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REVISION OF ERAGROSTIS (GRAMINEAE, CHLORIDOIDEAE) IN MALESIA

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SUMMARY

In Malesia there are 25 taxa of *Eragrostis* (Gramineae, Chloridoideae, Eragrostideae), incl. *Ectrosiopsis* (Ohwi) Jansen. Eight, perhaps eleven species are introduced. *Eragrostis balgooyi* Veldk. is here described as new. *Eragrostis amabilis* (L.) Nees is the correct name for *E. tenella* (L.) Roem. & Schult. The combination *E. elongata* (Willd.) Jacq. has been applied to at least eight taxa ranging from Sri Lanka to Australia, and the younger synonym, *E. diandra* (R.Br.) Steud., is used here.

Key words: *Ectrosiopsis, Eragrostis*, Gramineae, Malesia.

INTRODUCTION

Eragrostis Wolf (Gramineae, Chloridoideae, Eragrostideae) is a large genus of grasses with c. 350 species in the (sub)tropics, notorious for its troublesome infrageneric and specific delimitation. The characters used, e.g. presence of glands, mode of fragmentation of the spikelets, number and size of the anthers, shape of the caryopses, etc., are often difficult to observe and assess. Some closely related species, e.g. those of the *E. atrovirens/E. 'elongata'*-complex are common weeds, but in the herbarium can only be distinguished after careful analysis of the spikelets under the microscope.

Recently, some important papers have been published on the infrageneric delimitation (Amarasinghe & Watson, 1990; Van den Borre & Watson, 1994; Lazarides, 1997; Gómez Sánchez & Koch, 1998) to which is here referred for further information.

There are also some recent local revisions to which the interested reader is referred: Graterol et al. (1989: Venezuela), Kami (1993: Congo), Lazarides (1997: Australia), Cope (1998: Flora Zambesiaca area), Nicora (1998: Argentina), and Portal (2002: W Europe).

NOTES ON THE INFRAGENERIC TAXONOMY OF THE GENUS

Traditionally the genus is divided on the basis of the disarticulation of the spikelet (see Van den Borre & Watson (1994) for a historical overview, summarised in their table 1). In Malesia the following groups are encountered (after Clayton & Renvoize, 1986; Lazarides, 1997). Their sequence here has no taxonomic implication. I have refrained from disentangling their synonymy and typification, as this was beyond the scope of the present study.

1) Lemmas and paleas with their joints disarticulating from above downward (sect. *Cataclastos* (Döll) Benth. or *Psilantha* (K. Koch) Tzvelev);
2) Lemmas and paleas with their joints disarticulating from above downward, lemmas more or less aristate (sect. *Ectrosiopsis* Ohwi);
3) Lemmas disarticulating from below upwards, rhachilla and sometimes paleas persisting. Spikelets very tardily disarticulating in the cereal *E. tef* (selected for this feature; collected in Malesia only once very long ago, but included here because new attempts at cultivation may be made) (sect. *Lappula* Stapf);
4) Lemmas disarticulating from below upwards, paleas long-persistent, the rhachilla ultimately breaking up from above downward (sect. *Eragrostis* or *Pteroëssa* Döll).

To the first belongs the *E. amabilis*-group, which seems a small natural Old World one with c. 20 species where the palea bears long setae on the keels. In Malesia we have: *E. amabilis* (L.) Nees (incl. *E. tenella* (L.) Roem. & Schult., *E. viscosa* (Retz.) Trin.), *E. aspera* (Jacq.) Steud., *E. riparia* (Willd.) P. Beauv., and *E. warburgii* Hack. Here the lemma, palea, and caryopsis sometimes disarticulate from above as a whole unit (*E. aspera*, *E. warburgii*), sometimes in fragments with the lemma and caryopsis falling off and the palea persisting for a while (*E. amabilis*, *E. riparia*).

The second has a single species, *E. lasioclada* Merr., peculiar for having mucronate to awned distal lemmas for which reason Ohwi (1947) considered it to represent a separate section, *Ectrosiopsis*, elevated to generic rank by Jansen (1952, 1953), but included in *Ectrosia* R.Br. by Blake (1969) and Lazarides (1997: 166). Analyses by Van den Borre & Watson (1997) indicate that it is a distinct genus, but the DELTA program using INTKEY suggests that there would only be a difference in the relative length of the internodes of the spikelet. The presence of mucronate to awned distal lemmas may be striking in SE Asia, but these also occur in some African species, e.g. *E. dinteri* Stapf, *E. rogersii* C.E. Hubb., and *E. variegata* Welw. For the time being I have retained the species in *Eragrostis*.

Ectrosia differs from *Ectrosiopsis* by the spikelets that dehisce above the glumes, but not between the heteromorphous lemmas, by the basal bisexual and upper sterile florets, the length of the basal cell of the microhairs, and the structure of the bundle sheaths and abaxial epidermis of the blades.

The third is represented by e.g. *E. atrovirens* (Desf.) Steud., *E. luzoniensis* Steud., *E. multicaulis* Steud., *E. pilosa* (L.) P. Beauv., *E. tef* (Zuccagni) Trotter, and *E. unioloides* (Retz.) Steud.

The fourth in Malesia includes the *E. 'elongata'*-complex (with *E. brownii* (Kunth) Nees, *E. cumingii* Steud., and *E. diandra* (R.Br.) Steud., etc.), *E. cilianensis* (Bellardi) Janch., *E. curvula* (Schrad.) Nees, *E. gangetica* (Roxb.) Steud., *E. minor* Host, *E. montana* Balansa, *E. nigra* Steud., *E. pectinacea* (Michx.) Steud., and *E. tenuifolia* (A. Rich.) Steud.

Here would also belong *Diandrochloa* De Winter (incl. *Roshevitzia* Tzvelev) which has been distinguished for some species with a membranous ligule and two anthers, but this group has not been generally accepted. The only Malesian representative is *E. japonica* (Thunb.) Trin.

The membranous ligule is curious, but the presence of two anthers as a generic character seems of doubtful validity, as this character state occurs in widely diverse

taxa as even the present small sample of species shows, and two and three anthers may occur within a single species (*E. cumingii* and *E. warburgii*).

Van den Borre & Watson's analysis (1994) showed that these sections are unnatural and they divided the genus into two subgenera especially based on leaf anatomy and photosynthesis type. In cladograms of the *Chloridoideae* by Van den Borre & Watson (1997) these two turn up in different clades (e.g. their figure 6 and table 3), so two genera, perhaps even in different subtribes, appear to be involved; according to the taxonomy used in the present paper *Ectrosiopsis* would appear to be the generic name available for *Eragrostis* subgen. *Caesiae* at the generic level. At present it is premature to propose new combinations, as apparently no clear-cut macromorphological character supports the division of *Eragrostis* making it impractical in floristic revisions as the present one (see Van den Borre & Watson (1994: 407, table 7)).

Lazarides (1997) well-aware of this study nevertheless recognised 6 informal groups for Australia based on spikelet dehiscence, which was admittedly not supported by the types of photosynthetic carbon reduction (PCR) known or postulated from the bundle sheath anatomy (Kranz and subtypes) and microhair type (see his table 1 and accompanying discussion).

Cope (1998) distinguished nine informal groups for the Flora Zambesiaca area.

SOME NOMENCLATURAL PROBLEMS

Eragrostis sect. *Ectrosiopsis* was validly described by Ohwi (1947) including a Latin diagnosis. Jansen (1952, 1953) in a series of papers on Malesian grasses elevated it to generic level. In the first part the reference to the basionym was given and 4 species were included, in the second part another was added. Unfortunately, the latter appeared before the first. Because the heading was '*Ectrosiopsis* (Ohwi) Jansen' an indirect reference to the basionym was provided (Greuter, 2000: Art. 32.3, 4) and as the paper appeared on December 1, 1952, it was only just in time for the generic name to be validly published: Art. 33.3 requiring a full and direct reference becomes into effect for publications on or after January 1, 1953. The single species mentioned is therefore valid as well. Even without the reference the names would have been valid as then a descriptio generico-specifica would have been present (Art. 42.1).

Blake's remark (1969) that the generic and specific name would be invalid is therefore incorrect. He reduced the genus to a single species in *Ectrosia*, but used the wrong combination, *E. eragrostoides* Domin (1915), citing the older *E. lasioclada* Merr. (1906) as the first name in its synonymy. In 1973 he made the correct combination, saying that "the line with the necessary new combination was accidentally omitted ... in 1969".

Eragrostis elongata was described by Willdenow (1809) as *Poa elongata* based on a plant cultivated in the Berlin Botanical Garden from seed thought to have come from India. In Vienna other plants under this name were cultivated and depicted by Jacquin (1811) as *Eragrostis elongata*. Here three anthers were shown and later authors have applied the epithet to a whole range of 3-anthered species in SE Asia, some of which are very widely distributed from India to Australia, e.g. *E. brownii*, *E. bulbillifera* Steud., *E. cumingii*, *E. pubescens* (R.Br.) Steud., *E. spartinoides* Steud., *E. subsecunda* (Lam.) E. Fourn., or *E. zeylanica* Nees, either as distinct species, or in various combi-

nations of them. Without corroborating remarks or descriptions it is only possible from voucher specimens to deduce what the author had in mind.

The situation became even more confusing when Hubbard examined the holotype in B and discovered that it belonged to a nearly strictly Australian 2(!)-anthered species, *E. diandra*. Some possible isotypes in L were similarly annotated by Blake. How an Australian species during the Napoleonic wars of the early 19th century, when the Continent was blocked from any import from 'perfidious Albion', could have turned up in Berlin is an intriguing question. Subsequently, in some mainly Australian literature *E. elongata* has been used for *E. diandra* (e.g. by Lazarides, 1997), but as other taxa to which the name has been misapplied occur in Australia as well, it is usually not clear to what taxon the author has applied the combination.

Not wanting to perpetuate the confusion I have not used the combination at all, except in the synonymy, where besides under *E. diandra* it occurs four times. Article 57 applies here ("A name that has been widely and persistently used for ... taxa not including its type is not to be used in a sense that conflicts with current usage").

Eragrostis tenella — Linné (1753) published *Poa amabilis* L. and *P. tenella* L. simultaneously. Munro (1862) was the first to unite the two and chose for the first one, which therefore has to be adopted (Art. 11.5). Even so, *E. tenella* is the combination usually employed and those in favour of stability should propose its conservation.

FURTHER NOTES

The number of anthers must be checked in several florets, as sometimes one has dropped out and there appear to be only two. This number is surprisingly constant at least in Malesia: only in *E. cumingii* s.l. and *E. warburgii* both two and three anthers occur.

Some Malesian specimens (e.g. of *E. atrovirens, E. balgooyi, E. brownii, E. gangetica, E. riparia, E. tenuifolia*) had spikelets infected by the smut *Bipolaris spec.*, otherwise only known from *Sporobolus indicus* (L.) R.Br. s.l., which may be indicative of a closer relationship of the two genera than generally supposed.

ERAGROSTIS

Eragrostis Wolf (1776) 23; Host (1809) 14, t. 24; P. Beauv. (1812) 70, 162, isonym. — [*Eragrostis* Wolf sect. *Pteroëssa* Döll (1878) 136, nom. inval. — *Eragrostis* Wolf sect. *Eueragrostis* Boiss. (1884) 580, nom. inval.]. — *Erosion* Lunell (1915) 221, nom. superfl. — Lectotype: *Eragrostis minor* Host, designated by Ross (1966).

Eragrostis Wolf sect. *Ectrosiopsis* Ohwi (1947) 1. — *Ectrosiopsis* Jansen (1952) 474; (1953) 269. — Lectotype: *Ectrosiopsis subtriflora* (Ohwi) Jansen (= *Eragrostis lasioclada* Merr.), designated by Blake (1969).

Diandrochloa De Winter (1960) 387. — Type: *Diandrochloa namaquensis* (Schrad.) De Winter (= *Eragrostis japonica* (Thunb.) Trin.).

Roshevitzia Tzvelev (1968) 311. — Type: *Roshevitzia diarrhena* (Schult. & Schult.f.) Tzvelev (= *Eragrostis japonica* (Thunb.) Trin.).

Annuals or perennials, then branching intra- and extra-vaginally at base, rhizomes and stolons absent. *Culms* hollow. Ligules usually a line of hairs, rarely membranous (*Diandrochloa*). *Panicles* contracted to lax, branches ending in a spikelet. *Spikelets*

pedicelled, more or less laterally compressed, muticous, 2–many-flowered, disarticulating above the glumes. *Glumes* early deciduous, unequal to subequal, shorter than to subequal to the adjacent lemmas, acute to mucronate; lower glumes 0- or 1-nerved; upper glumes 0–3-nerved. Rhachilla persistent or not, ending in a more or less reduced floret. *Lemmas* without a distinct callus, keeled or rounded on the back, 3-nerved, acute to mucronate. *Palea* 2-nerved. Lodicules 2. Stamens 2 or 3. Styles 2, free to base. Ovary glabrous. Pericarp adnate (in Malesia). Hilum punctiform. Embryo 0.33–0.5 times as long as the caryopsis. x = (9 or) 10.

Distribution — Circa 350 species in the (sub)tropics, 24 in Malesia, 8, perhaps 11, introduced.

KEY TO THE TAXA

NB. 1) Characters after — apply only to that lead and are variable in the other.
2) In sizes only usual values are given, exceptions may occur.
3) Use a 40 × magnification to see glands, mode of disarticulation of the spikelet, visibility of rhachilla joints, etc., and even more for the surface of the pericarp. Check mature spikelets; the joints may be covered by the lemmas during anthesis but may become exposed at fructification.
4) To know the number and size of the anthers, soak a spikelet in water with a drop of detergent and inspect the distal florets. When opening dry florets especially when the caryopses are subglobose or the anthers are small, they may be ejected and lost.
5) As several features are so minute a measuring device in the ocular is recommended.

1a. Palea keels setose. — Spikelets disarticulating from above downward, rhachilla fragile. Anthers 0.2–0.3 mm long 2
b. Palea keels glabrous to ciliolate 4
2a. Glands absent or present on the panicle branches and pedicels. Lowermost longest panicle branch 1–5 cm long. Pedicels shorter to longer than the spikelets ... 3
b. Glands present on the peduncle and main axis. Lowermost longest panicle branch 0.6–0.9 cm long. Pedicels much shorter than the spikelets. — Luzon ..... **20. E. riparia**
3a. Collar of sheaths pilose. Lowermost longest panicle branch 1–3.5 cm long. First lemma acute to obtuse. — Widespread ..... **1. E. amabilis**
b. Collar of sheaths glabrous, sometimes with a few hairs. Lowermost longest panicle branch 4.5–5 cm long. First lemma subtruncate, muticous to shortly mucronate. — Kangean, Celebes, Timor, Kai Is. ..... **24. E. warburgii**
4a. Spikelets disarticulating from above downward, rhachilla fragile 5
b. Spikelets disarticulating from the base upward, rhachilla persistent, or ultimately breaking up from above downward, also (dehiscing very tardily in *E. tef*, found once very long ago in Malesia) 7
5a. Collar of sheaths glabrous. Panicle 1–5 cm wide. Pedicels 0.2–2 mm long. Glumes unequal. Anthers 0.2–0.5 mm long. Caryopsis ellipsoid or fusiform 6
b. Collar of sheaths pilose. Panicle 7–15 cm wide. Pedicels 7.5–20 mm long. Glumes subequal. Anthers c. 0.1 mm long. Caryopsis subglobose. — Ligule a ciliolate rim. Glumes obtuse to acute, upper glume 0.65–1 mm long. Lemmas rounded to truncate. Keels of palea scabrous. Anthers 3. Pericarp dark tea-coloured ..... **2. E. aspera**

6a. Ligule a short membrane. Glumes obtuse; upper glume 0.7–0.8 mm long. First lemma 0.6–1.2 mm long, obtuse. Keels of palea scaberulous. Anthers 2. Caryopsis ellipsoid, pericarp dark tea-coloured. — Widespread ..... **11. E. japonica**

b. Ligule a ciliolate rim. Glumes acuminate; upper glume 1.2–2.5 mm long. Lemmas 1.7–3.5 mm long, acuminate to aristate. Keels of palea ciliolate. Anthers 3. Caryopsis fusiform, pericarp cinnamon. — Philippines, Celebes, New Guinea ... . **12. E. lasioclada**

7a. Spikelets disarticulating from the base upward, rhachilla ultimately breaking up from above downward, also 8

b. Spikelets disarticulating from the base upward (very tardily in *E. tef*, once found long ago), rhachilla persistent 11

8a. Anthers 0.1–0.2 mm long. Pericarp cinnamon 9

b. Anthers 0.3–0.4 mm long. Pericarp dark tea-coloured. — Blades 3–25 cm long. Panicle 1.5–9 cm wide, lowermost longest branch 0.5–6.5 cm long, naked in the lower 0.1–0.25th part. Anthers 3. Widespread ..... **5. E. brownii**

9a. Culms branching intra-vaginally at base. Blades 4–8 cm long. Panicle lax, 2–4.5 cm wide, lowermost longest branch 1.5–3.5 cm long, naked in the lower 0.1–0.4th part 10

b. Culms branching intra- and extra-vaginally at base. Blades 9–20 cm long. Panicle contracted to interrupted, 0.8–1.5 cm wide, lowermost longest branch 0.6–1.2 cm long, naked in the lower 0.1th part. — Anthers 2. Moluccas, New Guinea ..... **9. E. diandra**

10a. Anthers 3. — Widespread ..... **7a. E. cumingii** var. **cumingii**

b. Anthers 2. — Lesser Sunda Islands ..... **7b. E. cumingii** var. **kisarensis**

11a. Paleas early caducous. — Plants eglandular. Anthers 0.1–1 mm long. Pericarp dark tea-coloured 12

b. Paleas persistent. — Pericarp smooth to finely reticulate 17

12a. Anthers 0.1–0.5 mm long, 0.1–0.3 times as long as the lemma. Caryopsis ellipsoid, laterally somewhat flattened, pericarp smooth or finely reticulate 13

b. Anthers 0.6–1 mm long, 0.3–0.4 times as long as the lemma. Caryopsis fusiform, terete, pericarp finely striate. — Perennials. Culms erect to geniculate at base, rarely rooting in the nodes. Widespread ..... **3. E. atrovirens**

13a. Perennials. Culms erect or geniculate and with roots and new shoots at the lower nodes. — Ligule a ciliolate rim. Lower glume 1-nerved 14

b. Annuals. Culms geniculate with new shoots at the lower nodes, but not rooting. — Culms branching intra-vaginally at base. Lemmas acuminate. Keels of palea scaberulous 15

14a. Culms erect, branching intra- and extra-vaginally at base. Spikelets laterally compressed. Lemmas acuminate, smooth. Keels of palea scaberulous. Anthers 3. Caryopsis 0.4–0.5 mm long, pericarp finely reticulate. — Perlis?, Flores, Philippines ..... **13. E. luzoniensis**

b. Culms geniculate, with roots and new shoots at the nodes, branching intra-vaginally at base. Spikelets strongly laterally compressed. Lemmas acute, finely punctate. Keels of palea ciliolate. Anthers 2. Caryopsis 0.6–1 mm long, pericarp smooth. — Widespread ..... **23. E. unioloides**

15a. Ligule a row of hairs. Glumes unequal, lower glume 0-nerved. Anthers 3. Pericarp smooth 16
b. Ligule a ciliolate rim. Glumes subequal, lower glume 1-nerved. Anthers 2. Pericarp finely reticulate. — Collar of sheaths bearded. Lower panicle axils glabrous. Singapore ..... **10. E. gangetica**
16a. Collar of sheaths glabrous. Panicle 1.5–3 cm wide, axils glabrous. Pedicels much shorter than the spikelets ..... **16. E. multicaulis**
b. Collar of sheaths pilose. Panicle 3.5–14 cm wide, axils bearded. Pedicels as long as to longer than the spikelets ..... **19. E. pilosa**
17a. Culms 0.1–0.9 m long. Anthers 0.2–0.7 mm long. Caryopsis terete or laterally flattened 18
b. Culms 1.2–1.4 m long. Anthers 0.9–1.2 mm long. Caryopsis dorso-ventrally flattened. — Plants eglandular. Pedicels shorter than the spikelets. Glumes unequal, lower glume 0.62–0.73 times as long as the first lemma. First lemma acute. Caryopsis ellipsoid. Pericarp cinnamon ..... **8. E. curvula**
18a. Plants, e.g. sheaths, blades, panicle branches, pedicels glandular. — Culms geniculate, rarely rooting, branching intra-vaginally at base. Ligule a row of hairs. Lowermost longest panicle branch naked in the lower 0.16–0.25th part, 1–5.5 cm long. Pedicels much shorter than the spikelets. Glumes acute. Caryopsis dorsally not grooved 19
b. Plants eglandular. — Glumes unequal. Caryopsis ellipsoid 20
19a. Ligule a row of 0.5–0.75 mm long hairs. Spikelets 6–18 by 2–3.5 mm. Glumes subequal; lower glume 0.7–0.9 times as long as first lemma. Palea keels ciliolate. Caryopsis subglobose. — Lower glume 1.1–1.85 mm long; upper glume 1.35–2 mm long. Lemmas 1.7–2.15 mm long, acutish to apiculate .. **6. E. cilianensis**
b. Ligule a row of 0.2–0.4 mm long hairs. Spikelets 2.5–7.5 by 1.5–2 mm. Glumes unequal; lower glume 0.3–0.7 times as long as the first lemma. Palea keels scaberulous. Caryopsis ellipsoid. — Lower glume 0.8–1.25 mm long; upper glume 1.2–1.6 mm long. Lemmas 1.5–1.85 mm long, acute ..... **14. E. minor**
20a. Ligule a row of hairs. Pedicels longer than the spikelets. — Culms branching intra-vaginally at base. Panicle lowermost longest branch 4.5–20 cm long, naked in the lower 0.1–0.5th part. First lemma 2–3.7 mm long, acuminate. Keels of palea smooth to scaberulous. Anthers 0.35–0.7 mm long. Pericarp dark tea-coloured 21
b. Ligule a ciliolate rim. Pedicels shorter than the spikelets. — Panicle branches scaberulous, lowermost one solitary. Glumes 1-nerved; lower glume 0.4–0.84 times as long as first lemma. Caryopsis slightly laterally flattened, dorsally not grooved 23
21a. Panicle branches scaberulous, lowermost branch naked in the lower 0.2–0.5th part. Glumes acute. Pericarp smooth. — Lowermost panicle branch solitary 22
b. Panicle branches smooth, lowermost branch naked in the lower 0.1–0.15th part. Glumes acuminate. Pericarp finely reticulate. — Lowermost panicle branch solitary. Spikelets 1.5–2 mm wide. Glumes 1-nerved; lower glume 1.35–2.1 mm long, 0.63–0.9 times as long as first lemma; upper glume 1.75–2.15 mm long. Caryopsis dorsally grooved ..... **17. E. nigra**

22a. Lowermost panicle branches whorled, 3–10 together, the longest 9–20 cm long, naked in the lower 0.4–0.5th part. Spikelets 1.2–2 mm wide. Glumes 1-nerved; lower glume 1.2–2.7 mm long, 0.5–0.8 times as long as first lemma; upper glume 1.7–3.3 mm long. Caryopsis laterally somewhat flattened, dorsally not grooved. — Spikelets very tardily dehiscent. Cultivated species, collected once very long ago ..... **21. E. tef**

b. Lowermost panicle branch solitary, 5–8 cm long, naked in the lower 0.2–0.3th part. Spikelets 2.2–2.7 mm wide. Glumes 0-nerved; lower glume 0.5–0.7 mm long, 0.2–0.3 times as long as first lemma; upper glume 0.7–1.2 mm long. Caryopsis laterally very flat, dorsally grooved. — Sumatra (Padang), Sabah, Mindanao, New Guinea (all over) ..... **22. E. tenuifolia**

23a. Culms tufted, geniculate, with new shoots at the nodes, not rooting. Panicle 4–16 by 0.5–7 cm, lowermost longest branch naked in the lower 0.2–0.5th part. Glumes acute; upper glume 0.7–1.3 mm long. First lemma 1.1–1.6 mm long, acute. Anthers 0.2–0.3 mm long. Pericarp smooth, dark tea-coloured 24

b. Culms tufted, erect. Panicle 27–47 by c. 8 cm, lowermost branch spikeled to base. Glumes acuminate; upper glume 2–2.3 mm long. First lemma 2–3 mm long, acuminate. Anthers 0.4–0.5 mm long. Pericarp finely reticulate, cinnamon. — Perennials. Culms branching intra- and extra-vaginally at base. At least the lower axils of the panicle bearded, lowermost branch 2–4.5 cm long. Keels of palea ciliolate. Caryopsis c. 0.8 mm long. Aru Is. ..... **4. E. balgooyi**

24a. Perennials. Culms branching intra- and extra-vaginally at base. Panicle 4–7.5 by 0.5–2.5 cm, at least the lower axils glabrous to puberulous, lowermost branch 1.2–2.5 cm long. Keels of palea ciliolate. Caryopsis 0.5–0.6 mm long. — Peninsular Malaysia, Singapore, Sumatra, Bangka, Borneo ..... **15. E. montana**

b. Annuals. Culms branching intra-vaginally at base. Panicle 13–16 by 6–7 cm, at least the lower axils bearded, lowermost branch 6–6.5 cm long. Keels of palea scaberulous. Caryopsis 0.8–0.9 mm long. — Luzon ..... **18. E. pectinacea**

1. Eragrostis amabilis (L.) Wight & Arn. ex Nees

Eragrostis amabilis (L.) Wight & Arn. ex Nees (1838) 251; Kuntze (1891), isonym. — *Poa amabilis* L. (1753) 68. — *Megastachya amabilis* (L.) P. Beauv. (1812) 74, 167, 173. — [*Eragrostis amabilis* (L.) Nees forma *normalis* Kuntze (1891) 773, nom. inval.]. — Lectotype: *Hermann vol. 2, fol. 59, no. 46* (holo BM), designated by Veldkamp (2000).

[*Gramen fumi* Rumph. (1750) 11, t. 4, f. 3, nom. inval.]

Poa tenella L. (1753) 69. — *Eragrostis tenella* (L.) P. Beauv. ex Roem. & Schult. (1817) 576. — *Megastachya tenella* (L.) Bojer (1837) 369. — Lectotype: *Herb. Linn. 87.33* (holo LINN, microfiche IDC), designated here (see also Lazarides, 1997: 157).

Poa plumosa Retz. (1786) 20. — *Eragrostis plumosa* (Retz.) Link (1827) 192. — *Eragrostis tenella* (L.) Roem. & Schult. var. *plumosa* (Retz.) Stapf (1896) 315. — Type: *König s.n. in Herb. Retzius 378* (holo LD; K neg. 6891, K, fragm.).

Poa viscosa Retz. (1786) 20. — *Eragrostis viscosa* (Retz.) Trin. (1830) 397. — *Eragrostis tenella* (L.) Roem. & Schult. var. *viscosa* (Retz.) Stapf & subvar. *aperta* Stapf (1896) 315. — Type: *König in Herb. Retzius* (holo LD; K, fragm.).

Cyperus paniculatus Blanco (1837) 32, non Rottb. (1772). — Type: Not extant. Neotype: *Merrill Sp. Blancoan. 229* (holo US; A, L, MO, NSW, NY), designated here.

Eragrostis mangalorica Hochst. ex Miq. (1851a) 38; (1851b) 26; Hochst. ex Steud. (1854) 265, isonym. — Type: *Mez 262* (holo U; P).

Eragrostis amabilis (L.) Nees forma *varia* Kuntze (1891) 774. — Lectotype: *Kuntze s.n.* 'Java' (holo NY), designated here.

Eragrostis tenella (L.) Roem. & Schult. var. *koenigii* Kuntze (1891) 774. — Type: Epithet stated to be derived from Nees, but source unknown; material not indicated, 'Java', ? *Herb. Kuntze s.n.* (NY, not noticed).

Eragrostis riparia auct. non P. Beauv.

Tufted annual to perennial. *Culms* erect, not rooting at the nodes, branching intra- and extra-vaginally at base, (0.03–)0.3–0.7 m long, glands absent or with glandular patches in the inflorescence ('*viscosa*'). *Sheath collar* long-ciliate. Ligule a ciliolate rim. *Blades* (1–)3.5–13 cm by (1–)2.5–5 mm. *Panicles* rather lax, 3.5–15 by 1–5 cm, axils glabrous to pilose (see note), branches erecto-patent, solitary, approximate and pseudo-whorled, stiff to wavy, (sub)smooth, sometimes somewhat sticky, the lowermost 1–3.5 cm long, naked in the lower 0.1–0.3th. *Pedicels* 0.5–2.75 mm long, shorter to longer than the spikelet, not to inconspicuously glandular. *Spikelets* laterally compressed, disarticulating from above downward, rhachilla fragile, florets fragmenting, 1.25–4.25 by 1–1.25 mm. *Glumes* subequal, 0.8–1.25 mm long, acute, 1-nerved; lower glume 0.7–0.8 times as long as the first lemma. *Lemmas* 0.85–1.25 mm long, acute to obtuse. *Paleas* caducous, keels setose (setae up to 0.3 mm long). *Anthers* 3, 0.2–0.25 mm long, 0.15–0.2 times as long as the lemma. *Caryopsis* ellipsoid, 0.4–0.5 mm long, pericarp smooth, cinnamon to dark tea-coloured. 2n = 40, 60.

Distribution — Tropics of the Old World, widely introduced in the New; throughout Malesia, but in the Philippines so far only seen from Cebu, Luzon and Palawan; Christmas Is., Cocos Keeling. Northern Australia (W Australia, N Territory, Queensland).

Habitat — Open waste places, between stones, near beaches, locally abundant, 0–550(–1400) m altitude.

Uses — Common weed; when available in sufficient quantities used as fodder. Sometimes used for lawns. Grain said to be rich in nitrogen.

Vernacular names — Bug's egg grass, Japanese love grass.

Notes — Although the manuscripts by Rumphius (1750) were known to Linnaeus during his visit to the Netherlands (1735–1737) in this case he (through Stickman, 1754) gave no binomial.

For the use of the epithet *amabilis*, see Introduction.

Eragrostis viscosa ('sticky love grass') seems mainly distinct by being much more glandular and sticky, otherwise I see no characters to distinguish it by. Several authors, e.g. Smook (1990) indicated that intermediaries are present in S Africa, and the glands in the inflorescence range from absent to present in Malesia as well. Note that these glands are very minute, pale thickenings, and at first may easily escape detection: use a 40× magnification. Field notes suggest that otherwise 'typical' *E. amabilis* may be sticky. Occasionally specimens are obviously sticky (adhering sand grains, anthers, debris) but have no detectable glands.

Varieties have been distinguished based on the presence/absence of hairs in the inflorescence axils. This is a variable and insufficient character.

Similar to *E. warburgii* (see key and below).

A form from the shores of the Indian Ocean, from Madagascar to Bangladesh, is var. *insularis* with very contracted panicles with erect branches but identical in the spikelets.

- Panicle lax, 1–5 cm wide, branches erecto-patent. Lower glume 0.8–1.25 mm long, 0.7–0.8 times as long as first lemma ..... **1a. E. amabilis** var. **amabilis**
- Panicle contracted, 0.5–1 cm wide, branches appressed. Lower glume 0.5–0.6 mm long, 0.5–0.6 times as long as first lemma . **1b. E. amabilis** var. **insularis**

b. var. **insularis** (C.E. Hubb.) Umamaheswari & P. Daniel

Eragrostis amabilis (L.) Wight & Arn. ex Nees var. *insularis* (C.E. Hubb.) Umamaheswari & P. Daniel (1998). — *Eragrostis tenella* (L.) Roem. & Schult. var. *insularis* C.E. Hubb. (1940). — Type: *Vaughan 1937* (holo K; photo in MH).

Habitat — Said to be a coastal species, but the only specimen available, *Jeffrey & Zelia 686* (L) from the Seychelles, Mahé, was found at 420 m altitude. Occurs together with typical variety.

Notes — I have seen no specimens from Malesia, but a collection from the Marshalls (*Anderson 3675*, L; Arno Atoll) is very similar, so perhaps it may turn up in here as well.

Eragrostis warburgii also has such contracted panicles, but differs:

- Collar of sheaths pilose. Lowermost longest panicle branch 1.3–2 cm long, naked in the lower 0.17–0.23th part. Pedicels shorter than to as long as the spikelets. Spikelets c. 0.9 mm wide. Lower glume 0.5–0.6 mm long, 0.5–0.6 times as long as first lemma; upper glume 0.7–0.8 mm long .. **1b. E. amabilis** var. **insularis**
- Collar of sheaths glabrous. Lowermost longest panicle branch 4.5–5 cm long, spikeled to base. Pedicels longer than the spikelets. Spikelets 1.1–1.75 mm wide. Lower glume 0.65–1.25 mm long, 0.7–0.83 times as long as first lemma; upper glume 1–1.25 mm long ..... **24. E. warburgii**

Another species with densely contracted panicles is *E. riparia*, which differs:

- Glands absent to present on the panicle branches and pedicels. Panicles rather lax, 3.5–15 by 1–5 cm, lowermost longest branch 1–3.5 cm long **1. E. amabilis**
- Glands present on the peduncle and main axis. Panicle contracted to interrupted, then lobed at base, 1.3–3.5 by 0.35–1.2 cm, lowermost longest branch 0.6–0.9 cm long ..... **20. E. riparia**

2. Eragrostis aspera (Jacq.) Nees ex Steud.

Eragrostis aspera (Jacq.) Nees ex Steud. (1840) 562; (1841) 358. — *Poa aspera* Jacq. (1777) 32, t. 56. — Type: *Herb. Jacquin* (holo W; K).

Tufted annuals. *Culms* branching intra-vaginally at base, 0.4–1.2 m long, eglandular. *Sheath collar* pilose. Ligule a ciliolate rim. *Blades* 8–45 cm by 3–12 mm. *Panicles* finally lax, 15–60 by 7–15 cm, axils bearded, branches solitary to pseudo-whorled, 1–4 together, erecto-patent, finally patent, scaberulous, the lowermost longest 10–15 cm long, naked in the lower 0.2th. *Pedicels* 7.5–20 mm long, much longer than the spikelet. *Spikelets* laterally compressed, disarticulating from the top downward, rhachilla fragile, floret falling as a whole, 3–10 by 1–1.5 mm. *Glumes* subequal, 0.65–1 mm long, acute to obtuse, 1-nerved; the lower 0.5–0.6 times as long as the first lemma. *Lemmas* 1.25–1.4 mm long, rounded to truncate. *Palea* caducous, keels scabrous.

Anthers 3, c. 0.15 mm long, c. 0.1 times as long as the lemma. *Caryopsis* subglobose, 0.4–0.5 mm long; pericarp smooth, dark tea-coloured. 2n = 20.

Distribution — Tropical Africa to India; cultivated and escaping in Malesia, e.g. Java (Bogor), Philippines (Quezon City).

Habitat — Old fields, waste places, gravely river banks, c. 400 m altitude (300–2000 m in Africa).

Uses — Relished by horses.

Note — Inflorescences said to break off entirely and blown about by the wind. Most similar to *E. japonica* (see key) and *E. amabilis*:

- Panicle 1–5 cm wide, branches smooth, lowermost longest branch 1–3.5 cm long. Pedicels 0.5–2.75 mm long. Lower glume 0.7–0.8 times as long as first lemma. Palea keels setose. Caryopsis ellipsoid ..... **1. E. amabilis**
- Panicle 7–15 cm wide, branches scaberulous, lowermost longest branch 10–15 cm long. Pedicels 7.5–20 mm long. Lower glume 0.5–0.6 times as long as first lemma. Palea keels scaberulous. Caryopsis subglobose ..... **2. E. aspera**

3. Eragrostis atrovirens (Desf.) Trin. ex Steud.

Eragrostis atrovirens (Desf.) Trin. ex Steud. (1840) 562; (1841) 358; Nees (1841a) 400, isonym. — *Poa atrovirens* Desf. (1798) 73, t. 14. — *Eragrostis atroviridis* Maire (1937) 385, see note. — Type: *Herb. Desfontaines specimen a dextro* (holo FI; P, microfiche IDC 6210, fiche 7, A-3, K neg. 6871, photo & fragm. in BRI; *Herb. Vahl*, C, K neg. 6828, photo in BRI).
Eragrostis bahiensis auct. non Schult.
Eragrostis brownii auct. non Nees.
Eragrostis chariis auct. non Hitchc.
Eragrostis elegantula auct. non Steud.
Eragrostis elongata auct. non J. Jacq.
Eragrostis gangetica auct. non Steud.
Eragrostis nutans auct. non Steud.

Tufted perennials. *Culms* erect to geniculate at base, rarely rooting in the nodes, branching extra- and intra-vaginally at base, 0.6–1.35 m long, eglandular. *Sheath collar* subglabrous to pilose on the edges. Ligule a ciliolate rim. *Blades* 10.5–26 cm by 1.25–5 mm. *Panicles* at first contracted, later lax, 11.5–20 by 6–9 cm, axils glabrous, branches erecto-patent, 1 (or 2) together, the lowermost longest 6.5–11 cm long, naked in the lower 0.35–0.4th, scaberulous. *Pedicels* 0.25–4 mm long, shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 5.5–12 by 1.5–2.5 mm. *Glumes* unequal, acute, 1-nerved; lower glume 1.1–1.7 mm long, 0.53–0.74 times as long as first lemma; upper glume 1.3–1.6 mm long. *Lemmas* 1.75–2 mm long, acuminate. *Paleas* soon deciduous, keels scaberulous. *Anthers* 3, 0.75–1 mm long, 0.33–0.45 times as long as the lemma. *Caryopsis* spindle-shaped, 0.6–0.9 mm long, pericarp finely striate, dark tea-coloured. 2n = 20, 40, 60.

Distribution — Africa, India to Japan, throughout Malesia, but not yet from the Lesser Sunda Is., and rare in the Moluccas (Ternate) and New Guinea (Biak, Kaimana, Tsiof); Palau. Introduced in Australia (Queensland) and America (Mexico to Chili).

Habitat — Hard, stony soil, clay, along paths, fields, locally abundant, 0–1600 m altitude.

Uses — Eaten by cattle, but of low nutritive value and yield. Culms used for thatching.

Notes — Spikelets occasionally smutted by *Bipolaris spec.*

Maire (1937) changed the epithet to '*atroviridis*' as there would be an *E. atrovirens* Nees (1834) making *E. atrovirens* Steud. (1841) a later homonym. I have not traced the reference to Nees (1834) and have retained the customary orthography. Nees (1841a) did not refer to an earlier usage by him while the CD-ROM of the Index Kewensis (ed. 2, 1997) gave only a single item for the combination '*atrovirens*' and 'Nees'.

Easily confused with *E. luzoniensis*:

- Anthers 0.6–1 mm long, 0.33–0.45 times as long as the lemma. Caryopsis fusiform, terete, 0.75–0.9 mm long, pericarp finely striate (× 40!) ..... **3. E. atrovirens**
- Anthers 0.25–0.5 mm long, 0.16–0.2 times as long as the lemma. Caryopsis ellipsoid, laterally somewhat flattened, 0.4–0.55 mm long, pericarp finely reticulate (× 40!) ..... **13. E. luzoniensis**

4. Eragrostis balgooyi Veldk., *spec. nov.*

Differt a speciebus malesianis in habitu perenno, culmis basi intra- extra-vaginalibusque ramosis, vaginae collo piloso, ligula oraformi ciliolata, panicula 24–47 cm longa ca. 8 cm lata, ramorum axilla barbata, ramis erecto-patentibus, infimus ad basin spiculatus, pedicellis spiculis multo brevioribus, spiculis lateraliter compressis 11.5–20 mm longis c. 2.5 mm latis sursum disarticulatis, rhachilla persistenti nodis visibilibus, glumis acuminatis, gluma superiore 2–2.3 mm longa, paleae carinis ciliolatis, antheribus 0.4–0.5 mm longis, lemmate 0.17–0.2-plo longioribus, pericarpo minute reticulatis cinnamomeo. — Typus: *Van Balgooy & Mamesah 6259* (holo L; BO, K).

Perennials. *Culms* tufted, erect, branching intra- and extra-vaginally at base, 0.4–0.8 m long. Glands absent. *Sheath collar* pilose. Ligule a ciliolate rim. *Blades* 7–24 cm by 1.5–3 mm. *Panicles* lax, 27–47 by c. 8 cm, the lower axils of the panicle branches bearded, branches erecto-patent, scaberulous, the lowermost solitary, 2–4.5 cm long, branch spikeled to base. *Pedicels* 1.5–5.5 mm long, much shorter than the spikelets. *Spikelets* laterally compressed, 11.5–20 by c. 2.5 mm, disarticulating from the base upward (see note), rhachilla persistent, joints visible. *Glumes* unequal, acuminate, 1-nerved; lower glume 1–1.6 mm long, 0.53–0.84 times as long as first lemma; upper glume 2–2.3 mm long. *Lemmas* 2–3 mm long, acuminate. *Paleas* long-persistent, keels ciliolate. *Anthers* 3, 0.4–0.5 mm long, 0.17–0.2 times as long as the lemma. *Caryopsis* ellipsoid, laterally somewhat flattened, dorsally not grooved, c. 0.8 mm long; pericarp finely reticulate, cinnamon. 2n = ?

Distribution — Malesia, Aru Is., P. Trangan, Meroor.

Habitat — Savannah with *Banksia, Leptocarpus, Melaleuca,* and grasses, 0 m altitude.

Notes — At early maturity the lowermost lemmas fall off with their paleas being long-persistent, while it is not impossible that at full maturity the spikelets disarticulate from above down, as is the case in e.g. *E. concinna* (R.Br.) Steud. and *E. fallax* Lazarides. This curious phenomenon will cause difficulties for these species (and possibly others) when using the keys of Lazarides (1997) and Simon (1993), where the spikelets are considered as disarticulating strictly from the top down.

In these keys the present species tentatively keys out with *E. concinna*, which differs by e.g. the much more compressed spikelets, the closely imbricate lemmas hiding the rhachilla joints even at maturity, and the subglobose caryopses.

Some spikelets were smutted by *Bipolaris spec.*

The species was named after Dr. Max M.J. van Balgooy, eminent collector, plant connoisseur, epicure, and friend.

5. Eragrostis brownii (Kunth) Nees

Eragrostis brownii (Kunth) Nees (1834) 105; (1838) 253, *'brownei'*. — *Poa polymorpha* R.Br. (1810) 180, non Wibel (1799). — *Megastachya polymorpha* (R.Br.) P. Beauv. (1812) 74, 167, 175. — *Poa brownii* Kunth (1829) 112, *'brownei'*. — *Eragrostis atrovirens* (Desf.) Steud. forma *brownii* (Kunth) Hack. (1915) 38. — *Eragrostis polymorpha* (R.Br.) Jedwabn. (1924) 188, non Roem. & Schult. (1817). — Lectotype: *R. Brown 6284* (holo BM, photo in BRI; E, fragm. in BRI; K, photo & fragm. in BRI; NSW), designated by Lazarides (1997: 101).

Poa pubescens R.Br. (1810) 181. — *Eragrostis pubescens* (R.Br.) Steud. (1854) 279. — Type: *R. Brown 6272* (holo BM; BRI, E, K; P, photo in BRI).

Eragrostis zeylanica Nees (1841b) 72; (1843) 204. — Type: *Macrae s.n. in Herb. Lindley* (holo CGE; K neg. 20376).

Uniola spicata Llanos (1851) 33, non L. (1753). — Type: Not extant. Neotype: *Merrill Sp. Blancoan. 170* (holo US; A, BM, BO, K, L, MO, NSW, NY, P), designated here.

Eragrostis bulbillifera Steud. (1854) 267. — Type: *Bürger s.n.* (holo L, sh. 908.87-1907).

Eragrostis spartinoides Steud. (1854) 265. — [*Eragrostis zeylanica* Nees var. *glomerata* Nees (1850) 102, nomen]. — Type: *Cuming 668* (holo P, photo & fragm. in BRI; K. neg. 6901; B, extant?, K, MO, L).

?*Eragrostis vulcanica* Jedwabn. (1924) 188. — Syntypes: *Anonymous, Naumann s.n.* (both in B, lost) (see note).

Eragrostis cumingii Steud. var. *novoguineensis* Jansen (1953) 271. — Type: *Carr 11105* (holo L; K, MO, NSW, NY, SING).

Eragrostis amabilis auct. non Nees.

Eragrostis cumingii auct. non Steud.

Eragrostis elegantula auct. non Steud.

Eragrostis elongata auct. non J. Jacq.

Eragrostis nutans auct. non Steud.

Tufted perennials. *Culms* erect, branching extra- and intra-vaginally at base, 0.1–1.1 m long, eglandular. *Sheath collar* glabrous to sparsely pilose on the edges. Ligule a ciliolate rim. *Blades* 3–25 cm by 0.5–3 mm. *Panicles* lax, interrupted, or dense, 3.5–20 by 1.5–9 cm, axils glabrous, branches more or less appressed to patent, the lowermost solitary, 0.5–6.5 cm long, naked in the lower 0.1–0.25th, scaberulous. *Pedicels* 0.5–2.75 mm long, shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla fragile from the top down, 4.25–15(–40) by 1.5–2.5 mm. *Glumes* unequal, acute, 1-nerved; lower glume 1–1.45 mm long, 0.48–0.77(–0.9) times as long as first lemma; upper glume 1.25–1.7 mm long. *Lemmas* 1.4–2.8 mm long, acute to acuminate. *Paleas* persistent, keels ciliolate. *Anthers* 3, (0.25–)0.3–0.4(–0.6) mm long, 0.15–0.26 times as long as the lemma. *Caryopsis* ellipsoid, laterally slightly flattened, 0.45–0.65 mm long; pericarp finely striate (× 40!), dark tea-coloured, rarely cinnamon. 2n = ?

Distribution — Sri Lanka, India, to S China, Taiwan, Japan, Australia (all states), New Zealand, Pacific (New Caledonia, Marshall Is., Easter Is.), the Andaman & Nicobars, Malesia: Peninsular Malaysia (all states), Singapore, Sumatra (E Coast, Palembang), Bangka, Java (apparently rare: Bogor, Madiun), Madura, Philippines (Palawan, Luzon, Mindoro, Guimaras, Mindanao), Kabaëna, Lesser Sunda Is. (Sum-

bawa, Timor), Moluccas (Buru, Tenimbar Is.), New Guinea, Irian Jaya (Baliem, Kamiri, Kebar, Merauke, Sorong), Papua New Guinea (W Sepik, Western, W-, S Highlands, Simbu, Morobe, Northern, Gulf, Central, Milne Bay, E New Britain Prov.). Not yet in Borneo.

Habitat — Savanna, eucalypt forest on stony, shallow soil, sandy beaches, roadsides, pastures, 0–1500(–2300) m altitude.

Uses — None recorded.

Vernacular names — Bay grass, Brown's love grass, sheep grass.

Notes — Spikelets occasionally are smutted by *Bipolaris spec.*

This species has often been called *E. elongata*, an older name for the Papuasian *E. diandra* (see Introduction).

The author citation must be '(Kunth) Nees in Wight', because Kunth and Nees based their new names on *Poa polymorpha* R.Br. (see Art. 33.2 Ex. 3). In the L copy of the Catalogue there is a letter by Arnott Walker, where Nees is mentioned as having returned a list with identifications from which presumably the name was taken.

Lazarides (1997) regarded *E. brownii* as a non-Malesian species and distinct from *E. pubescens* and *E. spartinoides*, because at maturity the florets would fall together with the joint, while in the others the rhachilla would disarticulate after the lemmas have fallen. This is incorrect.

Eragrostis pubescens is the next oldest name and was employed by Lazarides (1997: 144) for tall specimens with pilose sheaths, long inflorescences with pubescent axes and axils, long and many-flowered spikelets, persistent rhachillas and paleas, and deciduous, 2–4 mm long, sometimes 5-nerved lemmas. In view of the variability expressed by the present species, none of these differences seemed tenable, as was also the opinion of Bentham (1878: 647). See also sub *E. luzoniensis*.

Eragrostis spartinoides would differ from *E. pubescens* by the less imbricate lemmas, finally exposing the fragile rhachilla. I have not been able to find any clear distinction.

Eragrostis subsecunda (Lam.) E. Fourn. (1886), based on *Poa subsecunda* Lam. (1791), and typified by *Sonnerat s.n.* from China (holo P, photo in K) possibly is part of this alliance. Based on two specimens from Queensland it was said by Lazarides (1997: 154) to occur from S China and Indochina through Malesia to Queensland. As he cited no collections, it is not clear what he meant.

Eragrostis vulcanica Jedwabn. is included here on the basis of its description. No duplicates of its syntypes from New Ireland could be found in A, B, BISH, K, L, M, NSW, NY, P, U, US, WAG.

Eragrostis brownii is very close to *E. cumingii*, which differs mainly by the minute, more or less globose anthers, and by being usually annual. I have never found both types of anthers on one plant, and so do not believe that small anthers might be due to non-genetic circumstances. The flowers are chasmogamous.

It is also similar to *E. luzoniensis* and *E. montana*:

- Spikelets disarticulating from the base upward, rhachilla fragile, breaking up from above downward, also, paleas long-persistent, keels ciliolate ... **5. E. brownii**
- Spikelets disarticulating from the base upward, rhachilla persistent, paleas caducous, keels scaberulous ..... **13. E. luzoniensis**

- Spikelets disarticulating from the base upward, rhachilla fragile, breaking up from above downward, also. Pericarp finely reticulate (× 40!) ..... **5. E. brownii**
- Spikelets disarticulating from the base upward, rhachilla persistent. Pericarp smooth ..... **15. E. montana**

6. Eragrostis cilianensis (Bellardi) Vignolo ex Janch.

Eragrostis cilianensis (Bellardi) Vignolo [(1904), comb. inval.] ex Janch. (1907) 110, see for authorship e.g. Simon (1983). — *Poa cilianensis* Bellardi (1785) 246. — *Eragrostis megastachya* (Koeler) Link var. *cilianensis* (Bellardi) Asch. & Graebn. (1900) 371, comb. incorr. — Lectotype: *Bellardi s.n.* (holo TO, no. 8242; BRI, photo, K neg. 19571), designated by Vignolo (1904).

Briza eragrostis L. (1753) 70. — *Briza oblonga* Moench (1794) 185, nom. superfl. — *Poa megastachya* Koeler (1802) 181. — *Poa eragrostis* Brot. (1804) 103, non L. (1753). — *Eragrostis major* Host (1809) 14, t. 24, nom. superfl. — *Megastachya oblonga* (Moench) Moench ex P. Beauv. (1812) 74, 167, 175. — *Eragrostis oblonga* (Moench) Baumg. (1816) 238, nom. superfl. — *Megastachya eragrostis* (L.) P. Beauv. ex Roem. & Schult. (1817) 575, 584. — *Eragrostis megastachya* (Koeler) Link (1827) 187. — *Eragrostis vulgaris* Coss. & Germ. (1845) 641, nom. superfl. — *Eragrostis vulgaris* Coss. & Germ. var. *megastachya* (Koeler) Coss. & Germ. (1845) 641, comb. incorr. — *Eragrostis poaeoides* Roem. & Schult. var. *megastachya* (Koeler) A. Gray (1856) 563. — *Eragrostis minor* Host var. *major* (Host) Beck (1890) 88, nom. superfl. — [*Eragrostis eragrostis* (L.) H. Karst. (1881) 389; MacMill. (1892) 75, isonym, nom. inval., non P. Beauv. (1812)]. — *Eragrostis minor* Host var. *megastachya* (Koeler) Burtt Dav(1901) 60, nom. superfl. — *Eragrostis vulgaris* Coss. & Germ. subsp. *major* (Host) Rouy (1913) 262, comb. incorr. — *Erosion cilianense* (Bellardi) Lunell (1915) 221, '*ciliare*'. — *Eragrostis eragrostis* (L.) P. Beauv. var. *megastachya* (Koeler) Farw. (1916) 182, nom. superfl. — *Eragrostis vulgaris* Coss. & Germ. subsp. *megastachya* (Koeler) R.C.V. Douin (1934) 32, comb. incorr. — *Eragrostis cilianensis* (Bellardi) Janch. var. *major* (Host) Maire (1941) 935, nom. superfl. — *Eragrostis cilianensis* (Bellardi) Janch. subsp. *major* (Host) Maire & Weiller & forma *megastachya* (Koeler) Maire & Weiller (1953) 175. — Lectotype: *Kalm in Herb. Linn. 88.8* (holo LINN, microfiche IDC), designated here.

Eragrostis multiflora auct. non Asch.

Tufted annuals. *Culms* geniculate at base, with tufts at the nodes, there rarely rooting, branching intra-vaginally at base, 0.2–0.7 m long. *Sheaths* glandular on the nerves, collar bearded on the edges. Ligule a row of 0.5–0.75 mm long hairs. *Blades* 4–15 cm by 1.5–6.5 mm, margins glandular. *Panicles* lax, 6–19 by 2.5–8 cm, axils glabrous to pilose, branches erecto-patent to reflexed, solitary, the lowermost 2–5.5 cm long, naked in the lower 0.16–0.25th, scaberulous. *Pedicels* 0.5–3.5 mm long, much shorter than the spikelets, sometimes crateriform glandular. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, (2.2–)6–18 by 2–3.5 mm. *Glumes* subequal, acute, 1-nerved; lower glume 1.1–1.85 mm long, 0.72–0.93 times as long as first lemma; upper glume 1.35–2 mm long. *Lemmas* 1.7–2.15 mm long, acutish to apiculate. *Paleas* persistent, keels ciliolate. *Anthers* 3, 0.25–0.35 mm long, 0.14–0.17 times as long as the lemma. *Caryopsis* subglobose, 0.5–0.7 mm long, pericarp smooth to finely reticulate, orangish to dark tea-coloured. 2n = 20, 40, 60.

Distribution — Originally in the (sub)tropical Old World, now in all (sub)tropics, the Andaman & Nicobars, Malesia: Java (Semongkrong), Lesser Sunda Is. (Bali, Lombok, Sumba, Flores, Timor, Alor), Philippines (Cebu, Negros), Moluccas (Buru), introduced in New Guinea (Irian Jaya: Jayapura; Papua New Guinea: Morobe Prov.).

Habitat — Weed of waste places, fields, grasslands, especially in regions with a distinct dry season, may become noxious; up to 500 m altitude. Rather rare?

Uses — Satisfactorily nutritious, eaten by cattle, but with little yield, occasionally poisonous (triglochinin); famine cereal.

Vernacular name — Stink grass.

Notes — Said to have a nasty smell, hence the vernacular name.

Various authors have expressed their doubts about the distinctiveness of *E. minor* and observed that it would intergrade with *E. cilianensis*. E.g. Backer (1928) stated to have observed intermediary forms in Java. I have seen none. Compare also Lazarides (1997: 105) and the key.

7. **Eragrostis cumingii** Steud.

a. var. **cumingii**

Eragrostis cumingii Steud. (1854) 266. — [*Eragrostis zeylanica* Nees *minor* Nees (1850) 102: *minor* is a diagnose, not an epithet]. — Lectotype: *Cuming 1104* (holo P, photo & fragm. in BRI; K neg. 6900; CGE, K, L, MO), designated by Lazarides (1997: 109).

Uniola paniculata Llanos (1851) 32, non L. (1753). — Type: Not extant. Neotype: *Merrill Sp. Blancoan. 422* (holo US; A, BM, BO, K, L, MO, NSW, NY, P), designated here.

Eragrostis distans Hack. (1906) 81. — Type: *Elmer 6608* (holo W, photo & fragm. in BRI, K neg 6818).

Eragrostis reflexa Hack. (1908) 168. — Type: *BS 2067 (Ramos)* (holo W; BRI, fragm.; L, fragm.; K, NSW, NY, SING).

Eragrostis cumingii var. *rindjaniensis* Jansen (1953) 272. — Type: *Elbert 1276* (holo L).

Eragrostis amabilis auct. non Nees.

Eragrostis elegantula auct. non Steud.

Eragrostis elongata auct. non J. Jacq.

Eragrostis ferruginea auct. non P. Beauv.

Eragrostis interrupta auct. non Döll.

Eragrostis nigra auct. non Steud.

Eragrostis pilosa auct. non P. Beauv.

Eragrostis zeylanica auct. non Nees & Meyen.

Tufted annuals, sometimes perennial. *Culms* erect or geniculate at base, not rooting in the nodes, branching intra-vaginally at base, 0.1–0.85 m long, eglandular. *Sheath collar* glabrous or with some hairs on the edges. Ligule a ciliolate rim. *Blades* 4–8(–19) cm by 0.5–1.75(–5) mm. *Panicles* lax, 5.5–26 by 2–8 cm, axils glabrous to sparsely pilose, branches erecto-patent, solitary, nearly smooth to scaberulous, sometimes sparsely pilose, the lowermost 1.5–5.5 cm long, naked in the lower 0.13–0.4th. *Pedicels* 0.25–2.75 mm long, much shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, ultimately breaking up from the top down or not, 4.5–20 by 1.25–3 mm. *Glumes* subequal, acute, 1-nerved; lower glume 0.75–1.5 mm long, 0.6–0.87 times as long as first lemma; upper glume 1–1.9 mm long. *Lemmas* 1.25–1.7(–2) mm long, acute to acuminate. *Paleas* persistent, keels ciliolate. *Anthers* 3, 0.1–0.25 mm long, 0.06–0.13 times as long as the lemma. *Caryopsis* subglobose to ellipsoid, laterally flattened, 0.35–0.55 mm long, pericarp finely reticulate, cinnamon. 2n = ?

Distribution — Bhutan, Burma to N Vietnam, Australia (W Australia, N Territory, Queensland); Malesia: Peninsular Malaysia (Johor), Singapore, Sumatra (E Coast), Java, Madura, Philippines (Hermana Major Is., Luzon, Mindanao, Mindoro, Palawan),

Anambas, Celebes (Palu), Lesser Sunda Is. (Bali, Lombok, Flores, Timor, Kisar), Moluccas (Buru), New Guinea, Irian Jaya (Japen, Kebar, Tsiof Is.), Papua New Guinea (E New Britain Prov.).

Habitat — Open or slightly shaded, less fertile soil, roadsides, coral sand, lawns, fields, under shrubbery, 0–1975 m altitude.

Uses — Moderate value as a fodder.

Notes — Depauperate plants were distinguished as var. *rindjaniensis*.

See also the note under *E. brownii* and the key.

I have not seen any cleistogamous spikelets, i.e. with caryopses with the anthers adhering to the top, as was suggested by Lazarides (1997: 110).

b. var. **kisarensis** Jansen

Eragrostis cumingii Steud. var. *kisarensis* Jansen (1953) 272. — Type: *Bloembergen 3840* (holo BO; K, fragm. in BRI; L) (see note).

As the typical form, but apparently sometimes perennial and with only 2 anthers.

Distribution — Malesia: Lesser Sunda Is.: Sumba (*Monod de Froideville 2033*), Timor (*Metzner 110, 178*), Kisar (*Bloembergen 3840, 3850-bis*).

Habitat — Waste places, sandy or calcareous soil, 0–200 m altitude.

Notes — This variety is maintained with hesitation and mainly to emphasise the strange combination of characters, which place these plants somewhat intermediate between *E. brownii*, *E. cumingii*, and *E. diandra*.

The holotype is in BO, not B (Lazarides, 1997: 109).

8. **Eragrostis curvula** (Schrad.) Nees

Eragrostis curvula (Schrad.) Nees (1841a) 397. — *Poa curvula* Schrad. (1821) 2073. — Type: *Hesse s.n. in Herb. Trinius 2327.1 (2327.3?)* (holo PH?; LE, iso, microfiche IDC BT-16/1).

Tufted perennials. *Culms* erect, branching extra- and intra-vaginally at base and the nodes, 1.2–1.4 m long, eglandular. *Sheath collar* pilose. Ligule a row of 0.5 mm long hairs. *Blades* 12–32 cm by 0.3–1 mm. *Panicles* lax, 15–18.5 by 5–9 cm, eglandular or (in Java) axes, branches, and sometimes pedicels with inconspicuous to orange, glandular, lanceolate patches, axils pilose, branches erecto-patent, the lowermost solitary or semi-whorled, 1–3 together, the longest 3.5–7 cm long, naked in the lower 0.3–0.34th, scaberulous. *Pedicels* 0.5–3.5 mm long, shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 5.5–9 by 1.5–2 mm. *Glumes* unequal, acute, 1-nerved; lower glume 1.5–1.75 mm long, 0.62–0.73 times as long as first lemma; upper glume 2.25–2.7 mm long. *Lemmas* 2.1–2.65 mm long, acute. *Paleas* persistent, keels smooth to minutely scaberulous. *Anthers* 3, 0.9–1.25 mm long, 0.4–0.5 times as long as the lemma. *Caryopsis* ellipsoid, dorso-ventrally compressed, 1.3–1.4 mm long, pericarp smooth, cinnamon. 2n = 20, 40, 42, 50, 60, 63, 69, 70, 80.

Distribution — S Africa, widely cultivated elsewhere, Malesia: Java (Priangan), Philippines (Manila), Papua New Guinea (Simbu Prov., Kerowagi), but no doubt elsewhere.

Habitat — Edges of tea plantations, gardens, 1400–1750 m altitude.

Uses — Cultivated for fodder, but sometimes poisonous (triglochinin), ground cover, or as a decorative; very drought resistant, useful for range improvement. Some forms, the least palatable, are in Australia (e.g. in New South Wales) considered a major pest.

Vernacular names — African or weeping love grass.

Notes — A very variable species because it is usually apomictic (see e.g. Poverene & Curvetto (1989)); in Africa merging with at least *E. barbinodis* Hack., *E. chloromelas* Steud., *E. lehmanniana* Nees, and *E. superba* Peyr.

In Malesia there are at least two forms, one with glandular, fertile inflorescences (Java, Papua New Guinea), the other eglandular and apparently functionally male (Philippines). The description above differs in some points from that given in most floras, e.g. in the presence of glands in the inflorescence (also seen in specimens from Australia, California), width of spikelet, lengths of upper glume, anthers, and caryopses, but our plants seem best placed in this species complex.

In Malesia it is somewhat similar to *E. luzoniensis*:

- Ligule a row of hairs. At least the lower axils of the panicle branches bearded. Upper glume 2.25–2.7 mm long. First lemma 2.1–2.65 mm long, acute. Paleas long-persistent. Anthers 0.9–1.25 mm long, 0.4–0.5 times as long as the lemma. Caryopsis dorso-ventrally flattened, 1.3–1.4 mm long, pericarp smooth, cinnamon ..... **8. E. curvula**
- Ligule a ciliolate rim. At least the lower axils of the panicle branches glabrous. Upper glume 1.3–1.85 mm long. First lemma 1.35–1.85 mm long, acuminate. Paleas caducous. Anthers 0.25–0.5 mm long, 0.16–0.2 times as long as the lemma. Caryopsis laterally somewhat flattened, 0.4–0.55 mm long, pericarp finely reticulate (× 40!), (dark) tea-coloured ..... **13. E. luzoniensis**

9. Eragrostis diandra (R.Br.) Steud.

Eragrostis diandra (R.Br.) Steud. (1854) 279. — *Poa diandra* R.Br. (1810) 180. — Lectotype: *R. Brown 6278* (holo BM, photo in BRI; K, fragm. in BRI), designated here (see Lazarides (1997: 115). For the preference of this name over the next, older one, see note).

Poa elongata Willd. (1809) 108. — *Eragrostis elongata* (Willd.) J. Jacq. (1811) 3, t. 3, pro comb. — *Megastachya elongata* (Willd.) P. Beauv. (1812) 74, 167, 174. — Type: *Herb. Willdenow 1919* (holo B; IDC microfiche 7440; iso L?), said to have come from East India (see Introduction).

Tufted perennials. *Culms* erect, not rooting in the nodes, branching extra- and intravaginally at base, 0.4–0.6 m long, eglandular. *Sheath collar* glabrous. Ligule a ciliolate rim. *Blades* 9–20 cm by 0.35–2.7 mm. *Panicles* contracted, composed of interrupted glomerules, 8–11 by 0.8–1.5 cm, axils glabrous, branches patent, scaberulous, the lowermost solitary, 0.6–1.2 cm long, spikeled from the base. *Pedicels* 0.25–1 mm long, much shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla fragile from the top down, (3–)5.5–6.25 by 1.5–2 mm. *Glumes* subequal, acute, 1-nerved; lower glume 0.8–1 mm long, 0.6–0.75 times as long as first lemma; upper glume 1–1.5 mm long. *Lemmas* 1.25–1.5 mm long, acute to acuminate. *Paleas* persistent, keels ciliolate. *Anthers* 2, 0.2–0.25 mm long, 0.13–0.17 times as long as the lemma. *Caryopsis* ellipsoid, laterally flattened, 0.45–0.5 mm long, pericarp smooth to finely reticulate, cinnamon. 2n = ?

Distribution — Australia (not in Tasmania), Malesia: Moluccas (Morotai), New Guinea: Irian Jaya (Sentani); Papua New Guinea (Madang, Oro, Milne Bay Prov.). Plants called *E. elongata* are said to have been introduced elsewhere, e.g. in Costa Rica and Cuba (as *E. ekmannii* Hitchc.), Chili, USA (North Carolina and Florida, Hawai'i), but in view of the application of the combination *E. elongata* their identity needs confirmation (see Introduction).

Habitat — Dry grassland, weed in waste grounds, along paths, stream beds, 30–975 m altitude.

Uses — Due to the nomenclatural confusion concerning this species, said by some to be excellent for fodder and hay, by others of negligible value.

Vernacular name — Clustered love grass.

Note — Close to *E. brownii*, see key.

10. Eragrostis gangetica (Roxb.) Steud.

Eragrostis gangetica (Roxb.) Steud. (1854) 266. — *Poa gangetica* Roxb. [(1814) 8, nomen]; (1820) 341. — *Eragrostis willdenowii* Nees ex Steud. (1840) 565, nom. superfl. — Type: *Roxburgh s.n.* (holo BM; CAL, K: *Icon. Ined. 2111*).

Poa cambessediana Kunth (1831) 469. — *Eragrostis cambessediana* (Kunth) Steud. (1854) 269. — Type: *Lelièvre s.n.* (holo P; K).

Tufted annuals. *Culms* tufted, geniculate at base, not rooting in the nodes, branching intra-vaginally at base, 0.25–0.45 m long, eglandular. *Sheath collar* bearded on the edges. Ligule a ciliolate rim. *Blades* 6–15 cm by 1–2.5 mm. *Panicles* lax to contracted, 12–20 by 5.5 cm, axils glabrous, branches solitary, erecto-patent, scaberulous, the lowermost solitary, 4–5 cm long, naked in the lower 0.16–0.25th. *Pedicels* 1.75–6 mm long, shorter than to as long as the spikelet. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 4–5.25 by 1.5–1.75 mm. *Glumes* subequal, acute, 1-nerved; lower glumes 0.75–1 mm long, 0.5–0.6 times as long as the first lemma; upper glumes 1–1.5 mm long. *Lemmas* 1–1.5 mm long, acuminate. *Paleas* caducous, keels scaberulous. *Anthers* 2, 0.2–0.4 mm long, 0.15–0.27 times as long as the lemma. *Caryopsis* ellipsoid, laterally slightly flattened, 0.4–0.5 mm long, pericarp finely reticulate, dark tea-coloured. 2n = 20, 80.

Distribution — Tropical Africa to N Vietnam, Malesia: Singapore (*Sinclair 6892, 15/9/1951*), Brunei (*Gilliland 5255, 30 March 1959*), C Kalimantan (*Church et al. 1144, 25 April 1994*).

Habitat — Disturbed places, grasslands at low altitude.

Uses — Used for fodder and brooms. May become a noxious weed.

Notes — Spikelets may be smutted by *Bipolaris spec.*

Very close to *E. nutans* (Retz.) Steud. from India, which is a perennial with persistent paleas and 3 anthers.

In Malesia most similar to *E. minor*:

- Glands absent. Ligule a ciliolate rim. First lemma acuminate. Paleas caducous. Anthers 2 ..... **10. E. gangetica**
- Glands present on the sheaths, blades, panicle branches, and pedicels. Ligule a row of hairs. First lemma acute. Paleas long-persistent. Anthers 3 **14. E. minor**

11. Eragrostis japonica (Thunb.) Trin.

Eragrostis japonica (Thunb.) Trin. (1830) 405. — *Poa japonica* Thunb. (May–June 1784) 114; (Aug. 1784) 51. — *Eragrostis tenella* (L.) P. Beauv. ex Roem. & Schult. var. *japonica* (Thunb.) Roem. & Schult. (1817) 576. — *Eragrostis tenuissima* Schrad. ex Nees (1841a) 409, nom. superfl. — *Eragrostis interrupta* [R.Br., non Lam.] P. Beauv. var. *tenuissima* Stapf (1896) 316. — *Diandrochloa japonica* (Thunb.) A.N. Henry (1968) 290. — *Roshevitzia japonica* (Thunb.) Tzvelev (1971) 50. — Type: *Herb. Thunberg 2252* (holo UPS, fragm. in BRI, microfiche IDC 1036, K neg. 6868).

Poa glomerata Walt. (1788) 80. — *Megastachya glomerata* (Walt.) Schult. (1824) 327. — *Eragrostis glomerata* (Walt.) Dewey ex J.M. Coult. (1894) 543. — *Diandrochloa glomerata* (Walt.) Burkart (1968) 287. — *Roshevitzia glomerata* (Walt.) Tzvelev (1971) 50. — Type: Lost. Neotype: Not appointed.

Poa biflora Retz. (1788, '1789') 19. — *Eragrostis minutiflora* J. Presl (1830) 274, nom. superfl. — Type: *König s.n. in Herb. Retzius* (holo LD, fragm. in BRI; *Herb. Willdenow 1886*, B, iso?, IDC microfiche 7440).

Poa interrupta Lam. (1791) 185. — *Eragrostis hapalantha* Trin. (1830) 409. — *Eragrostis interrupta* (Lam.) Döll (1878) 157, non P. Beauv. (1812). — *Eragrostis japonica* (Thunb.) Trin. var. *interrupta* (Lam.) Henrard (1940) 424. — Type: *Sonnerat s.n. in Herb. Lamarck* (holo P, microfiche IDC 6207, fiche 711/1).

[*Poa tenella* sensu R.Br. (1810) 181, non L. (1753)]. — *Poa tenellula* Kunth (1829) 113. — *Eragrostis tenellula* (Kunth) Steud. (1854) 279. — Type: *R. Brown 6269* (holo BM; K, photo & fragm. in BRI). (See note).

Poa diandra Roxb. (1820) 337, non R.Br. (1810). — *Poa diarrhena* Schult. & Schult.f. (1827) 616. — *Eragrostis diarrhena* (Schult. & Schult.f.) Steud. (1854) 266. — *Eragrostis interrupta* [R.Br., non Lam.] P. Beauv. var. *diarrhena* (Schult. & Schult.f.) Stapf (1896) 316. — *Diandrochloa diarrhena* (Schult. & Schult.f.) A.N. Henry (1968) 290. — *Roshevitzia diarrhena* (Schult. & Schult.f.) Tzvelev (1968) 311. — Type: *Herb. Roxburgh s.n.* (holo BM; CAL; K, fragm. in BRI; K: *Icon. Ined. 1330*; P).

Eragrostis aurea Steud. (1846) 20. — *Poa aurea* (Steud.) Steud. ex Walp. (1849) 940. — Lectotype: *Goering 15* (holo P), designated here.

Sporobolus verticillatus Nees (1850) 101. — Type: *Cuming 545* (holo CGE; BM, BO; K, fragm. in BRI, K neg. 6903; L, NSW, P).

Panicum leptanthum Steud. (1853) 79. — Type: *Cuming 1669* (holo P, photo & fragm. in BRI, K neg. 6896; CGE, K).

Eragrostis milleflora Steud. (1854) 265. — Type: *Lenormand in Herb. Steudel* (holo P, fragm. & photo in BRI, K neg. 6897).

Eragrostis hapalantha auct. non Trin.

Eragrostis nutans auct. non Steud.

Eragrostis tenella auct. non Roem. & Schult.

Poa amboinica auct. non L.

Tufted annuals (or sometimes perennial?). *Culms* erect, branching intra-vaginally at base, 0.2–1.5(–1.8) m long, eglandular. *Sheath collar* glabrous. Ligule membranous, margin ciliolate. *Blades* 9–32 cm by 2–9 mm. *Panicles* contracted, interrupted, 10–70 by 2–4 cm, axils glabrous, branches erecto-patent, solitary, sometimes approximate, the lowermost longest 3–15 cm long, naked in the lower 0.1–0.35th, scaberulous. *Pedicels* 0.25–2 mm long, shorter to longer than the spikelets. *Spikelets* laterally compressed, disarticulating from above downward, rhachilla fragile, 1–3.75 by 0.8–1.6 mm. *Glumes* unequal, obtuse, faintly 1-nerved; lower glume 0.5–0.85 mm long, 0.5–0.64 times as long as first lemma; upper glume 0.75–0.85 mm long. *Lemmas* 0.6–1.25 mm long, obtuse. *Paleas* caducous, keels scaberulous. *Anthers* 2, 0.25–0.3 mm long, 0.3–0.4 times as long as the lemma. *Caryopsis* ellipsoid, 0.4–0.45 mm long, pericarp smooth, dark tea-coloured. 2n = 20, 40, 60.

Distribution — Old World tropics to Japan, the Andaman & Nicobars, early (before 1788) and now widely introduced in the New World, Malesia: Peninsular Malaysia (Pahang, Setul), Java (in the W only N of the mountains), Kangean Is., Borneo (Sabah; Banjarmasin), Lesser Sunda Is. (Sumba, Flores, Timor, Sawu, Alor), Philippines (Balabac Is., Luzon, Mindanao, Mindoro, Palawan, Samar), Celebes (South), Moluccas (Buru), New Guinea: Irian Jaya (Mamberamo), Papua New Guinea (W Sepik, 'Papua' (*Copland King 1017*, prior to 1918; NSW), New Ireland).

Habitat — Periodically inundated localities in regions with a pronounced dry season, sandy coasts, river sand banks, rice fields, ditches, roadsides, railroad beds, thickets, grasslands, locally gregarious (fields red-tinged!), up to 450(–1400) m altitude.

Vernacular name — Japanese love grass.

Uses — Stated by some to be avoided by cattle, by others to be well-grazed.

Notes — In Malesia most similar to *E. aspera* (see key).

This is an extremely polymorphic species as can be seen from the synonymy. Most authors have attempted to distinguish *E. diarrhena* (incl. *E. interrupta* (Lam.) Döll, non P. Beauv.), *E. japonica*, the Indian and African *E. namaquensis* Schrad. (sometimes with *E. diplachnoides* Steud. as a variety), and the Australian *E. tenellula* (Kunth) Steud. by the structure of the inflorescences and spikelets, but like Cope (1982) and Lazarides (1994), (but see 1997: 160!) I have failed to find any correlating characters. In Malesia the '*diarrhena*' form is most common in Java and the Lesser Sunda Islands, while in the Philippines, Moluccas, and New Guinea (three collections from the latter two) the '*japonica*' form seems more usual. They may grow together as is shown by subsequent numbering and comments by collectors. Roughly they differ by:

- Panicles dense, lobed, lower branches solitary to approximate, the longest one 3–6 cm long. Spikelets oblong to lanceolate, 2.75–3.75 mm long, longer than the pedicels, 6–14-flowered, not yawning. First lemma 1–1.25 mm long ..... **E. diarrhena**
- Panicles generally more lax, lower branches usually approximate, the longest one 8.5–15 cm long. Spikelets ovate to oblong, 1–2 mm long, as long as to shorter than the pedicels, 2–6-flowered, rather laxly distributed, often yawning. First lemma up to 1 mm long ..... **E. japonica**

12. Eragrostis lasioclada Merr.

Eragrostis lasioclada Merr. (1906) 382. — *Ectrosiopsis lasioclada* (Merr.) Jansen (1953) 268. — *Ectrosia lasioclada* (Merr.) S.T. Blake (1973) 65. — Type: *Merrill 461* (*'416'*) (holo PNH, lost; L, US).

Ectrosia eragrostoides Domin (1915) 407; S.T. Blake (1969) 20. — [*Ectrosiopsis eragrostoides* (Domin) Veldk. ex Whyte (1972) 132, comb. inval.]. — Type: *Domin s.n., February 1910* (holo PRC, K neg. 11477; K, fragm.).

Eragrostis subaristata Chase (1939) 305. — *Ectrosiopsis subaristata* (Chase) Jansen (1953) 269. — Type: *Brass 7879* (holo A, K neg. 5625; BM, BO, BRI, K, US).

Ectrosia subtriflora Ohwi (1942) 1. — *Eragrostis subtriflora* (Ohwi) Ohwi (1947) 1. — *Ectrosiopsis subtriflora* Jansen (1953) 268. — Type: *Kanehira & Hatusima 13165* (holo BO; FU, L).

Ectrosiopsis curvifolia Jansen (1952) 474, t. 2. — Type: *MacGregor 9* (holo MELB).

Ectrosiopsis aruensis Jansen (1953) 269. — Type: *Buwalda 5306* (holo L; BO).

Eragrostis ciliata auct. non Nees.

Tufted perennials. *Culms* erect, branching intra- and extra-vaginally at base, 0.2–0.9 m long, eglandular. *Sheath collar* glabrous. Ligule a ciliolate rim. *Blades* 3–25 cm by 1–5 mm. *Panicles* loosely contracted to lax, 3–25 by 1–5 cm, axils glabrous to pilose, branches solitary, erect to patent, the lowermost longest 0.8–3.5 cm long, naked in the lower 0.1–0.15th, scaberulous. *Pedicels* 0.75–2 mm long, much shorter than the spikelet, pilose. *Spikelets* laterally compressed, disarticulating from the top down, rhachilla fragile, 1.5–8 by 1–2 mm. *Glumes* unequal, acuminate, 1-nerved; the lower 1–1.75 mm long, 0.5–0.6 times as long as the first lemma; the upper 1.2–2.5 mm long. *Lemmas* 2–3.5 mm long, the upper longest and longest aristate, base with or without somewhat translucent depressions, apex acuminate to mucronate, mucro up to 1.5 mm long. *Palea* caducous, keels ciliolate. *Anthers* 3, 0.3–0.5 mm long, 0.17–0.33 times as long as the lemma. *Caryopsis* fusiform, 0.45–0.6 mm long, pericarp smooth, cinnamon. 2n = ?

Distribution — Australia (N Territory, Queensland), Carolines (Yap), Malesia: Philippines (Palawan, Culion), SE Celebes, Aru (Trangan), New Guinea (Irian Jaya: Kebar, Manokwari, Merauke; Papua New Guinea: Western; Sudest Is., Milne Bay Province).

Habitat — Grasslands, savannahs with *Banksia, Leptocarpus, Melaleuca*, old fields, locally common, up to 400 m altitude.

Notes — Sometimes distinguished as a separate genus, *Ectrosiopsis*, because of the awned lemmas, transitional to *Ectrosia* R.Br., to which Blake and Lazarides have reduced it. See the Introduction.

The lemmas are quite variable in shape. Jansen (1952, 1953) thought he could distinguish 5 species, Blake, on the other hand, recognised only a single one. In the Malesian material two main forms seemed to be present, but one collection from near Merauke is a mixture of both (*Hoogerwerf 199*, L).

- Blades and inflorescences glabrous or with some long hairs in the axils of the inflorescence and on the pedicels. Spikelets 5–14-flowered. Lemmas without a translucent area on each side at the base of the midrib; first lemma linear-lanceolate, acuminate to shortly caudate; higher lemmas aristate. (*E. aruensis, E. subaristata*) ..... **'eragrostoides'**
- Blades and inflorescences pilose. Spikelets 3–6-flowered. Lemmas with a translucent area on each side at the base of the midrib; first lemma oblong to lanceolate, acute to acuminate; higher lemmas shortly caudate to aristate. (*E. curvifolia, E. lasioclada, E. subtriflora*) ..... **'lasioclada'**

In Malesia most similar to *E. brownii*:

- Spikelets disarticulating from the base upward, rhachilla fragile, breaking up from above downward, also. Glumes acute. Caryopsis ellipsoid, laterally somewhat flattened, pericarp finely reticulate (× 40!), (dark) tea-coloured .. **5. E. brownii**
- Spikelets disarticulating from above downward, rhachilla fragile. Glumes acuminate. Caryopsis fusiform, terete, pericarp smooth, cinnamon . **12. E. lasioclada**

13. Eragrostis luzoniensis Steud.

Eragrostis luzoniensis Steud. (1854) 266. — Type: *Cuming 1416* (holo P, photo & fragm. in BRI, K neg. 6899; CGE, K, L, MO).
Eragrostis atrovirens auct. non Steud.

Eragrostis chariis auct. non Hitchc.
Eragrostis elegantula auct. non Steud.
Eragrostis elongata auct. non J. Jacq.
Eragrostis pubescens auct. non Steud. (see note).

Tufted perennials. *Culms* erect, branching extra- and intra-vaginally at base, 0.75–1.25 m long, eglandular. *Sheath collar* glabrous to pilose on the edges. Ligule a ciliolate rim. *Blades* 9–24 cm by 1–5 mm. *Panicles* at first contracted, later lax, 11–21 by 2.5–7.5 cm, axils glabrous, branches erecto-patent, the lowermost 1 or 2 together, the longest 3–10 cm long, naked in the lower 0.18–0.46th, scaberulous. *Pedicels* 1–8.5 (–12) mm long, usually shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 4.5–18 by 1.5–2.5 mm. *Glumes* sub- to unequal, acute, 1-nerved; lower glume 1.1–1.6 mm long, 0.56–0.84 times as long as first lemma; upper glume 1.3–1.85 mm long. *Lemmas* 1.35–1.85(–2.1) mm long, acuminate. *Paleas* soon deciduous, keels scaberulous. *Anthers* 3, 0.25–0.5 (–0.7) mm long, 0.16–0.2(–0.4) times as long as the lemma. *Caryopsis* subglobose to ellipsoid, laterally slightly flattened, 0.4–0.5 mm long, pericarp finely reticulate, dark tea-coloured. 2n = 40.

Distribution — Thailand (N: Chiang Mai; NE: Phetchabun; E: Chaiyaphum; Penins.: Songkhla), Malesia: Peninsular Malaysia (Perlis, see note), Lesser Sunda Is. (Flores), Philippines (Luzon, Mindanao, Negros, Palawan, Semerara Is.). Note the disjunction.

Habitat — Weed, open grasslands, probably a drought plant in view of its disjunct distribution, at low altitude, 130–300 m in Flores.

Notes — It may be that this is what Gilliland (1971) described as *E. pubescens* (R.Br.) Steud. from Perlis. If so, there are some errors in his description, e.g. lemmas 1.9–2.2 mm long with anthers 2 mm long, and caryopsis 5 mm long. If this is read as 0.2 and 0.5 mm, respectively, his description is a close match for the present species. There appear to be no vouchers in SING or SINU.

Easily confused with *E. atrovirens* (e.g. by Lazarides, 1997) and *E. brownii* (q.v.).

14. Eragrostis minor Host

Eragrostis minor Host (1809) 15. — *Poa eragrostis* L. (1753) 68. — [*Eragrostis eragrostis* (L.) P. Beauv. (1812) 10, t. 14, f. 11, nom. inval.]. — *Eragrostis poaeoides* P. Beauv. ex Roem. & Schult. (1817) 574, nom. superfl. — *Eragrostis poaeformis* Link (1827) 188, nom. superfl. — *Eragrostis megastachya* (Koeler) Link subsp. *poaeoides* (Roem. & Schult.) Husn. (1898) 55. — *Eragrostis pilosa* (L.) P. Beauv. var. *minor* (Host) Kuntze (1898) 353. — *Eragrostis vulgaris* Coss. & Germ. subsp. *minor* (Host) Rouy (1913) 263, comb. incorr. — *Eragrostis vulgaris* Coss. & Germ. subsp. *poaeoides* (Roem. & Schult.) R.C.V. Douin (1934) 32, comb. incorr. — Lectotype: *Bäck in Herb. Linn. 87.23* (holo LINN, microfiche IDC), designated by Clayton et al. (1974).

Tufted annuals. *Culms* geniculate, not rooting in the nodes, branching intra-vaginally at base, 0.1–0.55 m long. *Sheaths* glandular on the nerves, collar bearded on the edges. Ligule a row of 0.2–0.4 mm long hairs. *Blades* 1–8.5 cm by 0.5–4 mm, margins pusticulate glandular. *Panicles* lax, 3–12 by 2.5–5 cm, axils glabrous to puberulous, branches erecto-patent to reflexed, solitary, smooth to scaberulous, glandular, the lowermost 1–4.5 cm long, naked in the lower c. 0.2th part. *Pedicels* 0.75–4 mm long, much shorter than the spikelet, glandular. *Spikelets* laterally compressed, disarticulating from

the base upward, rhachilla persistent, 2.5–7.5 by 1.5–2 mm. *Glumes* unequal, acute, 1-nerved, nerve sometimes glandular; lower glume 0.8–1.25 mm long, 0.3–0.7 times as long as the first lemma; upper glumes 1.2–1.6 mm long. *Lemmas* 1.5–1.85 mm long, acute, midrib sometimes glandular. *Paleas* persistent, keels scaberulous. *Anthers* 3, c. 0.25 mm long, c. 0.15 times as long as the lemma. *Caryopsis* ellipsoid, subterete to slightly laterally flattened, 0.5–0.65 mm long, pericarp smooth to finely reticulate, dark tea-coloured. 2n = 40.

Distribution — Originally European (?), now cosmopolitan, Malesia: e.g. Java (Jakarta, Surabaya, Pasuruan), Lesser Sunda Is. (Flores, Timor), Papua New Guinea (Madang Prov.), no doubt elsewhere.

Habitat — Weed in waste places and fields at low altitude; locally common.

Vernacular name — Little love grass.

Uses — Grazed by stock; famine cereal.

Notes — Similar to *E. cilianensis* (see there and the key) and *E. multicaulis*:

- Glands present on the sheaths, blades, panicle branches, and pedicels. Collar of sheaths pilose. Lower glume 0.8–1.25 mm long, 1-nerved. Paleas long-persistent ..... **14. E. minor**
- Glands absent. Collar of sheaths glabrous. Lower glume 0.3–0.7 mm long, 0-nerved. