

ASTERACEAE OF GHAZIPUR DISTRICT, UTTAR PRADESH, INDIA

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This paper gives an enumerative account of 33 species belonging to 25 genera of family Asteraceae to the Flora of Ghazipur district (U.P.). The paper provides key to the genera, nomenclature, locality and field number of each species collected from the Ghazipur district.

Keywords : Asteraceae; Flora; Ghazipur.

Introduction

The Ghazipur district forms the Eastern part of Varanasi division (U.P.). It lies between the parallels of 25° 19' and 25° 54' North latitude and 83° 4' and 83° 58' East longitude. It is bounded on the East and North by Jaunpur and Varanasi districts respectively and on the South-East by Shahabad district of state Bihar, separated by the river Karamnasa. It has an area of 3,381 km². The district has been studied by Hooker¹; Duthie²; Raizada³; Kanjilal⁴ and its adjoining area by Haines⁵. During survey of literature there is no published account of the Flora of Ghazipur district (U.P.). During the floristic investigation 33 species of 25 genera of family Asteraceae were identified from Ghazipur district of Uttar Pradesh. Besides these *Carthamus tinctorius*, *Chrysanthemum morifolium*, *C. coronarium*, *Dahlia pinnata*, *Gerbera gossypina*, *Helianthus annuus*, *H. cucumerifolius*, *Tagetes erecta*, *T. minuta*, *T. patula* and *Zinnia elagans* are grown as an ornamental. All these specimens are provided with up to date nomenclature, phenology, ecology, localities and field numbers. All the specimens collected have been deposited in the Duthie Herbarium, Botany Department, University of Allahabad, Allahabad.

Key to Genera

- 1a. Heads either ligulate or tubular 2
- 1b. Heads both ligulate and tubular 12
- 2a. Florets all ligulate 3
- 2b. Florets all tubular 5
- 3a. Ligule bluish, Head solitary, terminal, axillary *Cichorium*
- 3b. Ligule yellow, Head fascicled 4
- 4a. Leaves in a basal rosette, fruiting receptacles 2 mm broad *Launaea*
- 4b. Leaves scattered all along the stem; fruiting receptacles 5-10 mm broad *Sonchus*
- 5a. Head sessile, in the axil of inflated auriculated

- sheath *Caesulia*
- 5b. Head with peduncles, not sunken in auricled leaf base 6
- 6a. Achenes enclosed in an indurate spiny involucre *Xanthium*
- 6b. Achenes not enclosed in an indurate spiny involucre 7
- 7a. Leaves opposite *Ageratum*
- 7b. Leaves alternate 8
- 8a. Inflorescence spinescent 9
- 8b. Inflorescence not spinescent 11
- 9a. Heads 1-flowered *Echinops*
- 9b. Heads many flowered 10
- 10a. Leaves white tomentose below *Cirsium*
- 10b. Leaves not white tomentose below *Amberboa*
- 11a. Head in glomerules, bracts 3 enclosing 4 florets *Elephantopus*
- 11b. Head distinct, bracts many enclosing many florets *Vernonia*
- 12a. Plant woolly *Gnaphalium*
- 12b. Plants not woolly 13
- 13a. Head disciform 14
- 13b. Head radiate 19
- 14a. Pappus present 15
- 14b. Pappus absent 18
- 15a. Florets yellow 16
- 15b. Florets other than yellow 17
- 16a. Anther cells tailed with filiform appendages *Blumea*
- 16b. Anther cells not tailed *Grangea*
- 17a. Leaves broad ovate; anther base sagittate, lobes tailed *Pluchea*
- 17b. Leaves linear; anther base sagittate, lobes not tailed *Coryza*
- 18a. Stem winged; anther base tailed *Sphaeranthus*

