

## THE GRASSES OF BURDWAN DISTRICT, WEST BENGAL

DEB KUMAR BANERJEE

*Botanical Survey of India, Calcutta*

## ABSTRACT

The object of the present investigation is to provide an account of the grasses of Burdwan. 75 grasses, out of which 45 belong to sub-family *Panicoideae* and 30 to the sub-family *Pooideae*, are reported from Burdwan District (22°56' & 25°53' N and 86°48' & 88°25' E). The habit, habitat, ecological notes and economic uses have been given. Some grasses recorded from Burdwan District appear to be very recent additions to the grass flora of West Bengal.

## INTRODUCTION

The first account of the grasses of Bengal was given by Prain (1903). The grasses of 24 Parganas were studied by Majumder (1956) and very recently the account of the grasses and grass land type of West Bengal was given by Chaudhuri (1965). But complete exploration of grasses of many districts of West Bengal has, not so far been done. Some species of grasses from the adjoining areas have found their way to many regions of Bengal.

The sheets of the grasses of Burdwan (West Bengal) preserved in the Central National Herbarium, Calcutta, were examined. Sheets now being sent here by Botanists of that area for identification have also been consulted. Collection has also been made in Burdwan Town. Field notes have been taken. These have led to more information about the grasses of that area.

The district of Burdwan, is situated between 22°56' & 25°53' N and 86°48' & 88°25' E. The area of the district is 7034 sq. km (statistical abstract 1961). The eastern portion comprising Burdwan, Kalna and Katwa Sub-divisions with a total area of 5371 sq. km is a wide alluvial plain enclosed by the Ajoy, the Bhagirathi and the Damodar rivers. To the West (Asansol Sub-division), the district narrows to a mere strip of rocky, undulating land, some 24.15 km wide, lying between the Ajoy and the Damodar rivers.

The mean annual temperature is 27°C and the average annual rainfall is 1500 mm.

The whole of the western and a large part of the eastern portions of the district are formed from the debris of the hills of Manbhum, Singhbhum and the Santal Parganas. The soil is partly laterite clay, more or less altered, and partly a red coloured coarse-grained sand.

## ENUMERATION

## POACEAE

Sub-Family: PANICOIDEAE

Tribe: *Andropogoneae*

***Bothriochloa intermedia*** (R. Br.) A. Camus var. ***punctata*** (Roxb.) Keng

A stoutish perennial grass, stems 0.9-1.8 m high, a good fodder.

Burdwan Raj College, Burdwan, Dutta 139 (CAL).

***B. pertusa*** (Linn.) A. Camus

Very variable in habit, 0.6-1.8 m in height slender. The plants growing with *Dichanthium annulatum*. It is a good fodder grass.

Western side of Golapbag, Burdwan, 28-11-1966, Banerjee 4833, 0.6-1.8 m in height (CAL).

***Chrysopogon aciculatus*** (Retz.) Trin.

Very common on village grazing grounds. Flowers from August onwards. Weed of cultivated ground.

Burdwan, 14-10-1894, Nasker 1196 (CAL); Raniganj, 11-10-1894, Nasker 1155 (CAL); Raniganj, 11-10-1894, Nasker 1161 (CAL).

***Cymbopogon schoenanthus*** (Linn.) Spreng.

A tall, erect grass, 0.9-1.8 m height "Camel-grass oil" is distilled from the leaves and roots (Bor l.c.).

Burdwan Raj College, Burdwan 135 (CAL).

***Dichanthium annulatum*** (Forssk.) Stapf

Common in fields throughout the area with *Bothriochloa pertusa*, an average height 1.2 m. Flowers in the cold weather. A very excellent fodder grass.

Golapbag, Burdwan, 28-11-1966, Banerjee 4825, common along the road side, very luxuriant growth, 1.2 m height (CAL); Panagarh Army Base, West Bengal, 17-1-1956, Guha 307 (CAL).

***D. aristatum*** (Poir.) C. E. Hubb.

It has not been reported from Bengal by Prain,

Majumdar or Chaudhuri. Very recently it has been recorded from Bengal by Jain & Banerjee (1967).

Raniganj, Dec. 1866, *Kurz* s.n., in grassy places of the low marshes (CAL).

**Eulalia trispicata** (Schult.) Henr.

An erect, tufted grass, 0.6-0.9 m in height.

Burdwan, *Dutta* 137 (CAL).

**Heteropogon contortus** (Linn.) P. Beauv. ex Roem. et Schult.

A densely tufted, perennial grass, stems 0.3-1.5 m long.

Burrakar, *Kurz* (CAL); Burdwan 14-10-1894, *Nasker* 1201 (CAL); Raniganj, 12-10-1894, *Nasker* 1137, over the hill (CAL).

**Imperata cylindrica** (Linn.) P. Beauv. var. **major** (Nees) C. E. Hubbard ex Hubb. et Vaughan

This variety has not been mentioned by Prain. But this variety covers very large areas, particularly in Bengal. The grass is used as a raw material for paper making (Bor l.c.).

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1188 (CAL).

**Ischaemum indicum** (Houtt.) Merrill

A tufted grass.

Panagarh military farm, Bengal, 17-1-1956, *Nanda* 303 (CAL).

**I. rugosum** Salisb.

It is common in rice field, flowers at the end of the rains. It is eaten by cattle.

Raniganj, 12-10-1894, *Nasker* 1130 & 1131 (CAL); Burdwan, 16-10-1894, *Nasker* 1218 (CAL).

**Mnesithea laevis** (Retz.) Kunth

A slender, erect grass, 0.6-1.2 m in height.

Burdwan, *Dutta* 590 (CAL).

**Pseudosorghum fasciculare** (Roxb.) A. Camus

A slender, annual grass, stems 0.6-0.9 m in height.

Burdwan Raj College, Burdwan 115 (CAL).

**Rotthoellia exaltata** Linn. f.

Plants are large and beset with stiff, tubercle-based hairs. Flowers at the end of the rains.

Burdwan, *Dutta* 554 (CAL).

**Saccharum spontaneum** Linn.

A tall, erect, perennial grass, 1.5-6.0 m in height, with a stout root stock. This species flowers and fruits at the end of the rains. It is a troublesome weed.

Burdwan, *Dutta* 641 (CAL).

**Schizachyrium exile** (Hochst.) Stapf

An erect, slender, annual grass.

Burrakar, 10-12-1874, *Clarke* 25247 E (CAL).

**Vetiveria zizanioides** (Linn.) Nash.

A densely tufted grass, stems 0.6-1.5 m high, with stout spongy aromatic roots.

Burdwan, 14-10-1894, *Nasker* 1197 (CAL); Raniganj, 12-10-1894, *Nasker* 1135 (CAL).

Tribe: *Maydeae*

**Coix lacryma-jobi** Linn.

A perennial grass, often reaching a length of 1.5 m prostrate. Common along water courses.

Raniganj, 11-10-1894, *Nasker* 1152 (CAL).

Tribe: *Panicaceae*

**Alloteropsis cimicina** (Linn.) Stapf

This is a delicate annual grass, 0.3-0.6 m high, appears towards the ends of the rains.

Raniganj, August 1898, *Gage* (CAL).

**Brachiaria distachya** (Linn.) Stapf

It is a branched straggling and creeping grass, with a height 0.3-0.6 m. A weed of the way side and waste places.

Burdwan, 13-10-1894, *Nasker* 1190 (CAL); Raniganj, 11-10-1894, *Nasker* 1141 (CAL); Burrakar, Burdwan, 12-12-1874, *Clarke* 25281 (CAL).

**B. kurzii** (Hook. f.) A. Camus

An annual, decumbent, flaccid grass.

Raniganj, 11-10-1894, *Nasker* 1154 (CAL).

**B. miliformis** (Presl) A. Chase

This grass has not been mentioned by Hooker & Prain. It is growing abundantly near the cultivated ground. A troublesome weed.

Burdwan, *Dutta* 526 (CAL).

**B. reptans** (Linn.) Gard. et C. E. Hubb.

A slender, annual grass, stems creeping and rooting below. A weed of cultivated ground and waste places.

Raniganj, 10-10-1894, *Nasker* 1150 (CAL).

**Digitaria adscendens** (H. B. K.) Henr. subsp. **chrysoblephara** (Fig. et de Not.) Henr.

It has not been mentioned by Hooker & Prain. This species is common in all way side places and open ground.

Damodar canal bank, Burdwan, 14-7-1964, *Dutta* 446 (CAL).

**D. granularis** (Trin.) Henr.

Growing in dry places. A fodder plant.

Raniganj, Bengal, Aug., 1898, *Gage* (CAL); Raniganj, 12-10-1894, *Nasker* 1122 (CAL); Burrakar, Burdwan, 27-9-1873, *Clarke* 21147 (CAL).

**D. preslii** (Kunth) Henr.

It has not been mentioned by Hooker, Prain or Majumdar. A widely creeping, leafy, low grass.

Raniganj, 11-10-1894, *Nasker* 1145 (CAL); Eden Canal, Burdwan, 16-10-1894, *Nasker* 1216 (CAL).

***Digitaria sanguinalis* (Linn.) Scop.**

A rather tall, slender grass.

Burdwan, 14-10-1894, *Nasker* 1198 (CAL); Burdwan, 14-10-1894, *Nasker* 1186 (CAL); Raniganj, 11-10-1894, *Nasker* 1144 (CAL); Burrakar 183 m, Burdwan, 7-12-1894, *Clarke* 25248 E (CAL).

***D. stricta* Roth ex Roem. et Schult.**

Growing in lawns or in cultivated high lands.

Panagarh military area, 17-1-1956, *Guha* 304 (CAL); Raniganj, 12-10-1894, *Nasker* 1112, growing below the hills (CAL).

***Echinochloa colonum* (Linn.) Link**

It is usually found in damp soil, height 0.9 m. Flowers during and at the end of the rains. An obnoxious pest in the rice fields.

Baburbag, Burdwan town, 28-11-1966, *Banerjee* 4825, prostrate on the ground, common in damp soil, height 0.9 m (CAL); Burdwan, 14-10-1894, *Nasker* 1181 (CAL); Raniganj, 11-10-1894, *Nasker* 1142 (CAL).

***Hymenachne pseudointerrupta* C. Muell.**

This grass is found along the margins of the bheels and rice fields.

Department of Botany, Burdwan Raj College, Burdwan (CAL).

***Opismenus burmannii* (Retz.) P. Beauv.**

A small annual grass, culms very slender, upto .5 m. high. It appears under the shed of trees. It is a fodder grass.

Golapbag, Burdwan, 28-11-1966, *Banerjee* 4829, semi-prostrate, it grows by the side of old ghat structure (CAL); Eden Canal, Burdwan, 16-10-1894, *Nasker* 1207 (CAL); Raniganj, 11-10-1894, *Nasker* 1158 (CAL).

***Panicum atrosanguineum* Hochst. ex A. Rich.**

A dwarf annual grass. It has not been mentioned by Prain, Majumdar or Chaudhuri. It is the first time reported from Bengal by Jain (1966).

Damodar canal bank, Burdwan, 14-7-1964, *Dutta* 447 (CAL).

***P. austroasiaticum* Ohwi**

A small, slender, tufted annual grass.

Raniganj, Dec., 1866, *Kurz*, in dry sandy plains (CAL); Raniganj, 12-10-1894, *Nasker* 1133 (CAL).

***P. psilopodium* Trin. var. *psilopodium***

An annual, sub-aquatic, tall grass with greenish panicles.

Raniganj, 12-10-1894, *Nasker* 1155 (CAL).

***P. repens* Linn.**

A perennial grass, extensively creeping stolons, are abundant on the banks of tanks or marshes.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1209 (CAL); Raniganj, 12-10-1894 & 11-10-1894, *Nasker* 1127, 1129 & 1146 (CAL).

***P. trypheron* Schult.**

A tufted annual grass. Flowers during the rains.

Burrakar, Burdwan, 27-9-1893, *Clarke* 21142e (CAL); Eden Canal, Burdwan, 16-10-1894, *Nasker* 1223 (CAL); Raniganj, 11-10-1894, *Nasker* 1164 (CAL).

***Paspalidium flavidum* (Retz.) A. Camus**

A very common annual grass. An obnoxious weed.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1215 (CAL); Burdwan, 14-10-1894, *Nasker* 1185 (CAL); Raniganj, 11-10-1894, *Nasker*, 1148 (CAL).

***P. punctatum* (Burm.) A. Camus**

A perennial grass, average height 0.6 m. At the time of want, local people cooked as a substitute for rice (Information taken from local people).

Aftab Road, Burdwan, 28-11-1966, *Banerjee* 4823, height 0.6 m, common in damp soil by the side of paddy fields (CAL); Raniganj, 12-10-1894, *Nasker* 1124 (CAL); Burdwan, 13-10-1894, *Nasker* 1193 (CAL).

***Paspalum scrobiculatum* Linn.**

An annual grass, height upto 1.5 m long. It is a poisonous grass.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1221 (CAL); Burdwan, 14-10-1894, *Nasker* 1182 (CAL); Raniganj, 12-10-1894, *Nasker* 1128 (CAL).

***Pennisetum pedicellatum* Trin.**

An annual grass, branching, 0.3-0.9 m in height. Burdwan Raj College 140 (CAL).

***Pseudoraphis spinescens* (R. Br.) Vickery var. *depau-perata* (Nees) Bor**

A floating, aquatic grass.

Raniganj, 12-10-1894, *Nasker* 1131 (CAL).

***Sacciolepis indica* (Linn.) A. Chase**

An annual grass of wet places.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1213 (CAL); Raniganj, 12-10-1894, *Nasker* 1136 (CAL).

***Setaria glauca* (Linn.) P. Beauv.**

An annual grass of grassy places. It is best developed during the monsoon.

Eden Canal, Burdwan, 16-10-1894 & 14-10-1894, *Nasker* 1210 & 1194 (CAL); Raniganj, Aug., 1898, *Gage* (CAL); Raniganj, 12-10-1894 & 1-10-1894, *Nasker* 1117 & 1143 (CAL).

***S. italica* (Linn.) P. Beauv.**

Cultivated, annual grass, height 0.9 m. It is commonly called "*Italian miller*".

Golapbag, Burdwan, 28-11-1966, *Banerjee*, 4832, height 0.9 m (CAL); Raniganj, Bengal, Aug., 1898, *Gage* (CAL).

***Setaria tomentosa*** (Roxb.) Kunth

An annual grass, found in damp and shady places. Raniganj, 11-10-1894, *Nasker* 1161 & 1155 (CAL).

***S. verticillata*** (Linn.) P. Beauv.

This grass has not been mentioned by Prain. It is a low shrubby, annual plant.

Burdwan, 16-10-1894, *Nasker* 1217 (CAL).

Sub-family: POOIDEAE

Tribe: *Aristideae*

***Aristida adscensionis*** Linn.

A tufted, annual or perennial, wiry grass.

Burdwan, 14-10-1894, *Nasker* 1200 (CAL); Raniganj, 11-10-1894, *Nasker* 1149 (CAL).

***A. redacta*** Stapf

A tufted, annual, dry land grass.

Burrakur 152.4 m, Burdwan, 27-9-1873, *Clarke* 21115 and 21115B (CAL).

***A. setacea*** Retz.

A stout, erect, perennial grass. A xerophytic plant.

Taldanga Bunglow, near Burrakur, May, 1865, *Kurz* (CAL).

Tribe: *Bambuseae*

***Bambusa bambos*** (L.) Voss

A tall, thick set bamboo, stems 24.4-30.4 m long. Cultivated occasionally in the district.

***Dendrocalamus strictus*** Nees

A close-set bamboo, stems 6-15 m height, often solid. This strong elastic bamboo is used for building purposes.

Burdwan district, *Dutta* 617 (CAL).

Tribe: *Chlorideae*

***Chloris dolichostachya*** Lagasca

A tall, perennial grass, average height 0.9 m. It flourishes in damp places in the forest and can stand shade. A good fodder grass.

Golapbag old ghat, Burdwan, 28-11-1966, *Banerjee* 4830, it grows abundantly by the side of old ghat structure, height 0.9 m (CAL).

***Cynodon arcuatus*** J. S. Presl ex C. B. Presl

This species is often confused with *Cynodon dactylon*. This plant is recently reported from Bengal by Jain (1966).

Burdwan, 14-10-1894, *Nasker* 1180 (CAL).

***C. barberi*** Rang. et Tad.

This species is closely allied to *Cynodon dactylon*. Jain (1966) has reported this species from Bengal.

Bagila, wet rice field, Burdwan, 14-7-1964, *Dutta* 462 (CAL).

***C. dactylon*** (Linn.) Pers.

A slender, perennial, creeping grass. It is one of the best lawn and fodder grasses.

Burdwan, 13-10-1894, *Nasker* 1189 (CAL).

Tribe: *Eragrosteae*

***Dactyloctenium aegyptium*** (Linn.) P. Beauv.

An annual grass with an average height 0.6 m. Common as a weed in cultivated fields and open places. It is a poisonous grass.

Golapbag, Burdwan, 28-11-1966, *Banerjee* 4827, grows in long area on grassy lawn, height, 0.6 m (CAL); Burdwan, 14-10-1894, *Nasker* 1191 & 1199 (CAL); Raniganj, May, 1865, *Kurz* (CAL).

***Desmostachya bipinnata*** (Linn.) Stapf

A tall, stout, stoloniferous, perennial grass. A ring of it is worn when performing certain ceremonies, among which the *Sradh* ceremony is the chief (*Bor* l.c.).

Taldanga Bunglow, near Burrakur, May, 1865, *Kurz*, sandy stony places (CAL); Burdwan, 22-5-1870, *Clarke* 11738 (CAL).

***Eleusine indica*** (Linn.) Gaertn.

A sporadic annual grass which appears in quantity on cultivated ground where it grows with great rapidity with the advent of rains. It is a poisonous grass.

Centre of Golapbag, Burdwan, *Banerjee*, 4834, 0.2 m (CAL); Eden Canal, Burdwan, 16-10-1894, *Nasker* 1220 (CAL); Raniganj 13-10-1894, *Nasker* 1140 (CAL).

***Eragrostis coarctata*** Stapf apud Hook. f.

A tufted, perennial grass, 0.1-0.4 m height. This is a xerophytic grass and grows in sandy places.

Burrakur, Burdwan, Bengal, 243.8 m, 26-9-1873, *Clarke* 20778 D (CAL); Burrakur, very common on the sandy plains near Burrakur, March, 1865, *Kurz* (CAL).

***E. diarrhena*** (Schult.) Steud.

A tall, perennial grass.

Tejgunj, Burdwan, 12-5-1960, *Dutta* 161 (CAL).

***E. diplachnoides*** Steud.

A tall, stout, branching, perennial grass.

Idilpur, Burdwan, 6-5-1960, *Dutta* 118 (CAL).

***E. gangetica*** (Roxb.) Steud.

A tall, suberect, perennial grass, height 30 cm. It is a fodder grass.

Raniganj, 12-10-1894, *Nasker* 1139, below the hills (CAL); Taldanga Bunglow near Burrakur, May, 1865, *Kurz* (CAL); Panagarh Military Station, West

Bengal, 17-1-1956, *Madhuram* 305 (CAL); Raniganj, 12-10-1894, *Nasker* 1119 & 1120 (CAL); common on the sandy plains about Burrakar, July, 1865, *Kurz* (CAL).

**Eragrostis japonica** (Thunb.) Trin.

A slender, graceful, perennial grass.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1222 (CAL); Burdwan, Burrakar, 182.8 m, 7-12-1874, *Clarke* 25249 A (CAL); Raniganj, 12-10-1894, *Nasker* 1123 (CAL).

**E. riparia** (Willd.) Nees

A slender, graceful annual grass.

Burdwan, *Dutta* 636 (CAL).

**E. tenella** (Linn.) P. Beauv. ex Roem. et Schult. var. *tenella*

A slender, graceful, annual grass, found in waste and wet grounds.

Middle of the East bank of Krishnasagar, Burdwan, 28-11-1966, *Banerjee* 4826, semiprostrate, height 0.3 m (CAL); Burdwan, 14-10-1894, *Nasker* 1183 (CAL); Raniganj, 11-10-1894, *Nasker* 1156 (CAL).

**E. tremula** Hochst. ex Steud.

A densely tufted, annual grass.

Damodar river, 28-11-1891, *Prain* (CAL).

**E. unioloides** (Retz.) Nees ex Steud.

It is easily recognised from the pinkish or purplish or sometimes pale spikelets. The species is very common in grazing ground. It is a fodder grass.

Eden Canal, Burdwan, 16-10-1894, *Nasker* 1212 (CAL); Raniganj, 12-10-1894, *Nasker* 1121 (CAL); Raniganj, 20-10-1894, *Nasker* 1118 (CAL).

**Leptochloa panicea** (Retz.) Ohwi

A slender, ascending, annual weed in waste places.

Burdwan, *Dutta* 534 (CAL).

Tribe: *Isachneae*

**Isachne albens** Trin.

This grass has not been mentioned by Prain or Majumdar but very recently it has been recorded by Chaudhuri.

Burdwan Raj College 54 (CAL).

Tribe: *Oryzeae*

**Oryza sativa** Linn.

An annual crop, cultivated all over Burdwan district, West Bengal as "Dhan".

Raniganj, 12-10-1894, *Nasker* 1132, wild, *Oree-dhan* over the water (CAL).

Tribe: *Perotideae*

**Perotis indica** (Linn.) O. Ktze.

A slender grass with leafy stem.

Raniganj, Bengal, Aug., 1898, *Gage* (CAL); Burdwan, 14-10-1894, *Nasker* 1191 (CAL).

Tribe: *Sporoboleae*

**Sporobolus diander** (Retz.) P. Beauv.

Slender, smooth and glabrous, 0.9 m tall, very common.

Raniganj, Bengal, Aug., 1898, *Gage* (CAL); Raniganj, 11-10-1894, *Nasker* 1114 (CAL); Raniganj, 12-10-1894, *Nasker* 1134 & 1138 (CAL); Raniganj, 10-10-1894, *Nasker* 1192 (CAL); Burdwan 14-10-1894, *Nasker* 1195 (CAL); Taldanga Bunglow near Burrakar, sandy plains, common, May, 1865, *Kurz* (CAL); Baburbag, Burdwan, 28-11-1966, *Banerjee* 4824, grows abundantly in damp soil, average height 0.9 m (CAL).

**S. tremulus** (Willd.) Kunth

A small, stoloniferous grass, stems 0.6-1.8 m erect or prostrate.

Raniganj, May, 1865, *Kurz* (CAL).

Tribe: *Triticeae*

**Hordeum vulgare** Linn.

Cultivated.

**Triticum aestivum** Linn.

Cultivated.

Tribe: *Zoysieae*

**Tragus biflorus** Schult.

A low, rigid, perennial grass.

Raniganj, Bengal, Aug., 1898, *Gage* (CAL).

#### ACKNOWLEDGEMENTS

I am grateful to the Director and Joint Director, Botanical Survey of India for all necessary facilities in these studies. My sincerest regard goes to Dr. S. K. Jain for his untiring and useful guidance for preparing my paper.

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