

Original Research Article

**Taxonomic studies of the genus *Eragrostis* Wolf (Poaceae: Chloridoideae) in Telangana-
with new additions**

ABSTRACT

Eragrostis Wolf is a highly variable genus in the grass family Poaceae (subfamily Chloridoideae). A taxonomic study of twenty-five species of the genus *Eragrostis* in Telangana state is here presented. The study was carried out based on fresh collections from various localities of the state and herbarium specimens housed in different herbaria. The results revealed the report of seven species, of these three species namely *E. maderaspatana* Bor, *E. nigra* Nees ex Steud. and *E. zeylanica* Nees & Mey are reported here as additions to the flora of Telangana state, remaining four species already reported by the authors. Key for identifying the species cited for Telangana state, phenology, habitat, local, national distribution, specimens examined, notes, and photographs are provided for easy identification.

Keywords: Endemic species; *Eragrostis*; new distributional records; notes; Poaceae; Telangana

1. INTRODUCTION

“The genus *Eragrostis* Wolf (Poaceae: Chloridoideae) comprises approximately 423 species and is distributed in tropical, subtropical, and warm temperate regions of the world” [1,2,3,4,5]. Out of 423 species, 55 species are endemic to Australia [6] followed by Mexico with 36 species and the United States and Canada with 25 species [7,8,9]. “In India, the genus is represented by 48 taxa belonging to 43 species and five varieties and distributed from sea level to 2800 m elevations” [9,10], “Five of these species and four varieties are endemic to the country” [10].

A review of the literature on grasses documentation in Telangana state is presented to provide a perspective of the nature and extent of the work done within this state to date. Only three taxonomic/systematic works have been published on the genus *Eragrostis* for Telangana state: Grasses of Adilabad (Erstwhile District) [19], Grasses of

Nizamabad District [12], and Grasses of Telangana [16]. The main aim of the study was to document grass diversity of the Telangana state.

In Telangana state, the genus is represented by 17 species [17, 18], in addition to five recently registered species namely, *Eragrostis barrelieri* Daveau collected from Nirmal district, Telangana and reported as an addition to the grass flora of India [11]; *E. cumingii* Steud. reported as a new distributional record for the state of Telangana, collected from Adilabad and Nizamabad districts [12,13]; “*E. macilenta* (A.Rich.) Steud. collected from Manjeera Wildlife Sanctuary of Medak district and reported as an addition to the grass flora of Telangana” [14]; *E. nilgiriensis* Vivek, G.V.S. Murthy & V.J. Nair collected from Tadwai Village of Kamareddy District and reported as extended distribution of endemic species [15] and *E. papposa* (Roem. & Schult.) Duf. ex Steud. collected from

Manasahills, Rajendranagar, Rangareddy district, and reported as a new report from Telangana state [16].

2. STUDY AREA

Telangana, the 29th state of the Indian Union with 10 districts was segregated out of the common state of Andhra Pradesh in 2014, which is the 12th largest state of the country. The Hyderabad city is the capital of Telangana; this is surrounded by Maharashtra and Chhattisgarh in the North, Karnataka in the West, and Andhra Pradesh in the South and East directions. The Telangana state is located on the Deccan plateau to the West of the Eastern Ghats range between 15°48' 32" to 19° 55' 46" N and 77° 09' 02" to 81° 18' 51" E, with an area of 112,077 km² and an elevation range between 130 to 900 m above the sea level. [17,18].

3. MATERIALS AND METHODS

The present study is based on the regular floristic investigations were undertaken during the years 2014-2022 and

investigation of the specimens housed in various regional and national herbaria (BSID, CAL, HY, MH, SKU, KUW, TUH, etc.). The collected specimens were processed as per the standard herbarium protocol described by Jain and Rao [20]. Every specimen was carefully studied by dissecting the floral parts of the duplicate specimens under Olympus dissection and stereo (SZ-61) microscopes. Detailed study of the dried specimens and their identification were carried out at the Botanical Survey of India, Deccan Regional Centre, Hyderabad and Department of Botany, Telangana University, Nizamabad district. The Indian floras such as Grasses of Burma, Ceylon, India and Pakistan [21], Flora of Tamil Nadu – Grasses [22], Grasses of Maharashtra [23], Flora of Telangana [17,18], Grasses of Adilabad (Erstwhile District) [19] and Grasses of Nizamabad District [12] were consulted. Further, detailed recent revision by Vivek et al. [10] was referred. The identified specimens were further confirmed by

comparing them with the authentic specimens deposited at the BSID, CAL, MH, and TUH. Key to the species, colour photographs are provided to facilitate easy identification. Voucher specimens are deposited at the Botanical Survey of India, Deccan Regional Centre (BSID), Hyderabad, and Department of Botany, Telangana University Herbarium (TUH), Dichpally, Nizamabad, Telangana.

4. RESULTS AND DISCUSSION

Twenty-five species have been documented in present taxonomic studies of the genus *Eragrostis* in Telangana. During the study seven species reported, of these four species namely, *E. barrelieri* Daveau [11], *E. cumingii* Steud. [12,13], *E. macilenta* (A.Rich.) Steud. [14], and *E. nilgiriensis* Vivek, G.V.S. Murthy & V.J. Nair [15] recently published by the authors and remaining three species namely *E. maderaspatana* Bor, *E. nigra* Nees ex Steud. and *E. zeylanica* Nees & Mey have reported as an addition to the flora of Telangana. *E.*

papposa (Roem. & Schult.) Duf. ex Steud. [16] added to the flora of Telangana by various authors in last three years. The detailed studies of the species are discussed in taxonomic treatment.

4.1. Taxonomic treatment

“*Eragrostis* Wolf, Gen. Pl.: 23. 1776. Type: *Eragrostis minor* Host. Lectotype designated by Pfeiffer, Nomencl. Bot. 1(2): 1226. 1874-1875”. [24]

Annuals or perennials. Culms erect or decumbent, geniculate. Leaf blades linear to lanceolate with raised glands on margins or eglandular, surfaces hairy or glabrous; ligules usually ciliate or membranous; leaf sheaths often with tufts of hairs at the mouth. Inflorescence is open to contracted or spiciform panicle, branches alternate or sub-whorled, glandular or eglandular, glabrous or hairy on axils. Spikelets ovate, oblong, linear to lanceolate, laterally compressed, green to grey, greenish to yellowish, purplish to greenish black. Glumes deciduous, linear to

lanceolate or ovate, acute or acuminate at apex, glabrous or ciliate on margins, nerved or nerveless, keeled or not keeled. Florets up to 72, disarticulate from below upwards or from above downwards; rachilla more or less zigzag. Lemmas ovate, lanceolate, oblong or elliptic, acute to acuminate or obtuse at apex, glabrous or ciliate on margins, 3-nerved, 1-keeled. Paleas persistent or caducous, acute,

acuminate or obtuse at apex, flap margins entire or ciliate, 2-nerved, 2-keeled, keels scaberulous, ciliate or eciliate. Lodicules 2. Stamens 2 or 3. Ovary ovoid, obovoid, or ellipsoid; stigmas plumose. Caryopses variously shaped, truncate, obtuse or acute, brownish to yellowish or deep brown.

4.2. Key to the *Eragrostis* species from Telangana state

1. Florets disarticulating from above downward.....2
 - Florets disarticulating from below upward.....9
2. Lemmas ciliate on the margins.....3
 - Lemmas not ciliate on the margins.....4
3. Lemmas acuminate or mucronate; stamens 2 **E. ciliata**
 - Lemmas obtuse to acute; stamens 3..... **E. coarctata**
4. Palea keels more or less ciliate.....5
 - Palea keels scabrid or smooth, not ciliate.....8
5. Panicle spiciform or compact6
 - Panicle effuse.....7
6. Annuals; lemma ciliate on the keels at least at the base; stamens 2..... **E. ciliaris**
 - Perennials; lemma not ciliate on the keels; stamens 3..... **E. riparia**

7. Culms and leaves more or less viscous.....	E. viscosa
Culms and leaves not viscous.....	E. tenella
8. Panicles thyriform; lemmas truncate at apex; palea rounded at apex.....	E. aspera
Panicles oblong or linear; lemmas acute to acuminate at apex; palea three lobed at apex.....	E. japonica
9. Plants prominently glandular at least on culms/leaves/peduncle/panicle branches/pedicels/ nerves of glumes and lemmas.....	10
Plants eglandular.....	18
10. Primary panicle branches capillary, filiform; spikelets less than 1 mm wide.....	E. pilosa
Primary panicle branches more or less stiff; spikelets more than 1 mm wide.....	11
11. Leaf margins glandular (at times absent in <i>E. maderaspatana</i>).....	12
Leaf margins eglandular.....	14
12. Caryopses oblong, truncate at both ends.....	E. maderaspatana
Caryopses elliptic-globose to orbicular.....	13
13. Spikelets oblong, 1.3-2.5 mm wide; lemmas 1.5-2 mm long.....	E. minor
Spikelets broadly oblong to ovate-lanceolate, 2-4 mm wide; lemmas 2-2.2 mm long.....	E. cilianensis
14. Perennials, glumes nerved/nerveless or nerves obscure	15
Annuals or short-lived perennials, glumes distinctly one nerved.....	16
15. Spikelets serrate in appearance, ellipsoid to oblongoid.....	E. tenuifolia
Spikelets do not serrate in appearance, oblong to ellipsoid.....	E. papposa
16. Annuals or short-lived perennials; spikelets 1-1.25 mm wide; lemma 1.8-2 mm long; caryopsis laterally compressed.....	E. barrelieri

Annuals; spikelets 1.3-1.8 mm wide; lemma 1.2-1.8 mm long; caryopsis ventrally compressed.....	17
17. Lemmas 1.2-1.5 mm long; caryopsis ellipsoid or narrowly oblong or ovoid to sub-globose, sometimes ventrally flattened, not grooved.....	E. nilgiriensis
Lemmas 1.5-1.8 mm long; caryopsis oblong, truncate at both ends, ventrally flattened to slightly grooved.....	E. maderaspatana
18. Palea not persistent on rachilla nodes (at times sub-persistent in <i>E.gangetica</i>).....	19
Palea persistent on rachilla nodes	21
19. Rachilla slender and clearly visible between florets; spikelets less than 1.5 mm wide; lemmas less than 1 mm long.....	E. gangetica
Rachilla more or less stiff and not visible between florets; spikelets more than 1.5 mm wide; lemmas more than 1 mm long.....	20
20. Paleas narrowly winged; stamens 2; anthers less than 0.5 mm long.....	E. unioides
Paleas not winged; stamens 3; anthers more than 0.5 mm long.....	E. atrovirens
21. Spikelets in fascicles.....	22
Spikelets not in fascicles.....	23
22. Spikelets up to 66-flowered; lemmas up to 2.2 mm long; paleas up to 1.5 mm long.....	E. zeylanica
Spikelets up to 40-flowered; lemmas less than 1.8 mm long; paleas less than 1.25 mm long...	E. cumingii
23. Perennials.....	24
Annuals.....	25
24. Panicles more or less contracted; lemmas 1.2-1.5 mm long, purplish towards the apex.....	

- **E. nutans**
- Panicles effused; lemmas 2-2.2 mm long, black or greenish black..... **E. nigra**
25. Spikelets 10-30 mm long, 10 -72 flowered.....**E. tremula**
- Spikelets 3-6 mm long, up to 14-flowered.....26
26. Lowermost branches whorled; long white hairs usually in the axils of the panicle branches;
spikelets less than 1 mm wide..... **E. pilosa**
- Lowermost branches sub-whorled; no long white hairs in the axils of the panicle branches;
spikelets more than 1 mm wide.....**E. macilentia**

5.3. Enumeration

Specimens examined: Adilabad District:

1. Eragrostis aspera (Jacq.) Nees, Fl. Afr. Asifabad, Jainur, *J. Swamy & A. Appaiah*
Austral. Ill. 3: 408. 1841. *Poa aspera* Jacq., 0057 (BSID); Echoda Mandal, Gubba
Hort. Bot. Vindob. 3: 32. t. 56. 1777. (Fig. 1) Village, *V. Jalander* 495 (TUH); Echoda

Description: [10]

Flowering and fruiting: November-
February.

Habitat: Common weed in cultivated fields
and roadsides of sandy loam soils.

Distribution: TELANGANA: Adilabad,
Nirmal and Nizamabad districts; INDIA:
Andhra Pradesh, Bihar, Jharkhand,
Karnataka, Kerala, Madhya Pradesh,
Maharashtra, Odisha, Rajasthan and Tamil
Nadu.

Mandal, Jamidi Village, *V. Jalander* 496
(TUH); Pochera Waterfalls, Boath Mandal, *V.*
Jalander 497 (TUH); **Nirmal District:**

Tanoor Mandal, Boltharoda Village, *V.*
Jalander 943 (TUH); Bhainsa Mandal, Sirala
Village, *V. Jalander* 940 (TUH).

Note: The species easily recognized by its
large thyriform panicle with purple spikelets
from all other species.