- 18b. Stem not winged; anther base sub-entire
.....*Cyathocline*
- 19a. Tall robust herb, florets white, pappus of outer florets
with a pair of hyaline reflexed wings.....*Parthenium*
- 19b. Small weak herb, florets yellow, pappus
different.....20
- 20a. Receptacle palaeaceous.....21
- 20b. Receptacle epalaeaceous.....24
- 21a. Palaeae concave, embracing the florets or
achenes.....22
- 21b. Palaeae flat, not embracing the florets or achenes
.....23
- 22a. Pappus of long plumose hair.....*Tridax*
- 22b. Pappus of ciliate setae.....*Spilanthes*
- 23a. Marginal flowers numerous, many seriate, white
.....*Eclipta*
- 23b. Marginal flowers 5 to few, 1-seriate.....*Blainvillea*
- 24a. Head solitary, pappus 2-seriate, outer row of scales
and inner of hairs.....*Pulicaria*
- 24b. Heads in corymbs, pappus 1-seriate of hairs
.....*Pentanema*
- Systematic enumeration
- Ageratum* L.
A. conyzoides L., Sp. Pl. 839. 1753; Hook. *f.*, Fl. Brit. Ind. 3:
343. 1881; Duthie, FUGP. 1: 443. 1903.
Fl. & Fr.: Greater part of the year.
Common in waste places & along railway tracks.
Hasonpur Gora, 24141
Amberboa (Pers.) Less.
A. ramosa (Roxb.) Jafri in Scientist 3: 29. 1959. *Carduus*
ramosus Roxb., Fl. Ind. 3: 407. 1832. *V. divaricata* (DC.)
Benth. & Hook. *f.*, Gen. Pl. 2: 416. 1873; Hook. *f.*, Fl. Brit.
India 3: 383. 1881. *Microlonchus divaricatus* DC., Prodr.
6: 562. 1838.
Fl. & Fr.: October–April
Occasional in dry sandy places.
Hasonpur Gora, 24210.
Blainvillea Cass
B. acmella (L.) Philipson, Blumea 6: 350. 1950. *Verbesina*
acmella L., Sp. Pl. 901. 1753. *Blainvillea latifolia* (L. *f.*)
DC. ex Wight, Contr. Bot. Ind. 71. 1834; Hook. *f.*, Fl. Brit.
India 3: 305. 1881. *B. rhomboidea* Cass. Dict. Sci. Nat. 29:
493. 1823; Duthie, FUGP. 1: 469. 1903.
Fl. & Fr.: August–November
On fields, gardens, roadsides and railway tracks.
Khanpur, 24260.
Blumea DC.
B. membranacea DC., Prodr. 5: 440. 1836; Hook. *f.*, Fl. Brit.
India 3: 265. 1881; Duthie, FUGP. 1: 455. 1903.
Fl. & Fr.: February–May

In unused land and waste places.

Hasonpur Gora, 24213.

B. mollis (D. Don) Merr. in Philipp. Jour. Sci. Bot. 5: 395.

1910; *Erigeron molle* D. Don, Prodr. Fl. Nepal. 172. 1825.

Blumea wightiana DC. in Wight, Contr. Bot. Ind. 14: 1834;

Hook. *f.*, Fl. Brit. India 3: 261. 1881; Duthie, FUGP. 1: 455.

1903.

Fl. & Fr.: December–June

Occasional-along roadsides and in waste places.

Nandganj, 24121.

Caesulia Roxb.

C. axillaris Roxb. Pl. Cor. 1: 64. t. 93. 1798; Hook. *f.*, Fl. Brit.

India 3: 291. 1881; Duthie, FUGP. 1: 462. 1903.

Fl. & Fr.: September–May

In rice field and irrigational land.

Hasonpur Gora, 24053.

Cirsium P. Mill.

C. verutum (D. Don) Spreng., Syst. Veg. 3: 370. 1826. *Cnicus*

verutus D. Don, Prodr. Fl. Nepal. 167. 1825. *Cirsium*

involutratum ex DC., Prodr. 6: 639. 1838. *C. involucratum*

DC. var. *horridum* (Hook. *f.*) Balakr., Fl. Jowai 1: 256. 1981.

Cnicus involucratum (DC.) Hook. *f.* var. *horrida* Hook. *f.*,

Fl. Brit. India 3: 362. 1881.

Fl. & Fr.: August–December

Open wasteland and grassland.

Hazipur Baresar, 24089.

Cichorium L.

C. intybus L., Sp. Pl. 813. 1753; Hook. *f.*, Fl. Brit. India 3:

391. 1881.

Fl. & Fr.: March–September

Common in fallow fields.

Rajapur, 24246.

Conyza Less.

C. canadensis (L.) Cronq. in Bull. Torrey Bot. Club. 75:

632. 1943. *Erigeron canadensis* L., Sp. Pl. 863. 1753; Hook.

f., Fl. Brit. India 3: 254. 1881.

Fl. & Fr.: July–November

Common in agricultural fields.

Rajapur, 24220.

Cyathocline Cass.

C. purpurea (Buch.-Ham. ex D. Don) O. Kuntze, Rev. Gen.

Pl. 333. 1891. *Cyathocline lyrata* Cass. in Ann. Sci. Nat.

