   | <i>Chenopodium murale</i> L.                          | In moist places.                             |
| <b>Basellaceae</b>      | <i>Basella alba</i> L.                                | Climber near lake.                           |
| <b>Polygonaceae</b>     | <i>Persicaria barbata</i> (L.) Hara                   | In marshy places.                            |
|                         | <i>Persicaria decipiens</i> (R.Br.) K.L.Wilson        | In marshy places.                            |
|                         | <i>Persicaria glabra</i> (Willd.) Gomes               | In marshy places.                            |
|                         | <i>Persicaria laphathifolia</i> (L.) Delarbre         | In marshy places.                            |
|                         | <i>Polygonum plebeium</i> R.Br.                       | In moist places.                             |
|                         | <i>Rumex dentatus</i> L.                              | In marshy places.                            |

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|--------------------------------|---|--|
| Euphorbiaceae                  | <i>Acalypha indica</i> L.   | In wastelands near the lake.                 |
|                                | <i>Chrozophora prostrata</i> Dalzell  | In wastelands near the lake.                 |
|                                | <i>Croton bonplandianus</i> Baill.  | In wastelands near the lake.                 |
|                                | <i>Euphorbia hirta</i> L.   | In moist places.                             |
|                                | <i>Euphorbia thymifolia</i> L.  | In moist places.                             |
|                                | <i>Phyllanthus fraternus</i> G.L.Webster                                      | In moist and shady places.                   |
| Cannabaceae                    | <i>Ricinus communis</i> L.  | In wastelands along the lake.                |
|                                | <i>Cannabis sativa</i> L.   | In wastelands along the lake.                |
| Ceratophyllaceae               | <i>Ceratophyllum demersum</i> L.  | Common in lake.                              |
| Hydrocharitaceae               | <i>Hydrilla verticillata</i> (L.f.) Royle                                     | Common in lake.                              |
|                                | <i>Lagarosiphon alternifolia</i> (Roxb.) Druce                                | In deep water of lake.                       |
|                                | <i>Ottelia alismoides</i> (L.) Pers.  | In deep water of lake.                       |
|                                | <i>Vallisneria spiralis</i> L.  | Common in lake.                              |
| Orchidaceae                    | <i>Zeuxine strateumatica</i> (L.) Schlechter                                  | In marshy places.                            |
| Pontederiaceae                 | <i>Eicchornia crassipes</i> (Mart.) Solms.                                    | Abundant on the margins of lake.             |
|                                | <i>Monochoria hastata</i> (L.) Solms.   | In marshy places.                            |
|                                | <i>Monochoria vaginalis</i> (Burm.f.) K.Presl                                 | In shallow water.                            |
| Commelinaceae                  | <i>Commelina benghalensis</i> L.  | In moist places.                             |
|                                | <i>Commelina caroliniana</i> Walter   | In moist places.                             |
|                                | <i>Commelina suffruticosa</i> Blume   | In moist shady places.                       |
|                                | <i>Cyanotis axillaris</i> (L.) D.Don ex Sweet                                 | In marshy places.                            |
|                                | <i>Murdannia nudiflora</i> (L.) Brenan  | In moist places.                             |
|                                | <i>Typha angustifolia</i> L.  | In marshy places and on the margins of lake. |
| Typhaceae                      | <i>Colocasia esculenta</i> (L.) Schott  | In moist places.                             |
| Araceae                        | <i>Lemna perpusilla</i> Torr.   | Floating on the surface of lake.             |
| Lemnaceae                      | <i>Spirodela polyrhiza</i> (L.) Schleid.                                      | Floating on the surface of lake.             |
|                                | <i>Wolffia arrhiza</i> (L.) Horkel ex Wimm.                                   | Floating on the surface of lake.             |
|                                | <i>Limnophyton obtusifolium</i> (L.) Miq.                                     | In shallow water of lake.                    |
| Alismataceae                   | <i>Sagittaria guayanensis</i> Humb., Bonpl. & Kunth subsp.                    | On the margins of lake.                      |
|                                | <i>lappula</i> (D.Don) Bogin  |  |
|                                | <i>Sagittaria trifolia</i> L.   | On the margins of lake.                      |
|                                | <i>Butomopsis latifolia</i> (D.Don) Kunth                                     | In marshy places.                            |
| Limnocharitaceae               | <i>Najas graminea</i> Delile  | Common in lake.                              |
| Najadaceae                     | <i>Aponogeton natans</i> (L.) Engl. & K.Krause                                | In shallow water of lake.                    |
| Aponogetonaceae                | <i>Aponogeton undulatus</i> Roxb.   | In shallow water of lake.                    |
| Potamogetonaceae               | <i>Potamogeton crispus</i> L.   | Common in lake.                              |
|                                | <i>Potamogeton nodosus</i> Poir.  | Common in lake.                              |
| Zannichelliaceae               | <i>Zannichellia palustris</i> L.  | In shallow water of lake.                    |
|                                | <i>Anosporum cephalotes</i> (Vahl) Kurz                                       | In marshy places.                            |
| Cyperaceae                     | <i>Cyperus alulatus</i> Kern  | In marshy places.                            |
|                                | <i>Cyperus corymbosus</i> Rottb.  | In moist places.                             |
|                                | <i>Cyperus difformis</i> L.   | In marshy places.                            |
|                                | <i>Cyperus exaltatus</i> Retz.  | On the margins of lake.                      |
|                                | <i>Cyperus iria</i> L.  | In moist places.                             |
|                                | <i>Cyperus platystylis</i> R.Br.  | On the margins of lake.                      |
|                                | <i>Cyperus rotundus</i> L.  | In moist places.                             |
|                                | <i>Eleocharis acutangula</i> (Roxb.) Schult.                                  | In marshy places.                            |
|                                | <i>Eleocharis atropurpurea</i> (Retz.) J.Presl & K.Presl                      | In marshy places.                            |
|                                | <i>Eleocharis dulcis</i> (Burm.f.) Hensch.                                    | In marshy places.                            |
|                                | <i>Fimbristylis aestivalis</i> (Retz.) Vahl                                   | In moist places.                             |
|                                | <i>Fimbristylis bisumbellata</i> (Forssk.) Bubani                             | In moist and marshy places.                  |
|                                | <i>Fimbristylis dichotoma</i> (L.) Vahl                                       | In marshy places.                            |
|                                | <i>Fimbristylis ferruginea</i> (L.) Vahl                                      | In moist places.                             |
|                                | <i>Fimbristylis miliacea</i> (L.) Vahl  | In marshy places.                            |
|                                | <i>Juncellus alopecuroides</i> (Rottb.) C.B.Clarke                            | In marshy places.                            |
|                                | <i>Juncellus pygmaeus</i> (Rottb.) C.B.Clarke                                 | In marshy places.                            |
|                                | <i>Kyllinga brevifolia</i> Rottb.   | In moist places.                             |
|                                | <i>Kyllinga nemoralis</i> (J.R.Forster & G.Forster) Dandy ex Hutch. & Dalziel | In marshy places.                            |
|                                | <i>Kyllinga tenuifolia</i> Steud.   | In moist places.                             |
|                                | <i>Mariscus compactus</i> (Retz.) Boldingh                                    | In moist places.                             |
|                                | <i>Rikliella squarrosa</i> (L.) J.Raynal                                      | In moist places.                             |
|                                | <i>Schoenoplectus articulatus</i> (L.) Palla                                  | In marshy places.                            |
|                                | <i>Schoenoplectus juncooides</i> (Roxb.) Palla                                | In shallow water of lake.                    |
|                                | <i>Schoenoplectus lateriflorus</i> (J.F.Gmel.) Lye                            | In shallow water of lake.                    |
|                                | <i>Schoenoplectus mucronatus</i> (L.) Palla                                   | In shallow water of lake.                    |
| <i>Scirpus tuberosus</i> Desf. | In marshy places.   |  |

## Poaceae

|  |   |
|--|---|
| <i>Alloteropsis cimicina</i> (L.) Stapf                    | In moist places.                            |
| <i>Arundo donax</i> L.                                     | In lake beds.                               |
| <i>Brachiaria ramosa</i> (L.) Stapf                        | In wastelands along lake.                   |
| <i>Brachiaria reptans</i> (L.) Gard. & Hubb.               | In wastelands along lake.                   |
| <i>Coix lacryma-jobi</i> L.                                | In wastelands near lake.                    |
| <i>Cynodon dactylon</i> (L.) Pers.                         | In moist places near lake.                  |
| <i>Desmostachya bipinnata</i> (L.) Stapf                   | In moist places.                            |
| <i>Dichanthium annulatum</i> (Forssk.) Stapf               | In wastelands along lake.                   |
| <i>Digitaria ciliaris</i> (Retz.) Koeler                   | In wastelands along lake.                   |
| <i>Echinochloa crusgalli</i> (L.) P.Beauv.                 | In marshy places.                           |
| <i>Echinochloa stagnina</i> (Retz.) P.Beauv.               | Along the edges of lake.                    |
| <i>Eleusine indica</i> (L.) Gaertn.                        | In moist places.                            |
| <i>Eragrostis tenella</i> (L.) P.Beauv. ex Roem. & Schult. | In moist places.                            |
| <i>Hemarthria compressa</i> (L.f.) R.Br.                   | In moist places.                            |
| <i>Hygroryza aristata</i> (Retz.) Nees ex Wight & Arnott   | Floating on the surface of lake.            |
| <i>Imperata cylindrica</i> (L.) P.Beauv.                   | In wastelands along lake.                   |
| <i>Oplismenus burmannii</i> (Retz.) P.Beauv.               | In moist shady places.                      |
| <i>Oryza minuta</i> J.Presl ex K.Presl                     | In marshy places.                           |
| <i>Oryza rufipogon</i> Griff.                              | In marshy places and shallow water of lake. |
| <i>Panicum paludosum</i> Roxb.                             | In marshy places.                           |
| <i>Paspalidium flavidum</i> (Retz.) A.Camus                | In moist places.                            |
| <i>Paspalidium geminatum</i> (Forssk.) Stapf               | In marshy places.                           |
| <i>Paspalidium punctatum</i> (Burm.f.) A.Camus             | In marshy places.                           |
| <i>Paspalum vaginatum</i> Sw.                              | In marshy places and shallow water of lake. |
| <i>Pennisetum pedicellatum</i> Trin.                       | In moist places.                            |
| <i>Phragmites vallisneria</i> (Pluk. ex L.) Veldkamp       | In marshy places and shallow water of lake. |
| <i>Rottboellia cochinchinensis</i> (Lour.) Clayton         | In wastelands near lake.                    |
| <i>Saccharum spontaneum</i> L.                             | In wastelands along the lake.               |
| <i>Setaria intermedia</i> Roem. & Schult.                  | In moist places.                            |
| <i>Vetiveria zizanioides</i> (L.) Nash                     | In marshy places.                           |

## DISCUSSION

The present study indicates that a total of 215 species (pteridophytes and angiosperms) belonging to 155 genera and 60 families are found in Parvati Arga Bird Sanctuary. Of these, 3 species under 3 genera and 3 families belong to pteridophytes while 212 species under 152 genera and 57 families belong to angiosperms. Among the angiosperms 126 species under 95 genera and 42 families belong to dicot while 86 species under 57 genera and 15 families belong to monocot. The analysis further indicates that Poaceae (30 spp.) is the most dominant family. It is followed by Cyperaceae (28 spp.), Asteraceae (13 spp.), Scrophulariaceae and Acanthaceae (8 spp. each), Amaranthaceae and Euphorbiaceae (7 spp. each), Fabaceae, Lamiaceae and Polygonaceae (6 spp. each). Occurrence of such a high number of species in the sanctuary is an indication of high floristic richness of the

area. It is interesting to record that some plants viz., *Potentilla supina*, *Enhydra fluctuans*, *Persicaria decipiens*, *Zeuxine strateumatica*, *Sagittaria trifolia*, *Aponogeton undulatus*, *Cyperus platystylis*, *Juncellus pygmaeus* and *Eleocharis acutangula* are rare in the sanctuary. Thus, the present study not only fulfils our commitment to Ramsar Convention but also provides important information about the sanctuary.

## ACKNOWLEDGEMENTS

The author is thankful to the Director, Botanical Survey of India, Kolkata and Scientist-in-charge, Botanical Survey of India, Central Regional Centre, Allahabad for providing necessary facilities.

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