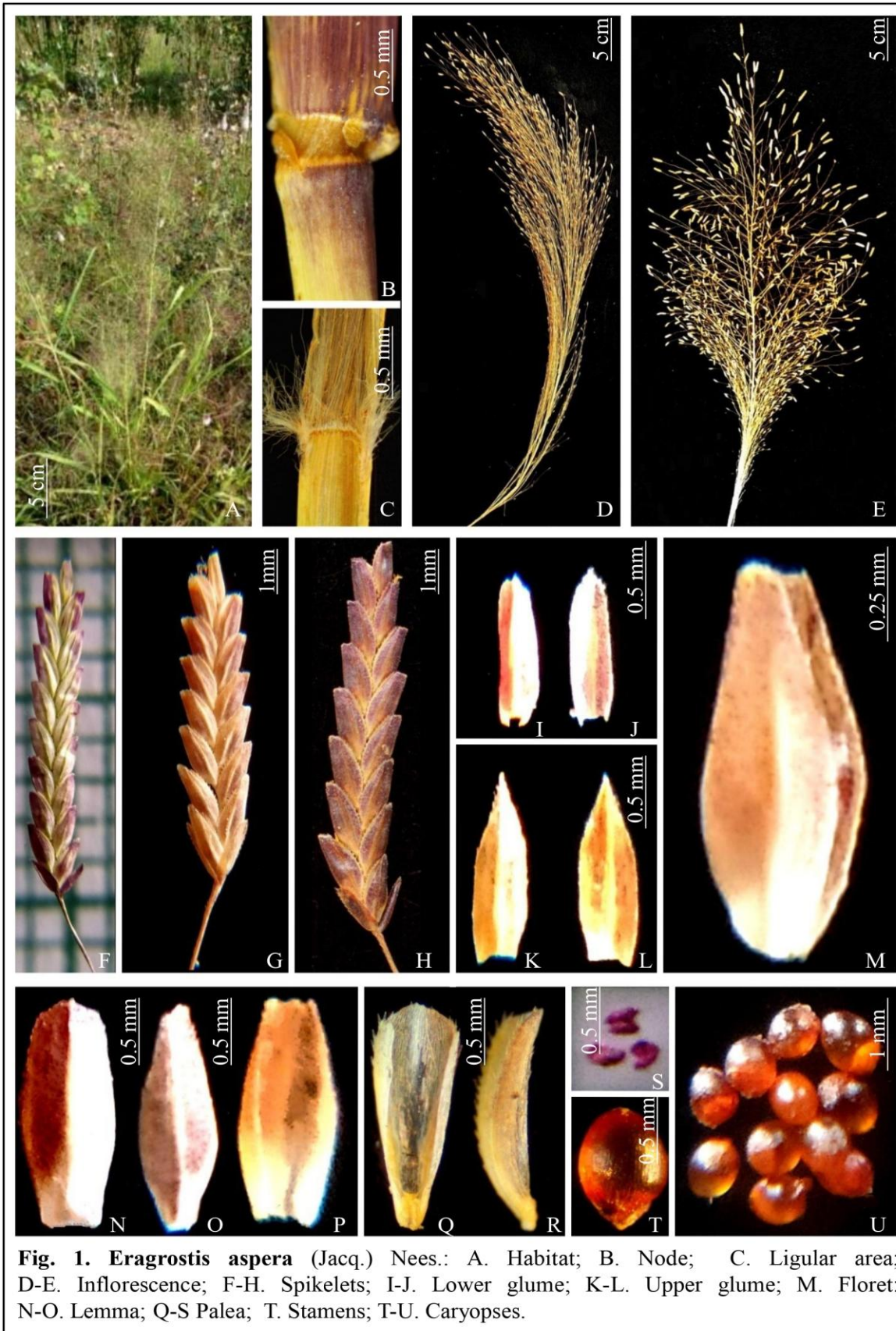


Fig. 1. *Eragrostis aspera* (Jacq.) Nees.: A. Habitat; B. Node; C. Ligular area; D-E. Inflorescence; F-H. Spikelets; I-J. Lower glume; K-L. Upper glume; M. Floret; N-O. Lemma; Q-S Palea; T. Stamens; T-U. Caryopses.

2. Eragrostis atrovirens (Desf.) Trin. ex Steud., Nomencl. Bot., ed. 2, 1: 562. 1840. *Poa atrovirens* Desf., Fl. Atlant. 1: 73, t. 14. 1798. (Fig. 2)

Description: [10]

Flowering and fruiting: August-January.

Habitat: Common in swampy habitats.

Distribution: Throughout the state and India.

Specimens examined: Adilabad District:

Jam cheruvulu, *M. Hemambara Reedy* 14586 (SKU); Kadam river bank, *T. Pullaiah & P. V. Prasanna* 4142; Kawal Tiger Reserve, Uttoor Division, Sirichelma Range, Kuntala beat, *J. Swamy* 0119 (BSID); **Karimnagar**

District: Kodimial, *G.V. Subbarao* 20132 (MH); Mahadevpur, nearby Neelampalli, *N. Rama Rao & T. Ravishankar* 83712 (MH);

Khammam District: Kinnerasani Wildlife Sanctuary, Mandrikalapadu West, *J. Swamy*

11909 (BSID); **Mahabubnagar District:** Mallela Theertham, *S.R. Srinivasan* 110705 (MH); Mallela Theertham, *S.R. Srinivasan* 11414 (MH); **Medak District:** Nagsampalli

RF, *R. Gopalan* 104183 (MH), Narsapur tank, *T. Pullaiah & M. S. Gayathri* 12011 (SKU); Pocharam Wildlife Sanctuary, *R. Gopalan* 116412 (MH); Pocharam Wildlife Sanctuary, Santaipet beat, *J. Swamy* 0586 (HY);

Nalgonda District: Arekepally, *A. Baleshwar Reddy* 001261 (BSID); **Nizamabad District:**

Sirnapalli river, *B. Ravi Prasad Rao & G. Obulesu* 9077 (SKU); Sriramsagar Project, *V. Jalander* 007 (TUH); **Rangareddy District:**

Hyderabad, *M. Venkata Ramana* 02151 (HY);

Warangal District: Cherial, *C. Sudhakar Reddy* 728; Pakhal, *A.N. Henry* 15911 (MH); Pakhal, beside the lake, *K.M. Sebastine* 11702 (MH).

3. Eragrostis barrelieri Daveau in J. Bot. (Morot) 8: 289. 1894; Jalander et al. in Nelumbo 64 (1): 95-97.2022. (Fig. 3)

Description: [11]

Flowering and fruiting: October–December.

Habitat: Occasionally grows along gravelly roadsides and agriculture fields.

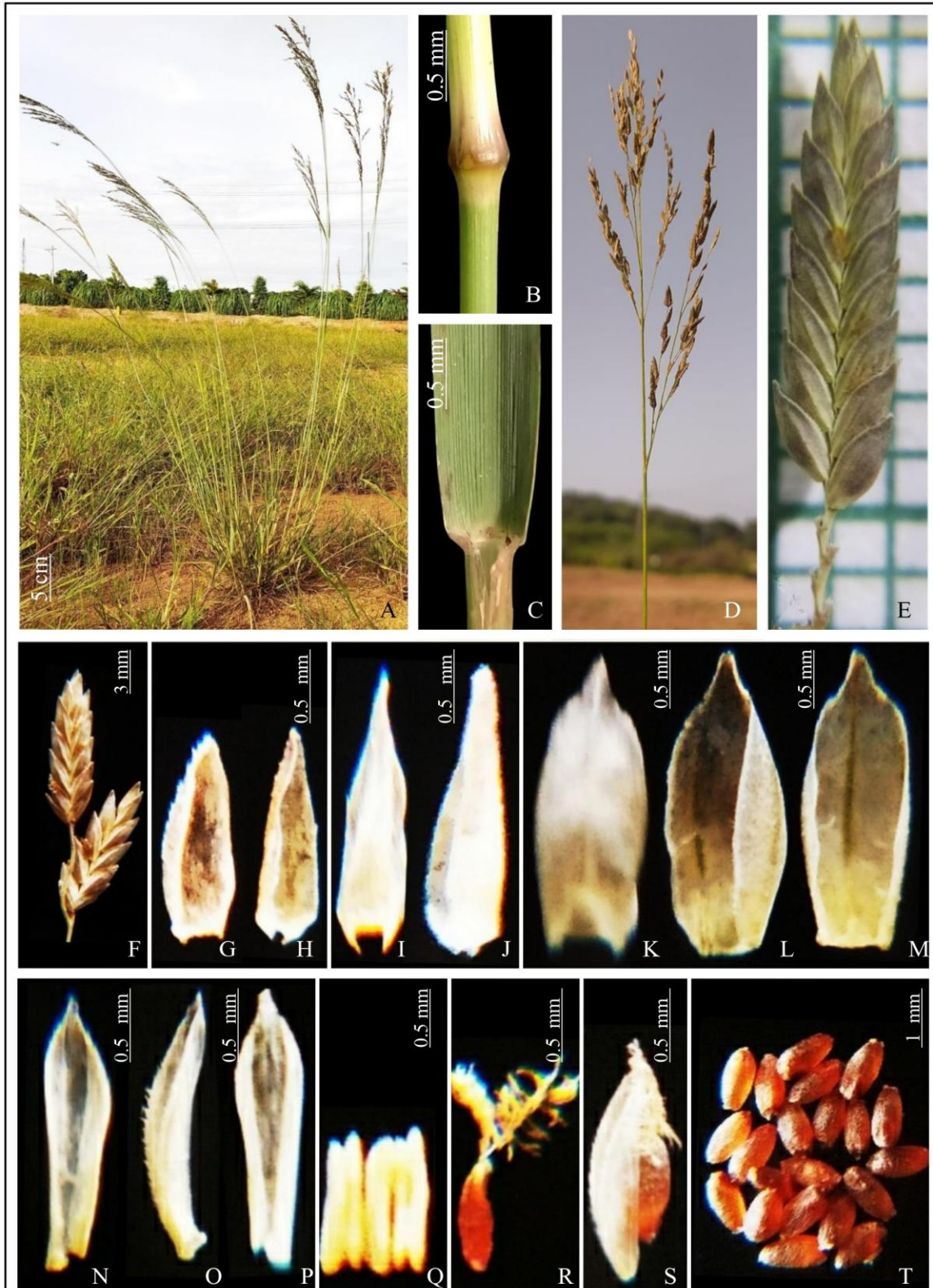


Fig. 2. *Eragrostis atrovirens* (Desf.) Trin. ex Steud.: A. Habitat; B. Node; C. Leaf base; D. Inflorescence; E-F. Spikelets; G-H. Lower glume; I-J. Upper glume; K-M. Lemma; N-P. Palea; Q. Stamens; R. Pistil; S. Caryopsis with palea; T. Caryopses.



Fig. 3: *Eragrostis barrelieri* Daveau: A. Habitat; B. Habit; C. Ring like gland below the node; D. Ligular area; E. Leaf blade with out glands; F. Glandular patch below the inflorescence; G. Inflorescence; H. Part of inflorescence; ; I-M. Spikelets; N-O. Glandular bands on pedicels of spikelets; P. Persistent palea on the rachilla nodes; Q-R. Lower glume; S-T. Upper glume; U. Floret; V-X. Lemma; Y-A1. Palea; B1. Stamens; C1-E1. Caryopsis .

Distribution: Jalander et al. [10] recently reported from the state of Telangana (Nirmal District).

Specimen examined: India, Telangana,

Adilabad District: Echoda, Near NH-44, V.

Jalander 493 (TUH); **Nirmal District:**

Bhainsa Mandal, Bondrat Village, V.

Jalander & J. Swamy 435 (BSID & TUH).

Notes: “*E. barrelieri* is easily distinguished

by its conspicuous glandular ring below the

upper nodes and pedicels. The species is often

likely to be confused with *E. maderaspatana*

and *E. minor* by its habit and glandular culms

and habit. From *E. minor* this species is

distinguished by its lesser glandular culms,

absence of glands along leaf margins and

from *E. maderaspatana* by ellipsoid to

oblong, and prismatic caryopsis” [11].

4. *Eragrostis cilianensis* (All.) Vignolo ex

Janch., Mitt. Naturwiss. Vereins Univ. Wein

5(9): 110. 1907. *Poa cilianensis* All., Fl.

Pedem. 2: 246, t. 91, f. 2. 1785. *E. major*

Host, Icon. Descr. Gram. Austriac. 4: 14, t.

24. 1809, nom, superfl. (Fig. 4)

Description: [10]

Flowering and fruiting: August - December.

Habitat: Occasional in cultivated fields, on hill slopes, and in wastelands.

Distribution: TELANGANA: Adilabad, Nirmal, Nizamabad and Rangareddy districts.

INDIA: Almost throughout.

Specimens examined: Adilabad District:

Sattennapalle Reserve Forest, T. Pullaiah &

P.V. Prasanna 6152 (SKU); **Nirmal District:**

Degaon Village, Bhainsa Mandal, V. *Jalander*

445 (TUH); **Nizamabad District:** Dichpally,

V. *Jalander* 0177 (TUH); **Rangareddy**

District: Vikarabad, M.R. Suxena 105 (DD);

Hyderabad, M. Venkata Ramana 02152 (HY).

5. *Eragrostis ciliaris* (L.) R.Br. in Tuckey,

Narr. Exped. Zaire App. 478. 1818; Stapf in

Hook.f., Fl. Brit. India 7: 314. 1896; Bor,

Grasses Burma, Ceylon, India & Pakistan

506. 1960; Bhattacharya, Grasses Bamboos

India 2: 598. 1997; Pullaiah, Fl. Telangana 3:



Fig. 4. *Eragrostis cilianensis* (All.) Vignolo ex Janch.: A. Habitat; B. Habit; C. Glands below the node; D. Glands below the panicle; E. Gland on leaf margin; F. Glands on glumes; G. Inflorescence; H. Part of inflorescence; I-L. Spikelets; M-N. Lower glume; O-P. Upper glume; Q. Floret; R-T. Lemma; U-W. Palea; X. Caryopses.



Fig. 5. *Eragrostis ciliaris* (L.) R.Br.: A. Habitat; B. Habit; C. Node; D. Leaf base; E. Inflorescence; F. Part of inflorescence; G-I. Spikelets; J. Lower glume; K. Upper glume; L-M. Lemma; N-O. Palea; P. Stamens; Q. Caryopsis.

1124. 2015; Reddy & Reddy, Fl. Telangana 714. 2016; Mao & Dash, Fl. Pl. India Annot. Checkl. Monocot. 3: 365. 2020; Jalander et al., Grasses Nizamabad 135. 2021; Vivek et al. in Nelumbo 60 (1): 45. 2021. *Poa ciliaris* L., Syst. Nat. ed. 10.2: 875. 1759. (Fig. 5)

Description: [10]

Flowering and fruiting: August - December.

Habitat: Occasional in cultivated fields, on hill slopes, and in wastelands.

Distribution: TELANGANA: Nalgonda and Nizamabad districts; INDIA: Andhra Pradesh, Bihar, Chhattisgarh, Daman & Diu, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh.

Specimens examined: Nalgonda District: Peddavura, A. Baleshwar Reddy 005053 (BSID); **Nizamabad District:** Madapur, V. Jalander 174 (TUH).

Note: The species is allied to *E. riparia* (Willd.) Nees by its inflorescence but it can

be easily recognized by its 2 stamens whereas in the *E. riparia* stamens are three.

6. Eragrostis ciliata (Roxb.) Nees, Agrost. Bras.: 512. 1829. *Poa ciliata* Roxb., Fl. Ind. 1: 336. 1820. (Fig. 6)

Description: [10]

Flowering and fruiting: Almost throughout the year.

Habitat: Open places and wasteland.

Distribution: TELANGANA: Hyderabad, Khammam, Nalgonda and Nizamabad districts; INDIA: Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Uttar Pradesh and West Bengal.

Specimens examined: Hyderabad District: Hyderabad, M. Venkata Ramana 02153 (HY);

Khammam District: Kinnerasani Wildlife Sanctuary, Rangapuram East, J. Swamy 9340 (BSID); **Nalgonda District:** Krishna River bank, K.M. Sebestine 9819 (MH);

Nizamabad District: Dichpally, V. Jalander 476 (TUH).

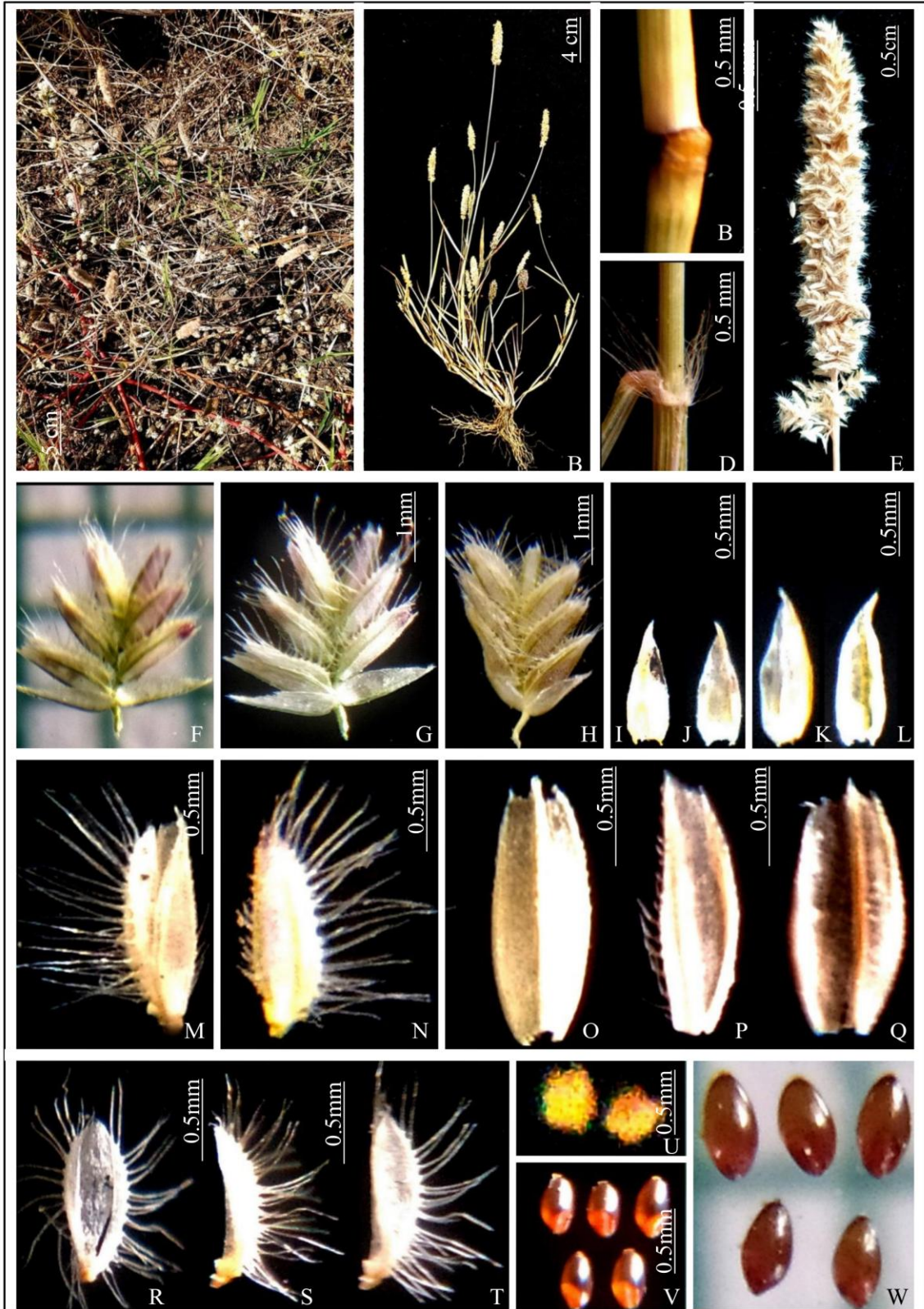


Fig. 6. *Eragrostis ciliata* (Roxb.) Nees: A. Habitat; B. Habit; C. Node; D. Leaf base; E. Inflorescence; F-H Spikelets; I-J. Lower glume; K-L Upper glume; M-N. Florets; O-Q. Lemma; R-T. Palea; U. Stamens; V-W. Caryopses.

7. *Eragrostis coarctata* Stapf in Hook.f., Fl. Brit. India 7: 313. 1896. (Fig. 7)

Description: [10]

Flowering and fruiting: Throughout the year.

Habitat: Occasional on the sandy areas.

Distribution: TELANGANA: Hyderabad, Karimnagar, Khammam, Nizamabad and Rangareddy Districts; INDIA: Andhra Pradesh, Assam, Bihar, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Specimens examined: Hyderabad District:

Upparapally, *M.R. Suxena* 260 (DD);

Karimnagar District: Aklaspur, *G.V. Subbarao* 20236 (CAL); **Khammam**

District: Kinnerasani Wildlife Sanctuary,

Banjara beat, *J. Swamy* 9510 (BSID);

Bhadrachalam Forest, *R. Chandrasekaran*

99033 (MH); Lakshmipuram Forest, *R.*

Chandrasekaran 98910 (MH); Kinnerasani

Wildlife Sanctuary, Manubothulapadu East, *J.*

Swamy 11805 (BSID); Kinnerasani Wildlife

Sanctuary, Mylaram, Jalleravagu, *J. Swamy* 11838 (BSID); Ratham Hutta hills, *R.*

Chandrasekaran 99059 (MH); **Nizamabad**

District: Armoor, *V. Jalander* 375 (TUH);

Rangareddy District: Mohmmadabad, *M.S. Mohammed* 10550 (SKU).

Note: The species is allied to *E. riparia* by its contracted inflorescence but it can be easily recognized by its eglandular parts and ciliate lemmas and whereas the *E. riparia* is glandular species and does not have cilia on its lemmas.

8. *Eragrostis cumingii* Steud., Syn. Pl.

Glumac. 1: 266. 1854. *E. distans* Hack., Publ.

Bur. Sci. Gov. Lab. 35: 81. 1906. (Fig. 8)

Description: [10]

Flowering and fruiting: August-December

Habitat: Occasional in cultivated fields, on hill slopes, and wastelands.

Distribution: TELANGANA: Adilabad and Nizamabad districts; INDIA: Andaman & Nicobar Islands and Kerala.



Fig. 7. *Eragrostis coarctata* Stapf: A. Habitat; B. Node; C. Ligular area; D-E. Inflorescence; F-H. Spikelets; I-J. Lower glume; K-L. Upper glume; M. Floret; N-P. Lemma; Q-S. Palea; T. Pistil; U. Stamens; V. Caryopses.

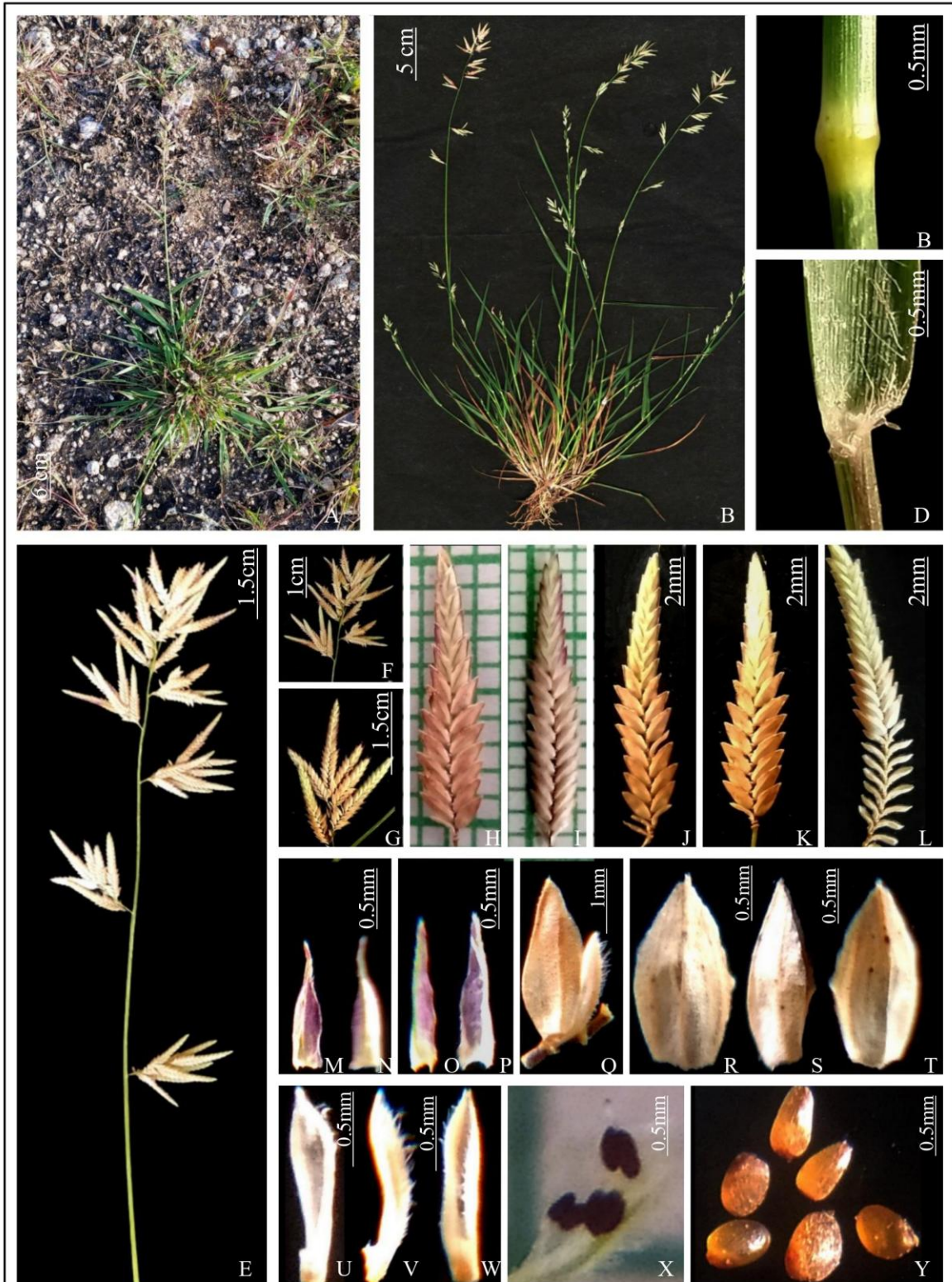


Fig. 8. *Eragrostis cumingii* Steud.: A. Habitat; B. Habit; C. Node; D. Ligular area; E. Inflorescence; F-G. Spikelets in bunches; H-K. Spikelets; L. Persistent palea on rachilla nodes; M-N. Lower glume; O-P. Upper glume; Q. Floret; R-T. Lemma; U-W. Palea; X. Stamens; Y. Caryopses.

Specimens examined: Adilabad District: Mawala Park, *J. Swamy* 4356 (BSID);

Nizamabad District: Dichpally, *V. Jalander* 372 (TUH); Dichpally Mandal, Mittapally Village, *V. Jalander* 955 (TUH); Dichpally Mandal, Suddpally Village, *V. Jalander* 910 (TUH).

Notes: The shape of caryopsis is one of the most useful characteristics for the identification of *Eragrostis*, though an obvious range of variation exists within certain species complexes. The caryopses of the specimens involved in the present study are ellipsoid to oblongoid or suborbicular, somewhat different from the usual orbicular or ovoid caryopses of *E. cumingii*. However, other morphological and floral characteristics of the specimens are similar to that of *E. cumingii*. It is also to be mentioned that the ellipsoid and terete caryopses are recorded in the species in China and ovoid caryopses with acute to truncate base are recorded in Australian species. As *E. cumingii* is a

widespread, polymorphic species with a high range of variation which accounts for its extensive synonymy, the ellipsoid to oblongoid or suborbicular shapes of caryopses have been described in the paper as its variable characters [13].

9. *Eragrostis gangetica* (Roxb.) Steud., Syn. Pl. Glumac. 1: 266. 1854. *Poa gangetica* Roxb., Fl. Ind. 1: 341. 1820. *E. stenophylla* Hochst. ex Miq., Anal. Bot. Ind. 2: 27. 1

(Fig. 9)

Description: [10]

Flowering and fruiting: July-January.

Habitat: Common along margins of ponds and in paddy fields.

Distribution: TELANGANA: Adilabad, Hyderabad, Karimnagar, Khammam, Medak, Nizamabad, and Warangal districts; INDIA: Almost throughout.

Specimens examined: Adilabad District: Sathnepalle, *G. Obulesu* & *P. V. Prasanna* 4222 (SKU); Sarvaipet, *G. Obulesu* 4503 (SKU); Satnella, *G. Obulesu* & *P.V.*



Fig. 9. *Eragrostis gangetica* (Roxb.) Steud.: A. Habitat; B. Habit; C. Node; D. Ligular area; E-F. Inflorescence; G. Part of inflorescence; H-N. Spikelets; O-P. Lower glume; Q-R. Upper glume; S. Floret; T-V. Lemma; W-Y. Palea; Z. Caryopses.

Prasanna 4222(SKU); Gupalapatnam, G. *Obulesu* 4396 (SKU); **Hyderabad District:** Hyderabad, *M.R.Suxena* 248 (DD); Hyderabad, *M. Venkata Ramana* 02155 (HY); **Karimnagar District:** Aklasapur RF, *G.V. Subbarao* 22511 (CAL, MH); **Khammam District:** Kinnerasani Wildlife Sanctuary, Kichhenapally North, *J. Swamy* 10811 (BSID); **Medak District:** Choutkoor, *T. Pullaiah & M.S. Gayatri* 11948; Pegarikutta, on the way to Narsapur, *K.M. Sebastine* 6655 (MH); Pocharam tank, *T. Pullaiah & M.S. Gayatri* 12042 (SKU); Pocharam Wildlife Sanctuary, Mustapur beat, *J. Swamy* 0767 (HY); **Nizamabad District:** Mudheli RF, *B. Ravi Prasad Rao & C. Prabhakar Raju* 7206 (SKU); Velutla RF, *B. Ravi Prasad Rao* 9525; Yedapally, *V. Jalander* 047 (TUH); **Warangal District:** Hanamkonda, *C. Sudhakar Reddy* 931 (KUW).

Note: It is a highly variable species in terms of spikelets length, width and colour and also often confused with *E. atrovirens* and *E.*

nutans but distinct from them by having slender culms with effuse panicle, smaller spikelets, distantly arranged florets on rachilla and ovoid to ellipsoid caryopses [10].

10. *Eragrostis japonica* (Thunb.) Trin. in Mem. Acad. Imp. Sci. St.-Petersbourg, Ser. 6, Sci. Math. 1: 405. 1830. *Poa japonica* Thunb., Fl. Jap.: 51. 1784. *E. interrupta* sensu Stapf in Hook.f., Fl. Brit. India 7: 316. 1896 incl. vars., non (R.Br.) P. Beauv. 1812. *E. diarrhena* (Schult.) Steud., Syn. Pl. Glumac. 1: 266. 1854. *P. diarrhena* Schult., Mant. 2: 616. 1824. *Diandrochloa diarrhena* (Schult.) A.N. Henry in Bull. Bot. Surv. India 9: 290. 1968 (1967). *E. diplachnoides* Steud., Syn. Pl. Glumac. 1: 268. 1854. (Fig. 10)

Description: [10]

Flowering and fruiting: October-February.

Habitat: Common in moist localities, and as a weed in cultivated fields.

Distribution: TELANGANA: Adilabad, Khammam, Medak, and Nizamabad districts; INDIA: Almost throughout.

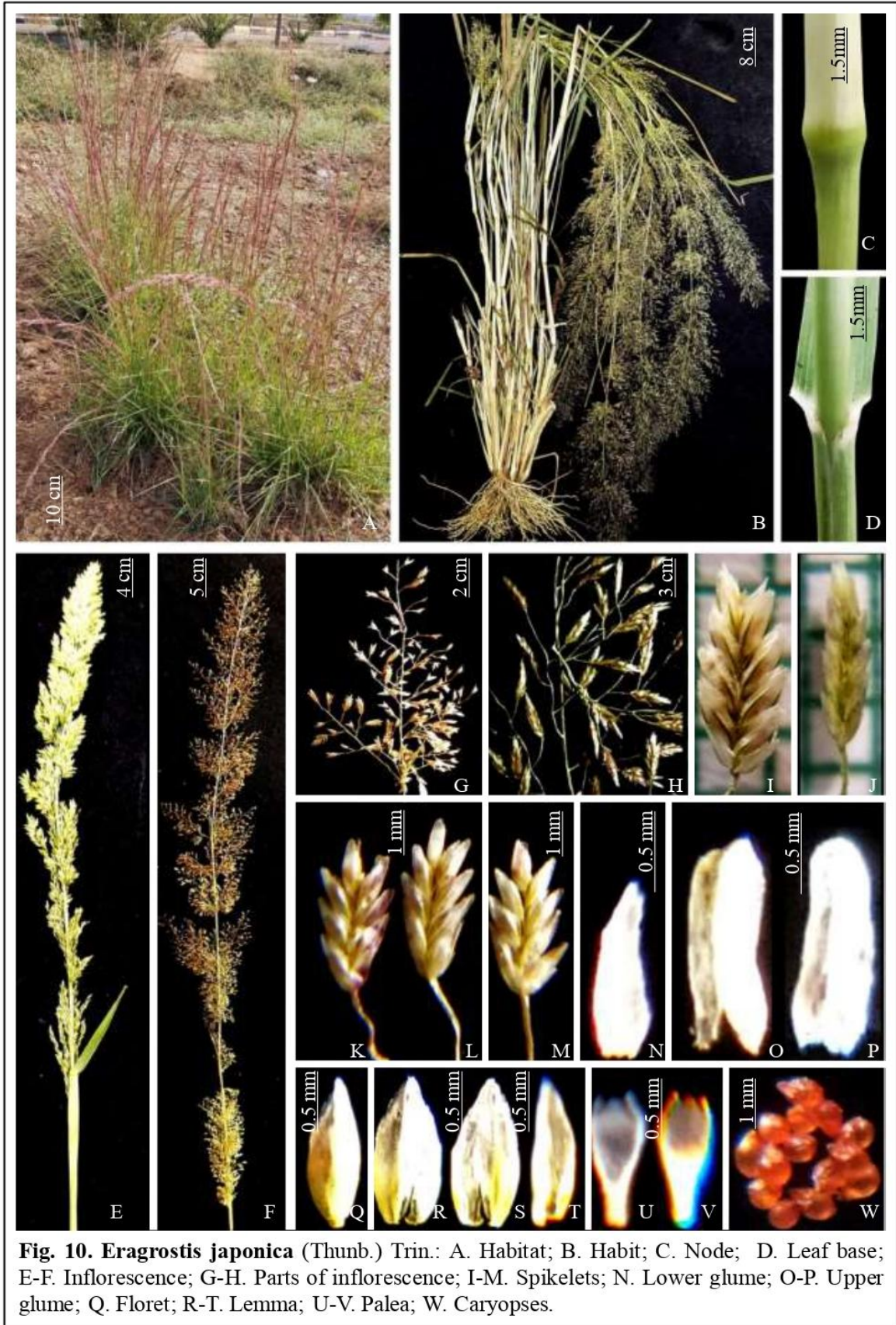


Fig. 10. *Eragrostis japonica* (Thunb.) Trin.: A. Habitat; B. Habit; C. Node; D. Leaf base; E-F. Inflorescence; G-H. Parts of inflorescence; I-M. Spikelets; N. Lower glume; O-P. Upper glume; Q. Floret; R-T. Lemma; U-V. Palea; W. Caryopses.

Specimens examined: Adilabad District:

Asifabad, Karagaon, *J. Swamy* 0051 (BSID);

Darigav, *G. Obulesu & P.V. Prasanna* 4570;

Nirmal Forest Division, Pembli - Range,

Yapaguda-Beat, *P.S. Annamma* 5403 (BSID);

Near the bank of Peddavagu, *G. Obulesu &*

D. Ali Moulali 5049; Near Pochera waterfalls,

G. Obulesu & D. Ali Moulali 5092 (SKU);

Sone, *T. Pullaiah & D. Ali Moulali* 4057;

Khammam District: Kinnerasani Wildlife

Sanctuary, Ananthogu, *J. Swamy* 9601;

Badrachalam Forest, *R. Chandrasekaran*

99033 (MH); Chintakunta West, *J. Swamy*

11859; Ratham Hutta Hills, *R.*

Chandrasekaran 99059 (MH); Sampathnagar,

J. Swamy 9534; Pocharam Wildlife

Sanctuary, Mustapur beat, *J. Swamy* 0768

(HY); Tekkulagudem, 06.04.1988, *N.*

Ramarao & T. Ravisankar 86105 (MH);

Medak District: Guntur lake, Chownapur, *R.*

Gopalan 106753 (MH); Medak, *R. Gopalan*

104156 (MH); Pocharam RF, *T. Pullaiah &*

M.S. Gayathri 12056; **Nizamabad District:**

Gandhari, T. Pullaiah & B. Ravi Prasad Rao

6347 (SKU); Sirikonda, *V. Jalander* 0173

(TUH).

Notes: The species is easily recognized by its

unique 3-lobed palea. Generally, the habit of

the species 20-200 cm but a recent collection

from Kinnerasani Wildlife Sanctuary,

Ananthogu beat

11. Eragrostis macilenta (A.Rich.) Steud.,

Syn. Pl. Glumac. 1: 268. 1854. *Poa macilenta*

A.Rich., Tent. Fl. Abyss. 2: 428. 1850.

(Fig. 11)

Description: [10]

Flowering and fruiting: October-August.

Habitat: Grows in drier areas.

Distribution: TELANGANA: Sangareddy

district; INDIA: Andhra Pradesh and Tamil

Nadu.

Specimen examined: Medak District:

Manjeera Wildlife Sanctuary, Pulkal, *L.*

Rasingam and *J. Swamy* 11250 (BSID).

12. Eragrostis maderaspatana Bor, Grasses

Burma, Ceylon, India Pakistan: 509. 1960.

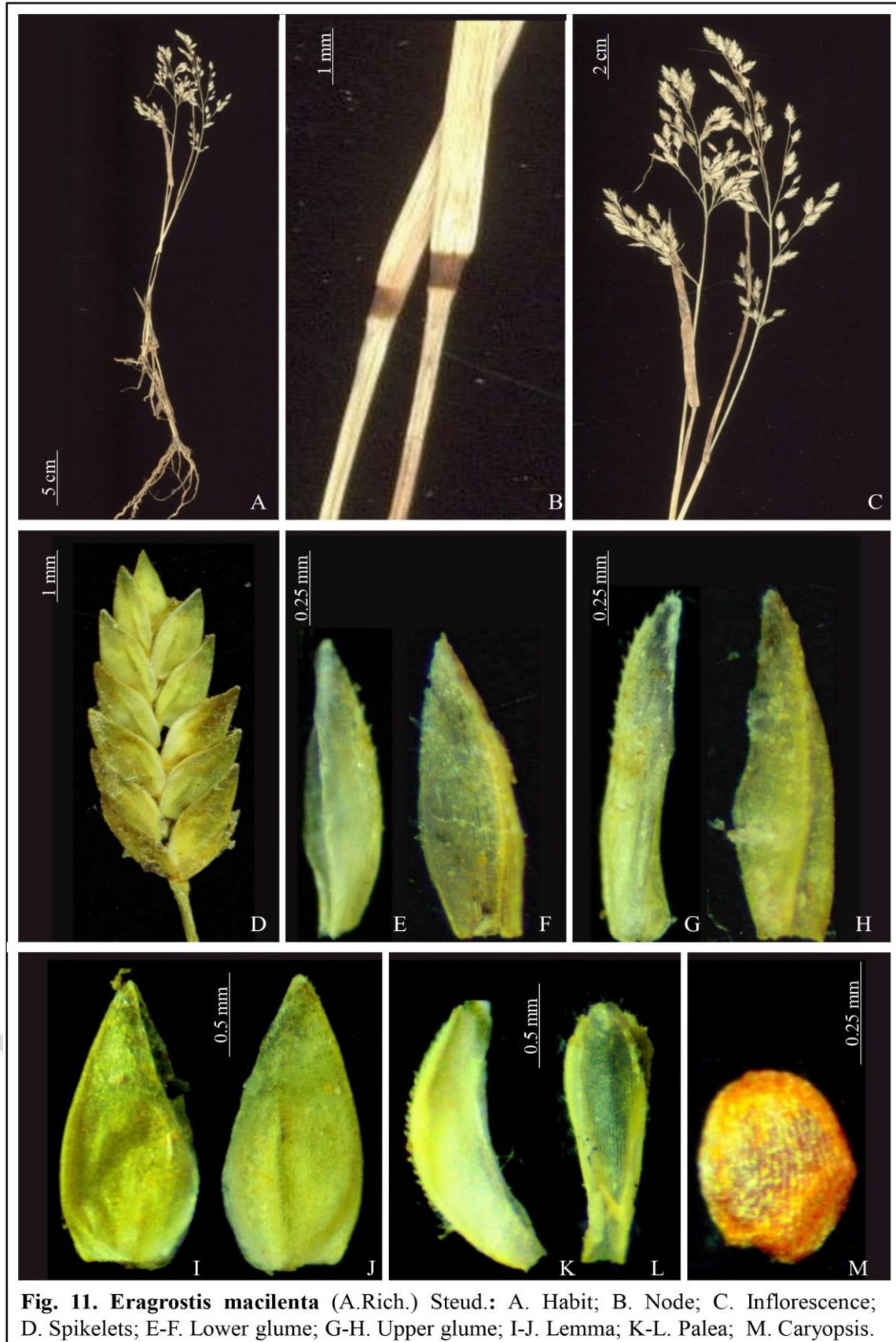


Fig. 11. *Eragrostis macilenta* (A.Rich.) Steud.: A. Habit; B. Node; C. Inflorescence; D. Spikelets; E-F. Lower glume; G-H. Upper glume; I-J. Lemma; K-L. Palea; M. Caryopsis.

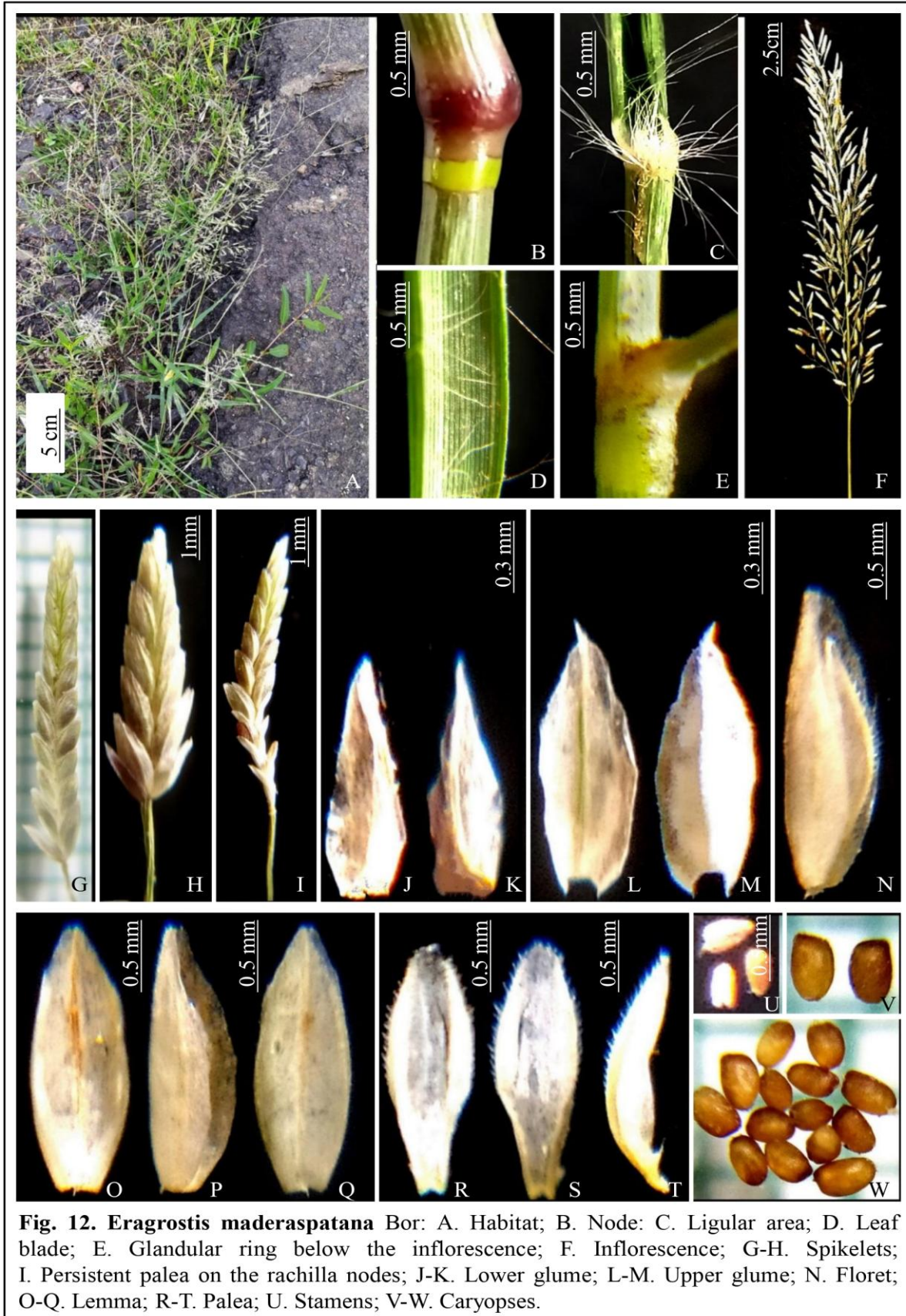


Fig. 12. *Eragrostis maderaspatana* Bor: A. Habitat; B. Node; C. Ligular area; D. Leaf blade; E. Glandular ring below the inflorescence; F. Inflorescence; G-H. Spikelets; I. Persistent palea on the rachilla nodes; J-K. Lower glume; L-M. Upper glume; N. Floret; O-Q. Lemma; R-T. Palea; U. Stamens; V-W. Caryopses.

“*Eragrostis willdenowiana* Nees [in Wight, Cat. Ind. Pl.: n. 1779] ex Stapf in Hook.f., Fl. Brit. India 7: 322. 1896, non Nees ex Hook. & Arn., Bot. Beechey Voy.: 252. 1832 & in Nov. Act. Nat. Cur. 19: Suppl. 1. 205. 1843”.

[24] (Fig.12)

Description: [10]

Flowering and fruiting: August-October.

Habitat: Common along the roadsides and wastelands.

Distribution: INDIA: Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and now from Telangana, Endemic.

Specimens examined: India, Telangana,

Adilabad District: Echoda Mandal, near Gubba Village, V. *Jalander* 494 (TUH);

Nizamabad District: Dichpally (Mandal), V. *Jalander* 885 (TUH).

Note: It is reported here as an addition to the flora of Telangana. It is similar to *E. minor* in having glandular bodies but it differs from *E. minor* by the ventrally flattened and truncate caryopses.

13. Eragrostis minor Host, Icon. Descr. Gram. Austriac. 4: 15. 1809. *E. poaeoides* P.Beauv., Ess. Agrostogr.: 162. 1812.(Fig. 13)

Description: [10]

Flowering and fruiting: September-February.

Habitat: Common weed in cultivated fields and moist places.

Distribution: TELANGANA: Adilabad, Hyderabad, Medak, Nalgonda, and Nizamabad districts; INDIA: Almost throughout.

Specimens examined: Adilabad District: Bellampalli, P.V. *Prasanna* 9445 (SKU);

Hyderabad District: Hyderabad, M. *Venkata Ramana* 02156 (HY); Golkonda, M.R.*Suxena* 303 (DD); **Medak District:** Pocharam RF, T.

Pullaiah & M.S.*Gayathri* 12062 (SKU); Pocharam Wildlife Sanctuary, Dantepally beat, J. *Swamy* 0607 (HY). **Nalgonda**

District: Nagarjunakonda Valley, K.*Tothathri* 9687 (CAL); **Nizamabad District:** Dichpally, V. *Jalander* 363 (TUH).

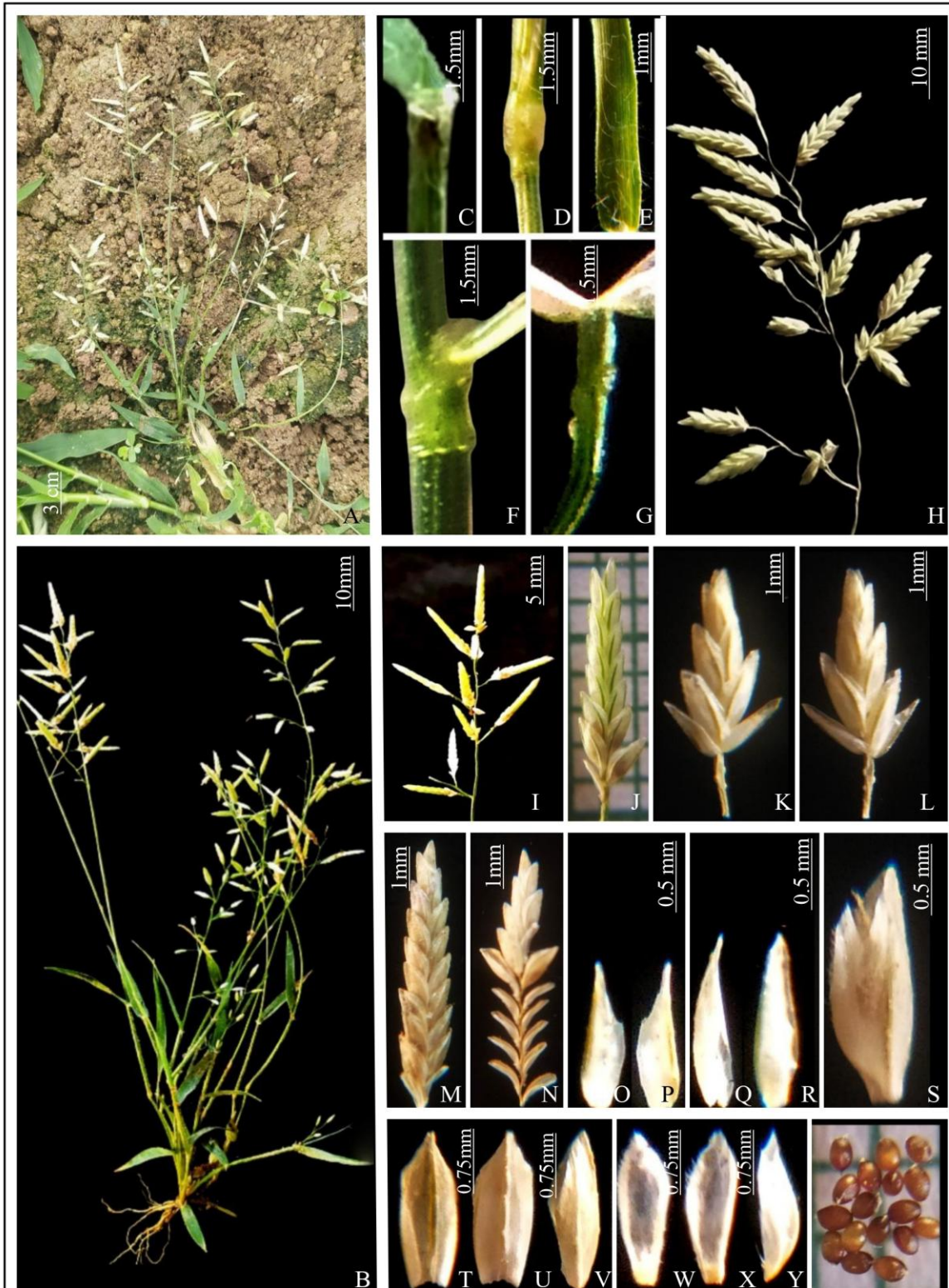


Fig. 13. *Eragrostis minor* Host: A. Habitat; B. Habit; C. Ligular area; D. Node; E. Glands on leaf margins; F. Glands below the inflorescence; G. Glands on Pedicel; H. Inflorescence; I. Part of inflorescence; J-M. Spikelets; N. Persistent palea on rachilla nodes; O-P. Lower glume; Q-R. Upper glume; S. Floret; T-V. Lemma; W-Y. Palea; Z. Caryopses.

14. *Eragrostis nigra* Nees ex Steud., Syn. Pl. Glumac. 1: 267. 1854. *Eragrostis atropurpurea* Hochst. ex Steud., Syn. Pl. Glumac. 1: 267. 1854. (Fig. 14)

Description: [10]

Flowering and fruiting: January–November.

Distribution: TELANGANA: Bhadradi Kothagudem District; INDIA: Almost throughout.

Habitat: Occasionally on roadsides and stream banks

Specimens examined: **Bhadradi Kothagudem District:** Allapally Mandal, Ananthogu Village, J. Swamy & V. Jalander 446 (TUH).

Note: It is reported here as an addition to the flora of Telangana.

15. *Eragrostis nilgiriensis* Vivek, G.V.S. Murthy & V.J.Nair, Nordic J. Bot. 31(6): 700. 2013; Jalander et al., Nelumbo 64 (2): 265.2022. (Fig. 15)

Description: [10]

Flowering and fruiting: September–November.

Habitat: Common along the forest fringes, roadsides, and wastelands in black soils.

Distribution: INDIA: Tamil Nadu and Telangana. Endemic.

Specimens examined: INDIA: Telangana, Kamareddy District, Tadwai Village, V. Jalander 790 (TUH).

Note: Recently Jalander et al. [15] reported this species as additions to the flora of Telangana.

16. *Eragrostis nutans* (Retz.) Nees ex Steud., Nomencl. Bot. ed. 2. 1: 563. 1840. (Fig. 16)

Description: [10]

Flowering and fruiting: August - December.

Habitat: Occasional on the bunds of cultivated fields.

Distribution: TELANGANA: Adilabad, Hyderabad, Medak and Nizamabad districts; INDIA: Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh,

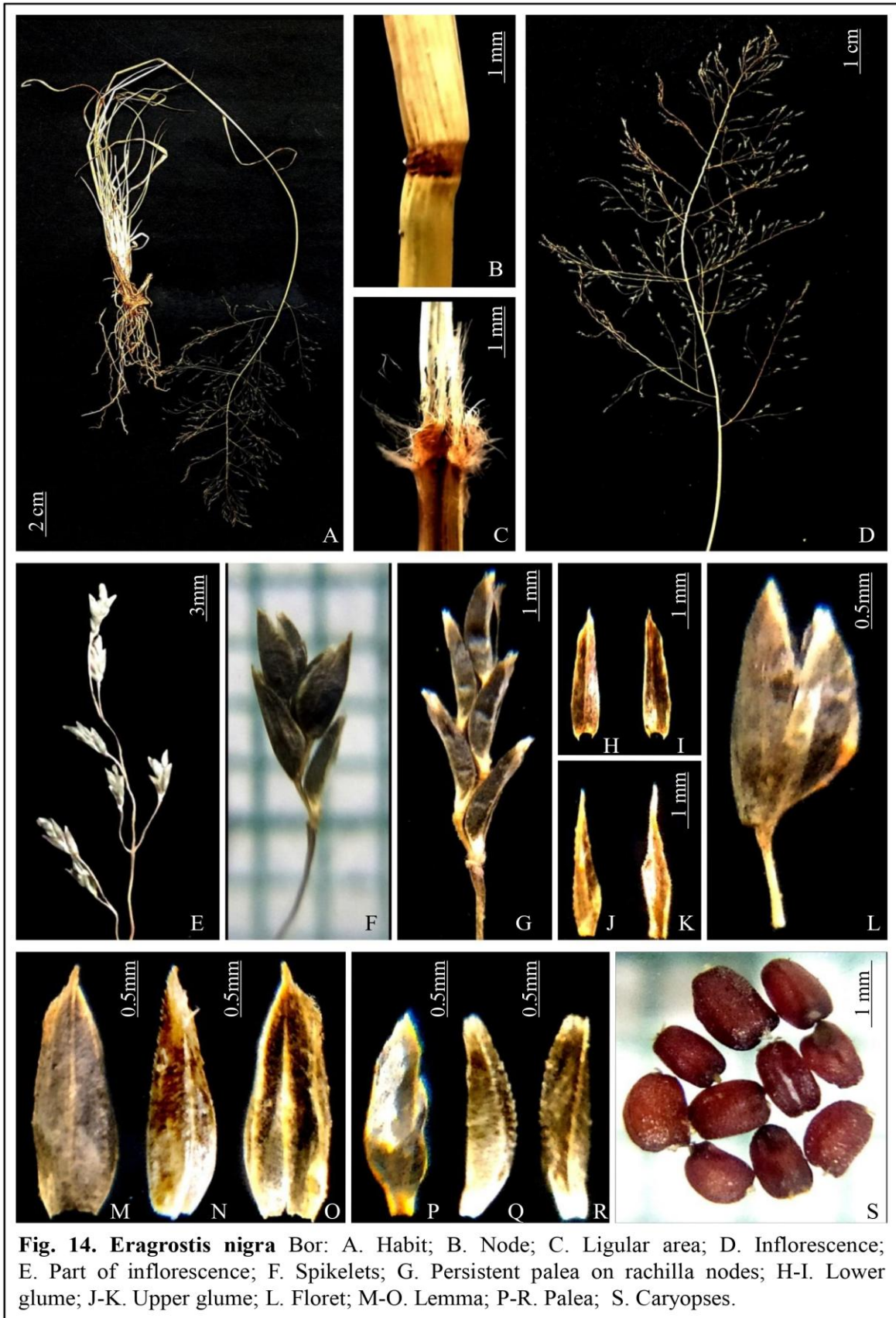


Fig. 14. *Eragrostis nigra* Bor: A. Habit; B. Node; C. Ligular area; D. Inflorescence; E. Part of inflorescence; F. Spikelets; G. Persistent palea on rachilla nodes; H-I. Lower glume; J-K. Upper glume; L. Floret; M-O. Lemma; P-R. Palea; S. Caryopses.

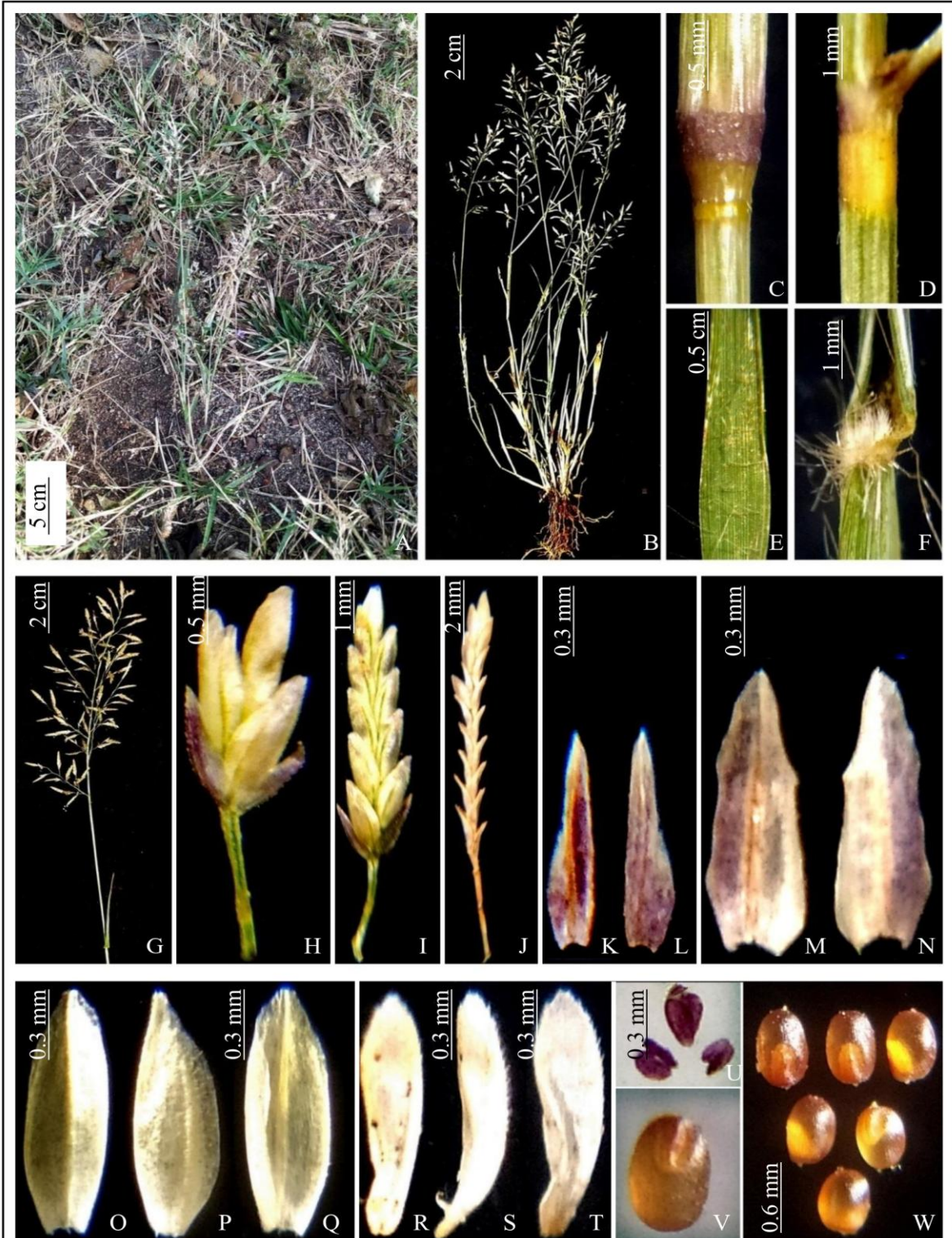


Fig. 15. *Eragrostis nilgiriensis* Vivek, G.V.S. Murthy & V.J.Nair: A. Habitat; B. Habit; C. Glandular ring below the node; D. Glandular ring below the inflorescence; E. Hairs on leaf surface; F. Ligular area; G. Inflorescence; H-I. Spikelets; J. Persistent palea on the rachilla nodes; K-L. Lower glume; M-N. Upper glume; O-Q. Lemma; R-T. Palea; U. Stamens; V-W. Caryopses.



Fig. 16. *Eragrostis nutans* (Retz.) Nees ex Steud.: A. Habitat; B. Habit; C. Node; D. Ligular area; E. Inflorescence; F. Part of inflorescence; G-M. Spikelets; N-O. Lower glume; P-Q. Upper glume; R. Floret; S-U. Lemma; V-X. Palea; Y. Pistil; Z. Caryopses.

Maharashtra, Odisha, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Specimens examined: Adilabad District:

Kawal Tiger Reserve, Indhanpalli Range, Narlapur Beat, *P.S. Annamma* 3947 (BSID);

Kawal Tiger Reserve, Jannaram Forest Division, Thadlapet-Range, Mohammadabad

Beat, *P.S. Annamma* 3950 (BSID);

Hyderabad District: Hyderabad, *M.R.*

Suxena 228 (DD); **Medak District:** Narsapur,

K.M. Sebastine 6655 (CAL); **Nizamabad**

District: Alisagar, Yedapally Mandal, *V.*

Jalander 0883 (TUH); Padkkal Village,

Jakranpally mandal, *V. Jalander* 0227 (TUH).

17. Eragrostis papposa (Roem. & Schult.)

Duf. ex Steud., *Nomencl. Bot.*, ed. 2(1): 564.

1840. *Megastachya papposa* Roem. &

Schult., *Syst. Veg.*, ed. 15 bis 2: 585. 1817.

Poa papposa Duf. ex Roem. & Schult., *Syst.*

Veg., ed. 15 bis 2: 585. 1817, pro syn.

(Fig. 17)

Description: [10]

Flowering and fruiting: August-November.

Habitat: Common along the forest fringes and roadsides.

Distribution: TELANGANA: Nizamabad;

INDIA: Andhra Pradesh, Meghalaya, Punjab,

Rajasthan, Sikkim, Uttarakhand, and West

Bengal.

Specimens examined: Nizamabad District:

Dichpally Mandal and Village, *V. Jalander*,

863 (TUH); **Rangareddy District:**

Manasahills, Rajendranagar, *op. lit.* Nagaraju

and Prasanna [16].

Note: Recently reported by Nagaraju and

Prasanna [16] as addition to the flora of

Telangana.

18. Eragrostis pilosa (L.) P.Beauv., Ess.

Agrostogr.: 71, 162, 175. 1812. *Poa pilosa* L.,

Sp. Pl. 1: 68. 1753. (Fig. 18)

Description: [10]

Flowering and fruiting: August-February.

Habitat: Common weed in cultivated fields and marshy places.

Distribution: TELANGANA: Adilabad,

Hyderabad, Karimnagar, Khammam, Medak,



Fig. 17. *Eragrostis papposa* (Roem. & Schult.) Duf. ex Steud.: A. Habit; B. Node; C. Ligular area; D. Leaf sheath; E. Portion of leaf blade; F-G. Gland below the inflorescence; H. Inflorescence; I-L. Spikelets; M-N. Persistent palea on rachilla node; O-P. Lower glume; Q-R. Upper glume; S. Floret; T-V. Lemma; X-Y. Palea; Z. Stamens; A1. Pistil; B1. Caryopses.

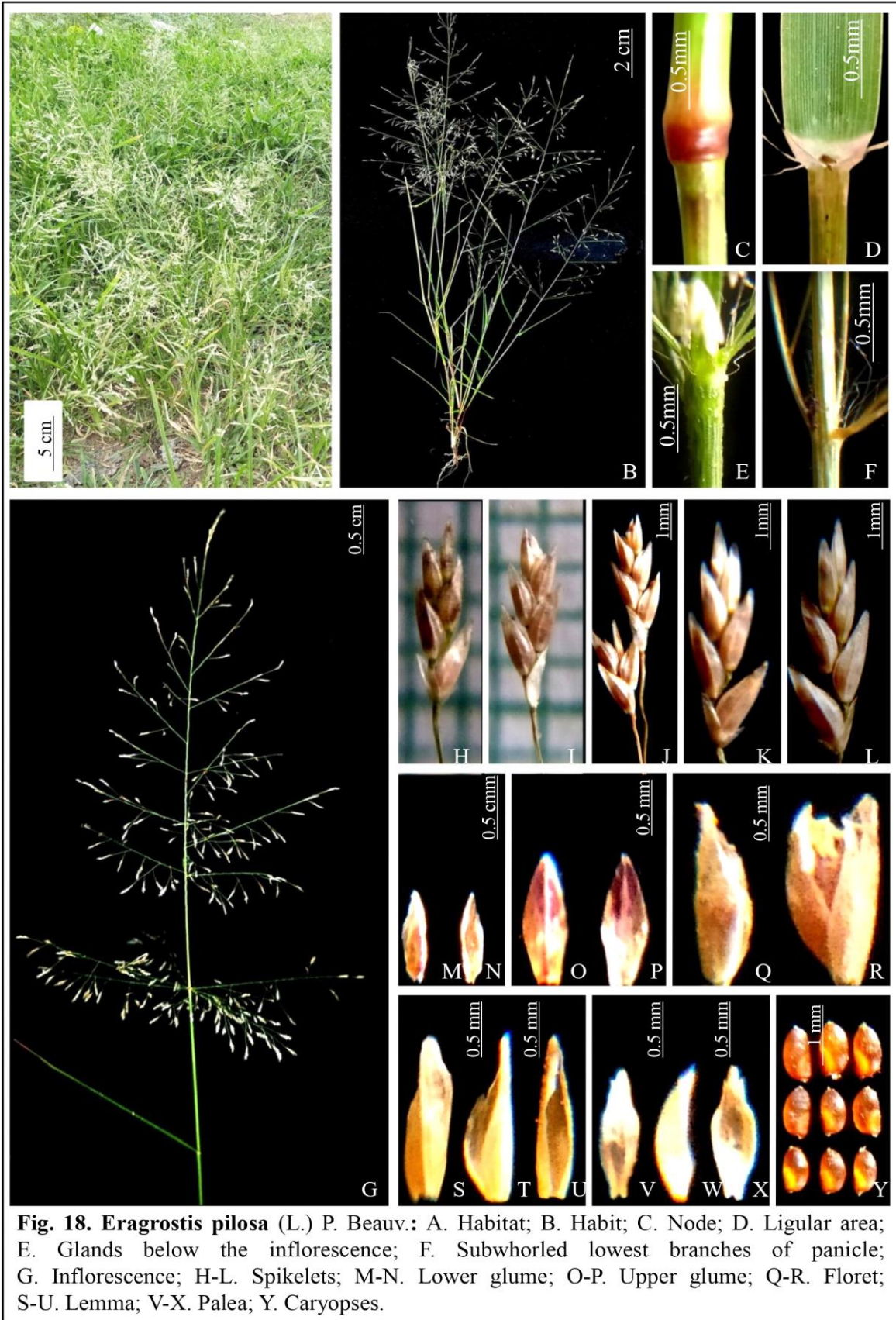


Fig. 18. *Eragrostis pilosa* (L.) P. Beauv.: A. Habitat; B. Habit; C. Node; D. Ligular area; E. Glands below the inflorescence; F. Subwhorled lowest branches of panicle; G. Inflorescence; H-L. Spikelets; M-N. Lower glume; O-P. Upper glume; Q-R. Floret; S-U. Lemma; V-X. Palea; Y. Caryopses.

Nizamabad, and Warangal districts; INDIA:
Almost throughout.

Specimens examined: Adilabad District:

Bheemaram Reserve Forest, *T. Pullaiah* & *G.*

Obulesu 5465 (SKU); **Hyderabad District:**

Hyderabad, *M. Venkata Ramana* 02157 (HY);

Uppalapalli, *M.R. Suxena* 304 (DD);

Karimnagar District: Mahadevpur, *M.R.*

Rajendra Prasad 656 (MH); **Khammam**

District: Kinnerasani Wildlife Sanctuary,

Chintalagumpu West, *J. Swamy* 10893

(BSID); **Medak District:** Choutkoor, *T.*

Pullaiah & *M.S.Gayathri* 11949 (SKU);

Narsapur, *T. Pullaiah* and *M.S.Gayathri*

12018 (SKU); **Nizamabad District:**

Nadipally, *V. Jalander* 063 (TUH);

Warangal District: Pakhal Teak Nursery,

K.M. Sebastine 13196 (CAL & MH).

Note: The species easily recognized in the field by its pilose hairs on the lower node of panicles.

19. *Eragrostis riparia* (Willd.) Nees, *Agrost.*

Bras.: 512. 1829. *Poa riparia* Willd. in *Ges.*

Naturf. Freunde Berlin Neue Schriften 4: 185.

1803. *E. tenella* (L.) P.Beauv. ex Roem. &

Schult. var. *riparia* (Willd.) Stapf in Hook.f.,

Fl. Brit. India 7: 315. 1896. (Fig. 19)

Description: [10]

Flowering and fruiting: Almost throughout the year.

Habitat: Grows in red sandy soils, in drier areas.

Distribution: TELANGANA: Adilabad,

Nalgonda and Nizamabad districts; INDIA:

Andhra Pradesh, Assam, Bihar, Karnataka,

Kerala, Madhya Pradesh, Maharashtra,

Odisha, Rajasthan, Sikkim, Tamil Nadu, Uttar

Pradesh and West Bengal.

Specimens examined: Adilabad District:

Asifabad, Karagaon, *J. Swamy* 0052 (BSID);

Nalgonda District: Krishna River bank, *K.M.*

Sebastine 9819 (CAL); **Nizamabad District:**

Dichpally, *V. Jalander* 452 (TUH).

20. *Eragrostis tenella* (L.) P. Beauv. ex

Roem. & Schult., *Syst. Veg.*, ed. 2: 576. 1817.

Poa tenella L., *Sp. Pl.* 69. 1753. *P. amabilis*

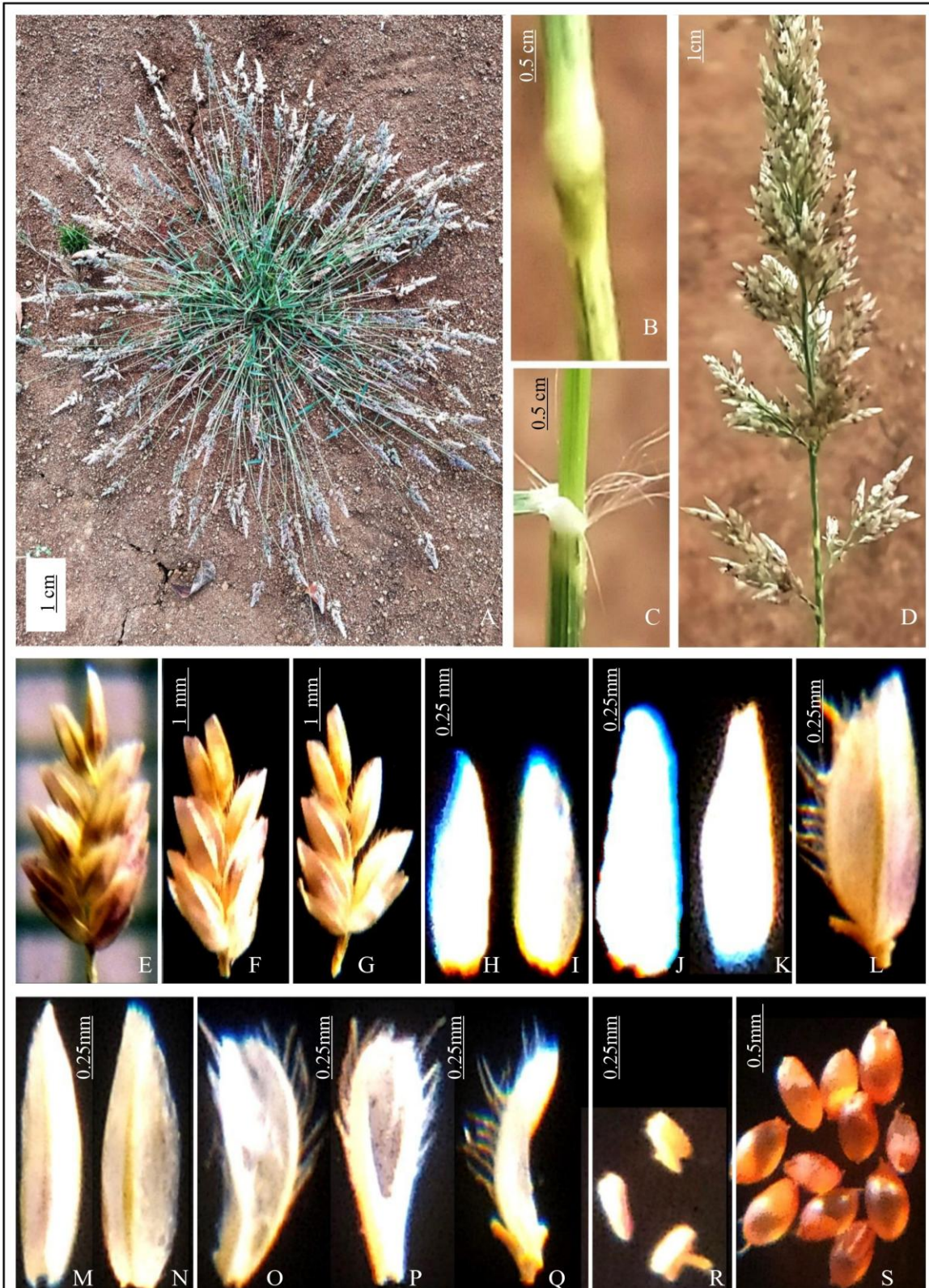


Fig. 19. *Eragrostis riparia* (Willd.) Nees: A. Habitat; B. Node; C. Leaf base; D. Inflorescence; E-G. Spikelets; H-I. Lower glume; J-K. Upper glume; L. Floret; M-N. Lemma; O-Q. Palea; R. Stamens; S. Caryopses.

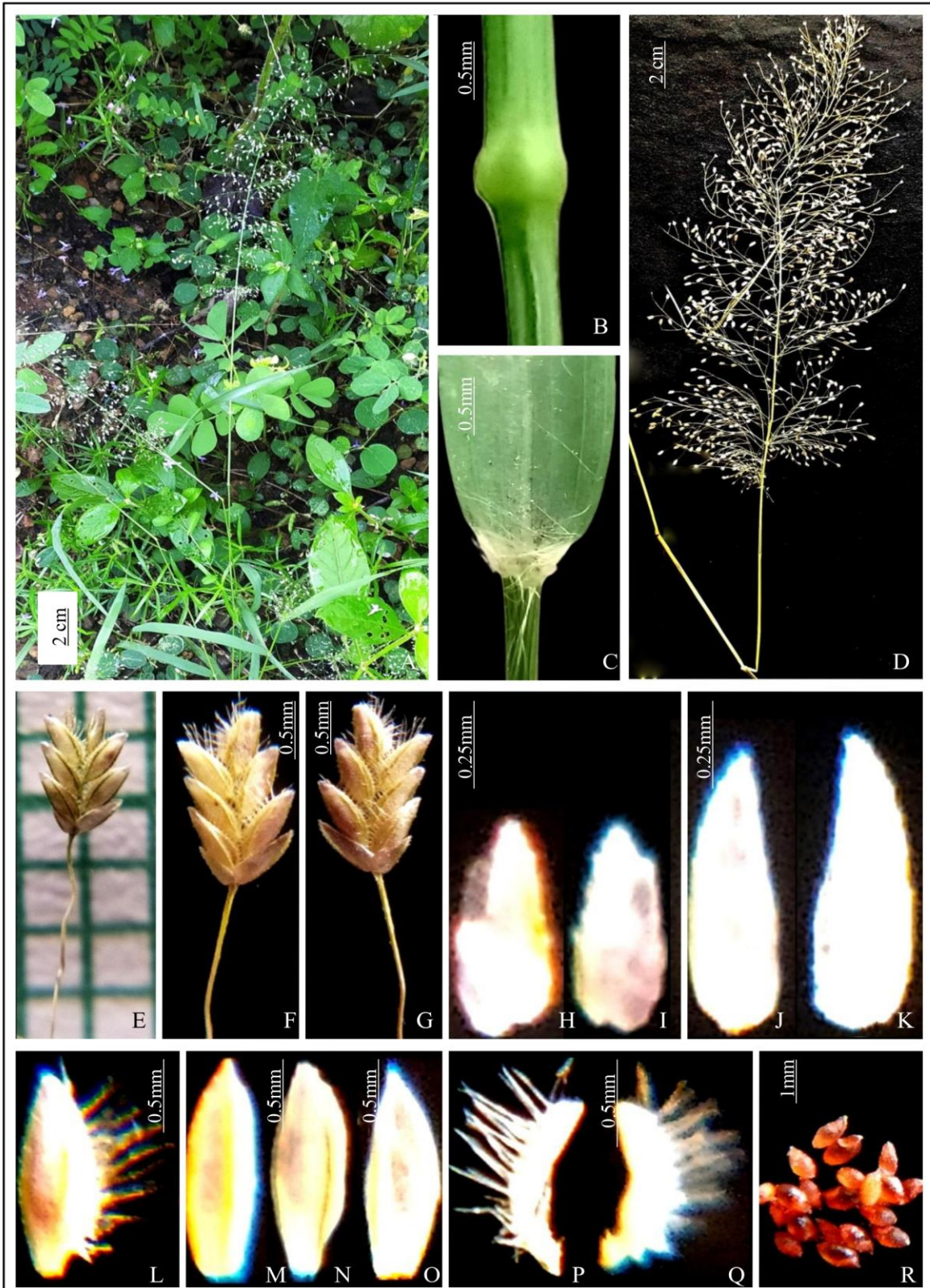


Fig. 20. *Eragrostis tenella* (L.) P. Beauv. ex Roem. & Schult.: A. Habitat; B. Node; C. Ligular area; D. Inflorescence; E-G. Spikelets; H-I. Lower glume; J-K. Upper glume; L. Floret; M-O. Lemma; P-Q. Palea; R. Caryopses.

L., Sp. Pl.: 68. 1753. *E. amabilis* (L.) Wight & Arn., Cat. Indian Pl. 2: 105, n. 1777. 1834. *P. plumosa* Retz., Observ. Bot. 4: 20. 1786–1787. *E. plumosa* (Retz.) Link, Hort. Berol. 1: 192. 1827. *E. tenella* (L.) P. Beauv. var. *plumosa* (Retz.) Stapf in Hook.f., Fl. Brit. India 7: 315. 1896. *E. tenella* (L.) P. Beauv. var. *breviculmis* Stapf in Hook.f., Fl. Brit. India 7: 316. 1896. (Fig. 20)

Description: [10]

Flowering and fruiting: July - December.

Habitat: Occasional in cultivated fields, roadsides, bunds of paddy fields.

Distribution: TELANGANA: Hyderabad, Karimnagar, Khammam, Medak, Nalgonda, Nizamabad, and Warangal districts; INDIA: Almost throughout; WORLD: Tropical parts of the world.

Specimens examined: **Hyderabad District:** Adarshnagar, V. Sampath Kumar & K. Chandra Sekhar 398 (BSID); **Karimnagar District:** Aklasapur, G.V. Subbarao 22491 (MH); **Khammam District:** Kinnerasani

Wildlife Sanctuary, Jinnelagudem south, J. Swamy 9576 (BSID); Karepally, R. Rajan 105970 (MH); Kinnerasani Wildlife Sanctuary, Maddelagudem, J. Swamy 10709 (BSID); Kinnerasani Wildlife Sanctuary, Mallepallythogu, J. Swamy 10792 (BSID); **Medak District:** Medak, R. Gopalan 104161(MH); **Nalgonda District:** Gollapally, A. Baleshwar Reddy 001331 (BSID); Vijayapuri, K.M. Sebastine 9847 (CAL & MH); **Nizamabad District:** Amruthapur Village, Dichpally Mandal, V. Jalander 0033 (TUH); **Warangal District:** Cherial, C. Sudhakar Reddy 288 (KUW); Pakhal RF, K.M. Sebastine 11667 (CAL & MH); Subedari, R.K. Premanath 105235 (MH).

Note: It is a highly variable species with panicle of dissimilar appearance. It is allied to *E. viscosa* by its inflorescence but it can be distinguished by smaller spikelets, longer and bulbous based cilia on palea keels [10].

21. Eragrostis tenuifolia (A.Rich.) Hochst. ex Steud., Syn. Pl. Glumac. 1: 268. 1854. *Poa*

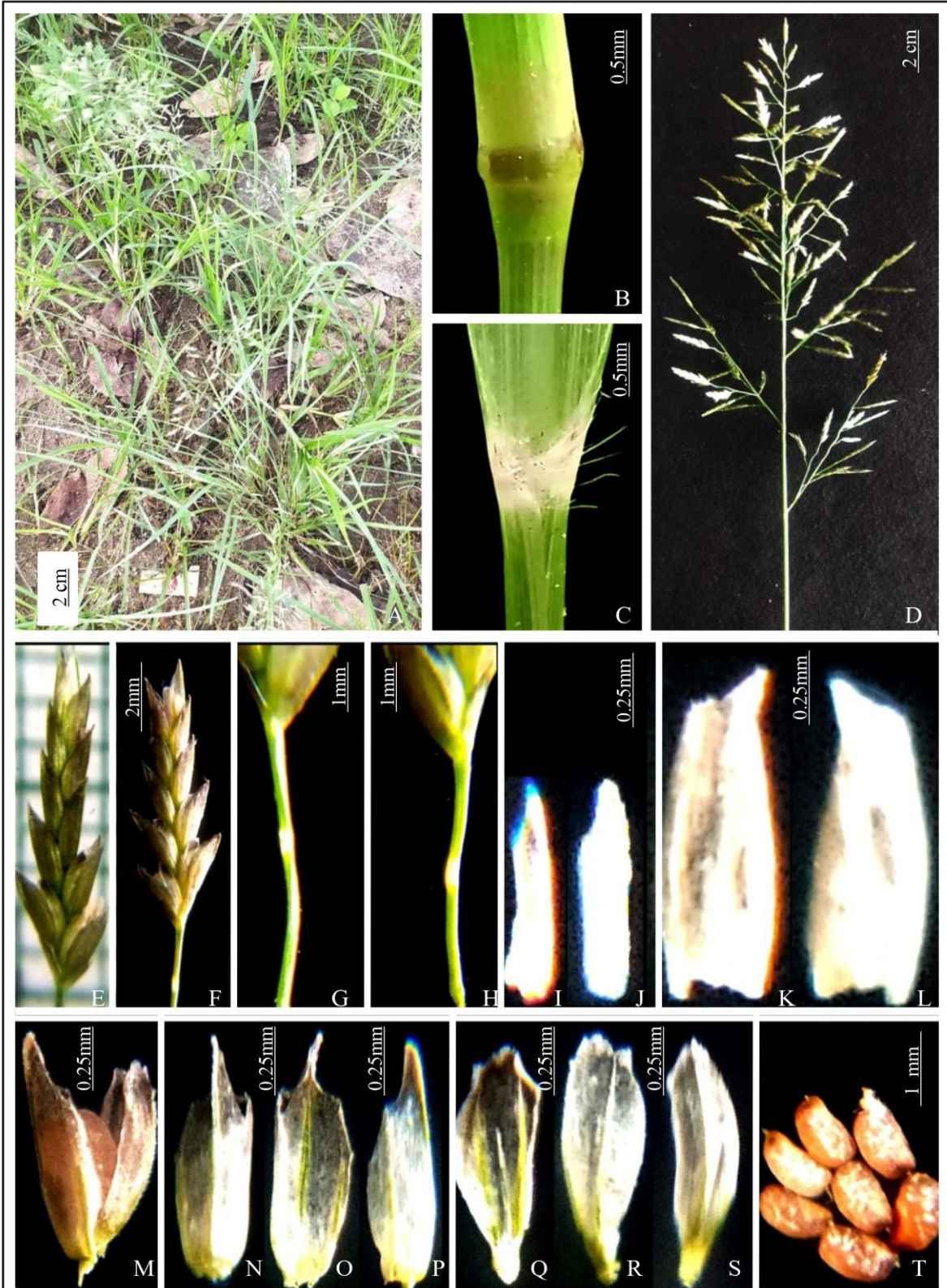


Fig. 21. *Eragrostis tenuifolia* (A.Rich.) Hochst. ex Steud.: A. Habitat; B. Node; C. Ligular area; D. Inflorescence; E-F. Spikelets; G-H. Glands on pedicel; I-J. Lower glume; K-L. Upper glume; M. Floret; N-P. Lemma; Q-S. Palea; T. Caryopses.

tenuifolia A.Rich., Tent. Fl. Abyss. 2: 425. 1850. (Fig. 21)

Description: [10]

Flowering and fruiting: July-December.

Habitat: Usually grows in open dry places, on roadsides.

Distribution: TELANGANA: Adilabad, Medak, Hyderabad, Kamareddy, Nizamabad and Warangal districts; INDIA: Andhra Pradesh, Bihar, Daman & Diu, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

Specimens examined: Adilabad District: Ankusapuram, *G. Obulesu* 4349 (SKU);

Medak District: Ramayampet, *B. Ravi Prasad Rao & C. Prabhakar* 11520 (SKU);

Hyderabad District: Hyderabad, *M. Venkata Ramana* 02159 (HY); **Kamareddy District:**

Daggi Village, Sadasivnagar mandal, *V. Jalander* 960 (TUH); **Nizamabad District:**

Amruthapur, *V. Jalander* 0384 (TUH);

Warangal District: Hanamkonda, *C. Sudhakar Reddy* 1016 (KUW).

Note: It is very close to *E. ferruginea* by its habit appearance but it can be identified by its short lemmas and obscure lateral nerves on its lemmas whereas later species has conspicuous lateral nerves lemmas.

22. Eragrostis tremula (Lam.) Hochst. ex Steud., Syn. Pl. Glumac. 1: 269. 1854. *Poa tremula* Lam., Tabl. Encycl. 1: 185. 1791. (Fig. 22)

Description: [10]

Flowering and fruiting: August-October.

Habitat: In field margins, wetlands, and roadsides.

Distribution: TELANGANA: Hyderabad, Khammam, Mahabubnagar, Medak, Nirmal and Nizamabad districts; INDIA: Almost throughout.

Specimens examined: Hyderabad District: Hyderabad, *M. Venkata Ramana* 02160 (HY);

Khammam District: Kinnerasani Wildlife Sanctaury, Kichhenapally North, *J. Swamy*

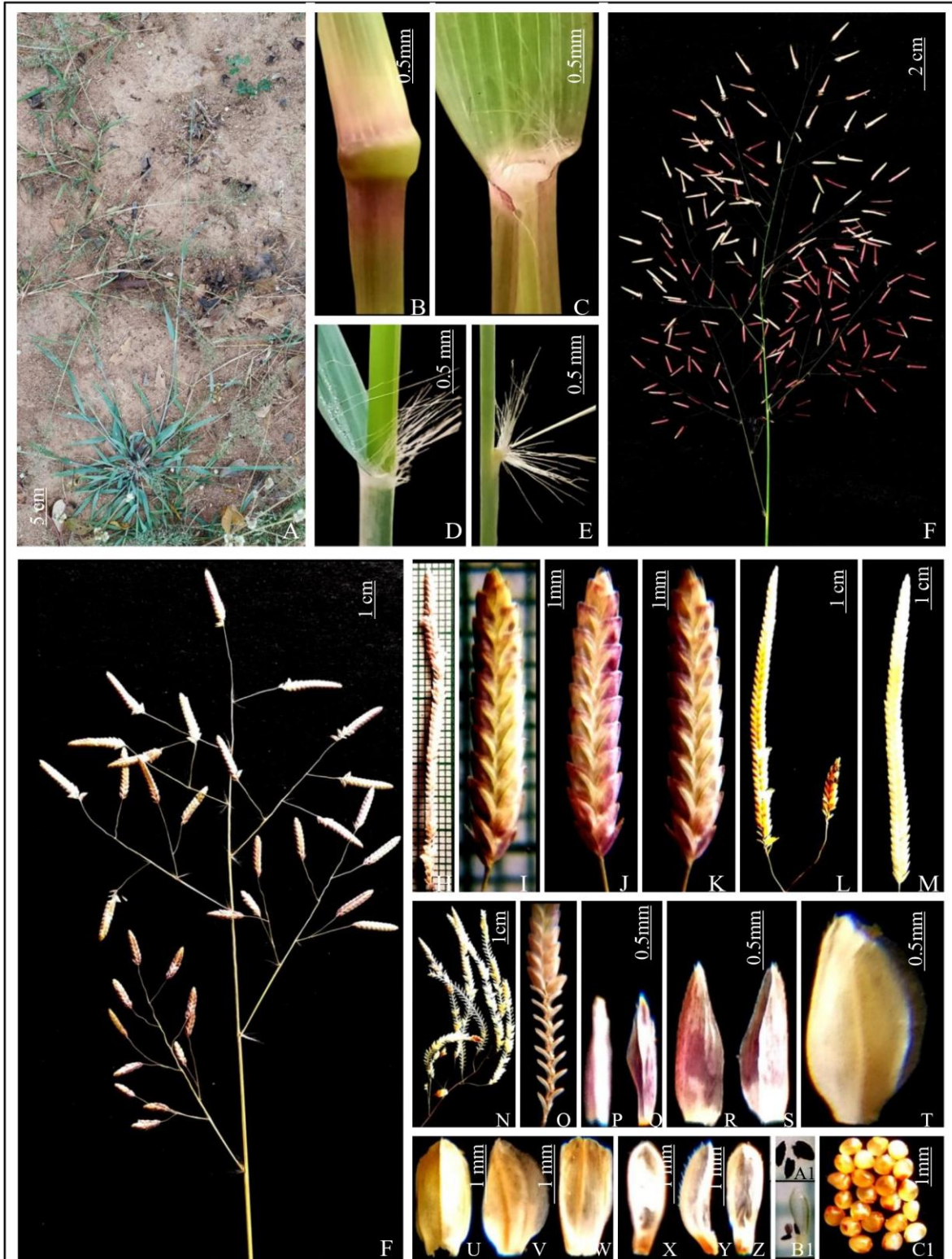


Fig. 22. *Eragrostis tremula* (Lam.) Hochst. ex Steud.: A. Habitat; B. Node; C. Ligular area; D. Leaf base; E. Ciliate axil of panicle branch; F. Inflorescence; G. Part of inflorescence; H-M. Spikelets; N-O. Persistent paleas on rachilla nodes; P-Q. Lower glume; R-S. Upper glume; T. Floret; U-W. Lemma; X-Y. Palea; A1-B1. Stamens; C1. Caryopses.

9590; Kinnerasani Wildlife Sanctaury, Maddelagudem, *J. Swamy* 10710; Kinnerasani Wildlife Sanctaury, Pentlam, *J. Swamy* 11925; **Mahabubnagar District:** Guddae Gunda, Koilkonda, *S.R. Srinivasan* 110797 (MH); **Medak District:** Pocharam RF, *T. Pullaiah & M.S.Gayathri* 12034; **Nirmal District:** Tanoor Mandal, Bhosi Village, *V. Jalander* 944 (TUH); **Nizamabad District:** Dichpally Mandal and Village, *V. Jalander* 186 (TUH).

Note: It can be easily recognized by its up to 5 cm long spikelets and with up to 70 florets in each spikelet.

23. Eragrostis unioides (Retz.) Nees ex Steud., Syn. Pl. Glumac. 1: 264. 1854. *Poa unioides* Retz., Observ. Bot. 5: 19. 1789. *P. rubens* Lam., Tabl. Encycl. 1: 184, t. 45, f. 2. 1791. *E. rubens* (Lam.) Hochst. ex Miq., Nieuwe Verh. Eerste Kl. Kon. Ned. Inst. Wetensch. Amsterdam ser. 3, 4: 38. 1851. (Fig. 23)

Description: [10]

Flowering and fruiting: August-December.

Habitat: Common in paddy fields, along margins of ponds.

Distribution: TELANGANA: Adilabad, Hyderabad, Kamareddy, Khammam, Mahabubnagar, Medak, Nizamabad, and Warangal districts; INDIA: Almost throughout.

Specimens examined: Adilabad District: Alampalle, *T. Pullaiah & P.V. Prasanna* 4170 (SKU); Ankusapuram, *G. Obulesu* 4372 (SKU); Birsaipet, *G. Obulesu & P.V. Prasanna* 4613; Gopalapatnam RF, *G. Obulesu* 4409; Kawal Tiger Reserve, Indhanpalli Range, Narlapur Beat, *P.S. Annamma* 3925 (BSID); **Hyderabad District:** Hyderabad, *M. Venkata Ramana* 02161 (HY); **Kamareddy District:** Tadwai (Mandal), *V. Jalander* 791 (TUH); **Khammam District:** Bandi Revu Forest, *R. Chnadraseskaran* 99100 (MH); Madisigutta Temple, *R. Rajan* 106059 (MH); Kinnerasani Wildlife Sanctuary, Mamillavai South, *J.*



Fig. 23. *Eragrostis unioloides* (Retz.) Nees ex Steud.: A. Habitat; B. Node; C. Ligular area; D. Inflorescence; E-G. Spikelets; H. Lower glume; I-J. Upper glume; K. Floret; L-N. Lemma; O-Q. Palea; R-T. Caryopses.

Swamy 9767 (BSID); Kinnerasani Wildlife Sanctuary, Venkatapuram East, *J. Swamy* 9832 (BSID); **Mahabubnagar District:** Guddae Gunda, Koilkonda, *S.R. Srinivasan* 110774 (MH); *R.K. Premanath* 105264 (MH); **Medak district:** Narsapur tank, *T. Pullaiah & M.S.Gayathri* 12001; *K. M. Sebastine* 6707 (CAL); Pocharam Wildlife Sanctuary, Dantepally beat, *J. Swamy* 0612 (HY); **Nizamabad district:** Annaram, *B. Ravi Prasad Rao & C. Prabhakar Raju* 7190; Moosra RF, *T. Pullaiah & B. Ravi Prasad Rao* 6111; Suddapally, *V. Jalander* 0230 (TUH); **Warangal District:** Hanamkonda, *C. Sudhakar Reddy* 424 (KUW); Pakhal RF, *K.M. Sebastine* 11662 (CAL & MH); Pakhal *R.K. Premnath* 111591 (MH); 8 km towards north from Pasra, *R.K. Premnath* 108244 (MH).

Note: It can be recognized by its purplish-green spikelets in the field. [10].

24. *Eragrostis viscosa* (Retz.) Trin. in Mem. Acad. Imp. Sci. St.-Petersbourg Ser. 6, Sci.

Math. 1: 397. 1830. *Poa viscosa* Retz., Observ. Bot. 4: 20. 1786. *E. tenella* (L.) P.Beauv. ex Roem. & Schult. var. *viscosa* (Retz.) Stapf in Hook.f., Fl. Brit. India 7: 315. 1896. (Fig. 24)

Description: [10]

Flowering and fruiting: August - December.

Habitat: Common in humid areas.

Distribution: TELANGANA: Adilabad, Hyderabad, Karimnagar, Khammam, Medak, Nalgonda, Nizamabad, and Warangal districts; INDIA: Almost throughout.

Specimens examined: **Adilabad District:** Ankusapuram, *G. Obulesu* 4297 & 4328; Sone, *T. Pullaiah & P.V. Prasanna* 4020 (SKU); **Hyderabad District:** Hyderabad, *M. Venkata Ramana* 02162 (HY); **Karimnagar District:** Aklasapur, *G.V. Subbarao* 22491 (MH); **Khammam District:** Ramavaram, *R. Rajan* 112584 (MH); **Medak District:** Choutkoor, *T. Pullaiah & M.S.Gayathri* 11915 & 11906; **Nalgonda District:**



Fig. 24. *Eragrostis viscosa* (Retz.) Trin.: A. Habitat; B. Habit; C. Node; D. Ligular area; E-F. Inflorescence; G. Part of Inflorescence; H-J. Spikelets; K-L. Lower glume; M-N. Upper glume; O. Floret; P-R. Lemma; S-U. Palea; V. Stamens; W. Caryopses.

Mailapuram, A. *Baleshwar Reddy* 005071 (BSID); Vaddepally, A. *Baleshwar Reddy* 001275 (BSID); **Nizamabad District:** Telangana University Campus, Dichpally, V. *Jalander* 272 (TUH); **Warangal District:** Hanamkonda, C. *Sudhakar Reddy* 1230 (SKU).

Note: As per the Vivek et al. [10], it has three forms but in the state of Telangana it found a single form i.e. spreading panicle and viscous in nature.

25. *Eragrostis zeylanica* Nees & Mey., Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur. 19(Suppl. 1): 204. 1843. *E. elongata* sensu Stapf in Hook.f., Fl. Brit. India. 7: 319. 1896, non Jacq., 1813. (Fig. 25)

Flowering and fruiting: August-October

Habitat: Occasional on road sides banks of streams and backwaters.

Distribution: INDIA: Assam, Kerala, Madhya Pradesh, Sikkim, Uttar Pradesh, West Bengal and now from Telangana (Nizamabad District).

Specimens examined: India, Telangana, Nizamabad District, Near CMC, Dichpally Mandal and Village, V. *Jalander* 454 (TUH).

5. CONCLUSION

The taxonomic studies on the genus led to the discovery of seven new distributional records for Telangana state and India. Many species in the genus *Eragrostis* exhibit a high range of variations due to the occurrence of polyploids. Precipitation and other environmental factors are the primary causes of polyploidization. Due to climate change, most of the areas in tropical countries are converting into arid and also witnessed the expansion of desertification. Many *Eragrostis* species have a high potential to adapt to specific environmental changes, especially in drylands. The ancestors of the existing *Eragrostis* species originated in dry areas. Hence, selected species can be used in semi-arid and arid regions to control soil erosion and development of grasslands.

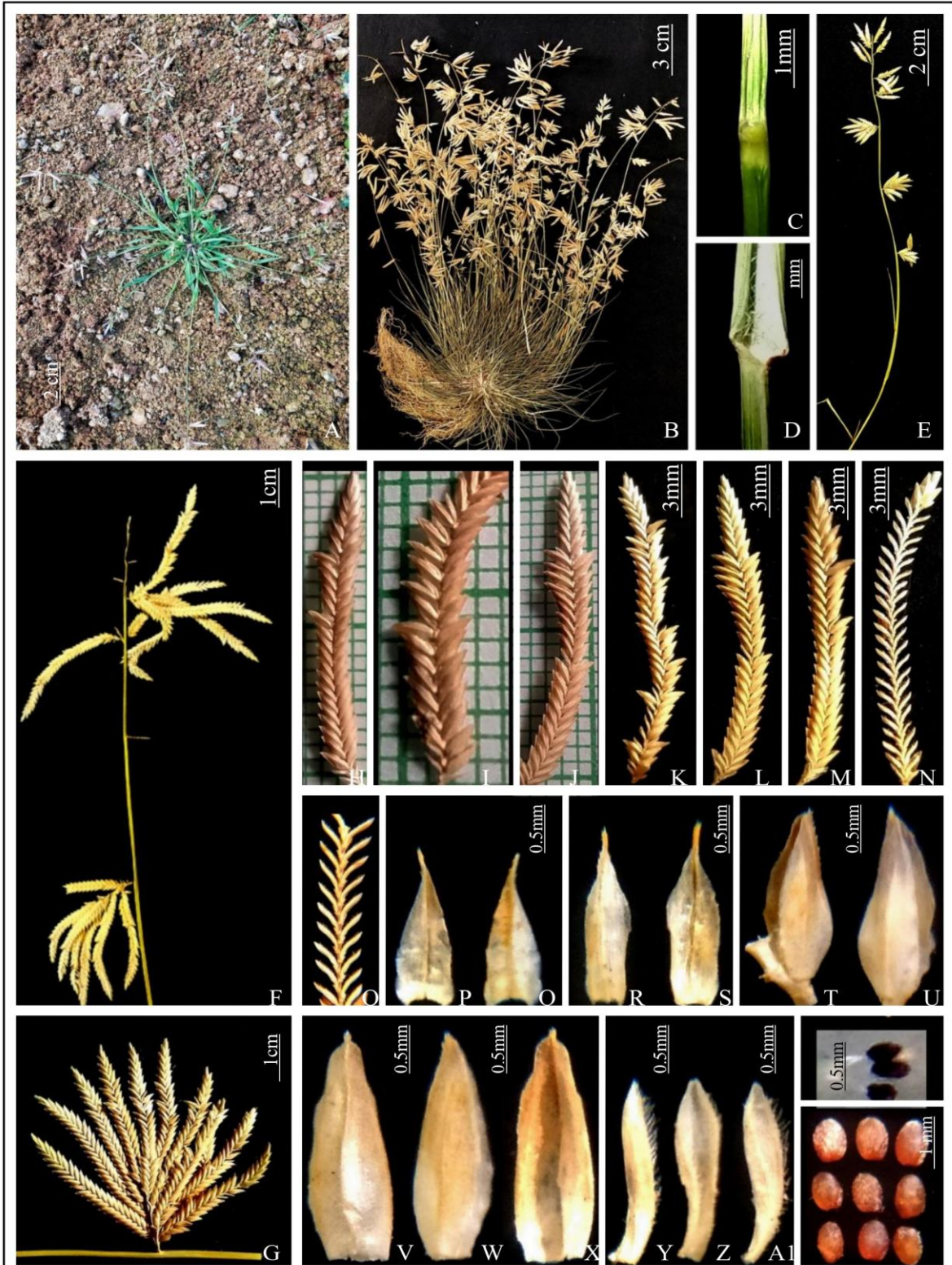


Fig. 25. *Eragrostis zeylanica* Nees & Mey.: A. Habitat; B. Habit; C. Node; D. Ligular area; E-F. Inflorescence; G. Spikelets in fascicle; H-M. Spikelets; N-O. Persistent palea on rachilla nodes; P-Q. Lower glume; R-S. Upper glume; T-U. Florets; V-X. Lemma; Y-A1. Palea; B1. Stamens; C1. Caryopses.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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