Ser. 1. 17: 420. 1829. Hook. *f.*, Fl. Brit. India 3: 246. 1881;

Duthie, FUGP. 1: 445. 1903.

Fl. & Fr.: February–May

Watercourses, river banks and rice fields.

Saidpur, 24261.

Echinops L.

E. echinatus Roxb., Fl. Ind. 3: 447. 1832; Hook. *f.*, Fl. Brit.

India 3: 358. 1881.

- Fl. & Fr.: January–April
Common on roadsides, ridges and railway tracks.
Alawalpur, 24208.
Eclipta L. *nom. cons.*
E. prostrata (L.) L., Mant. Pl. 2: 286. 1771. *Verbesina prostrata* L., Sp. Pl. 902. 1753. *E. alba* (L.) Hassk., Pl. Jav. Rar. 528. 1848; Hook. f., Fl. Brit. India 3: 304. 1881. *E. erecta* L., Mant. Pl. 2: 286. 1771; Duthie, FUGP. 1: 468. 1903.
Fl. & Fr.: Major part of the year.
Common in gardens and unused lands.
Hasonpur Gora, 24004.
Elephantopus L.
E. scaber L., Sp. Pl. 814. 1753; Hook. f., Fl. Brit. India 3: 242. 1881; Duthie, FUGP. 1: 442. 1903. 7
Fl. & Fr.: October–January
In grassy localities and along ridges.
Nandganj, 24256.
Gnaphalium L.
G. luteo-album subsp. *affine* (D. Don) Koster, Blumea 4(3): 484. 1941. *G. affine* D. Don., Prodr. Fl. Nepal. 173. 1825. *G. luteo-album* var. *multiceps* Hook. f., Fl. Brit. India 3: 288. 1881. *G. luteo-album* L. *sensu* Duthie, FUGP. 1: 461. 1903.
Fl. & Fr.: February–May
Along river banks, in garden and waste places.
Rajapur, 24215.
G. luteo-album L., Sp. Pl. 851. 1753; Hook. f., Fl. Brit. India 3: 288. 1881. *G. luteo-album* L. subsp. *pallidum* (Lam.) Maheshwari, in J. Bombay Nat. Hist. Soc. 57(2): 377. 1960. subsp. *luteo-album* *Sensu*
Fl. & Fr.: February–May
Along river banks, temporary ponds, roadsides, ditches, cultivated fields, waste places and open lands.
Rajapur, 24257.
G. polycaulon Pers., Syn. Pl. 2: 421. 1807. *G. indicum* *auct.* non L. 1753; Hook. f., Fl. Brit. India 3: 289. 1881; Duthie, FUGP. 1: 461. 1903.
Fl. & Fr.: December–May
Common in agricultural fields.
Hasonpur Gora, 24154
G. pennsylvanicum Willd., Enum. Hort. Berol. 867. 1809. *G. purpureum* *auct. pl.* (non L. 1753), Hook. f., Fl. Brit. India 3: 289. 1881; Duthie, FUGP. 1: 462. 1903.
Fl. & Fr.: December–May
Common in waste places.
Rajapur, 24258.
G. pulvinatum Delile, Descr. Egypt Hist. Nat. 266. 1812; Hook. f., Fl. Brit. India 3: 289. 1881; Duthie, FUGP. 1: 462. 1903.
Fl. & Fr.: December–May
Along ponds, ditches or river banks.
Rajapur, 24211.
Grangea Adans.
G. maderaspatana (L.) Poir. In Lam., Encycl. (Suppl. 2) 825. 1812; Hook. f., Fl. Brit. India 3: 308. 1881; Duthie, FUGP. 1: 445. 1903. *Artemisia maderaspatana* L., Sp. Pl. 849. 1753.
Fl. & Fr.: March–November
Waste places, moist places, agricultural fields and roadsides.
Surjipati, 24093.
Launaea Cass.
L. asplenifolia (Willd.) Hook. f., Fl. Brit. India 3: 415. 1881; Duthie, FUGP. 1: 81. 1903. *Prenanthes asplenifolia* Willd., Sp. Pl. 3: 1540. 1803.
Fl. & Fr.: March–October
On grassy field and waste places and gardens.
Hazipur Bareser, 24259.
L. procumbens (Roxb.) Ramayya & Rajagopal, Kew Bull. 23: 465. 1969. *Launaea nudicaulis sensu auct. pl.* (India) [non Hook. f. *sens. stricto*. Fl. Brit. India 3: 416. 1881; non *Microrhynchus nudicaulis* (L.) Less.]; Duthie, FUGP. 1: 494. 1903.
Fl. & Fr.: March–September
In fields, marshy places, gardens and wastelands.
Hazipur Bareser, 24069.
Parthenium L.
P. hysterophorous L., Sp. Pl. 988. 1753; R. S. Rao in J. Bombay Nat. Hist. Soc. 54: 218. 1956.
Fl. & Fr.: May–March
Along roadsides, waste places and railways tracks.
Hasonpur Gora, 24200.
Pentanema Cass.
P. vestitum (Wall. ex DC.) Benth. ex Hook. f., Gen. Pl. 2: 335. 1873; Hook. f., Fl. Brit. India 3: 296. 1881. *Imula vestita* Wall ex DC., Prodr. 5: 470. 1836; Duthie, FUGP. 1: 463. 1903.
Fl. & Fr.: March–June
In deforested land, agricultural fields and waste places.
Saidpur, 24219.
Pluchea Cass.
P. lanceolata (DC.) C. B. Clarke, Comp. Ind. 94. 1876; Hook. f., Fl. Brit. India 3: 272. 1881; Duthie, FUGP. 1: 458. 1903.
Fl. & Fr.: February–June
Common in unused and in gardens.
Surjipur, 24081.
Pulicaria Gaertn.
P. crispa (Forsskal) Benth. in Benth. & Hook. f., Gen. Pl. 2: 336. 1873; Hook. f., Fl. Brit. India 3: 299. 1881; Duthie, FUGP. 1: 466. 1903.
Fl. & Fr.: November–May
In gardens, waste lands, along roads, railway tracks and river beds.

Malikpura, 24130.

P. foliolosa DC., Prodr. 5: 480. 1834; Hook. *f.*, Fl. Brit. India 3: 299. 1881; Duthie, FUGP. 1: 464. 1903.

Fl. & Fr.: February–August

Along river beds.

Kasimabad, 24164.

Sonchus L.

S. asper (L.) Hill, Brit. Herb. 47. 1756; Hook. *f.*, Fl. Brit. India 3: 414. 1881; Duthie, FUGP. 1: 493. 1903. *Sonchus*

oleraceus var. *asper* L., Sp. Pl. 794. 1753.

Fl. & Fr.: April–September

Waste places, roadsides and agricultural fields.

Hasonpur Gora, 24025.

S. brachyotus DC., Prodr. 7: 186. 1838. *S. arvensis* L., *auct. pl.* (non L. 1753), Hook. *f.*, Fl. Brit. India 3: 414; Duthie, FUGP. 1: 493. 1903.

Fl. & Fr.: November–March

Common in waste places.

Rajapur, 24216.

Sphaeranthus L.

S. senegalensis DC., Prodr. 5: 370. 1836. *S. indicus* *auct. pl.* (non L. 1753), Hook. *f.*, Fl. Brit. India 3: 275. 1881; Duthie, FUGP. 1: 459. 1903.

Fl. & Fr.: March–June

Rice fields and moist waste places.

Surjipati, 24262.

Spilanthes Jacq.

S. ciliata H. B. K., Nov. Gen. et Sp. Pl. 208. 1820.

Fl. & Fr.: March–May

In wet or marshy places.

Nandganj, 24024.

Tridax L.

T. procumbens L., Sp. Pl. 900. 1753; Hook. *f.*, Fl. Brit. India 3: 311. 1881; Duthie, FUGP. 1: 475. 1903.

Fl. & Fr.: Throughout year.

River-beds, roadsides, waste places and grassy localities. Saidpur, 24137.

Vernonia Schreb.

V. cinerea (L.) Less. Linnaea 4: 291. 1829; Hook. *f.*, Fl. Brit. India 3: 233. 1881; Duthie, FUGP. 1: 440. 1903. *Conyza cinerea* L., Sp. Pl. 862. 1753.

Fl. & Fr.: January–December

In waste places, roadsides and on old walls.

Mohmadabad, 24217.

Xanthium L.

X. indicum Koenig in Roxb., Fl. Ind. 3: 601. 1832. *Xanthium strumarium* L., Sp. Pl. 987. 1753; Hook. *f.*, Fl. Brit. India 3: 303. 1881; Duthie, FUGP. 1: 467. 1903.

Fl. & Fr.: March–December

In waste places, along roadsides, near streams and in dried river beds.

Hasonpur Gora, 24033.

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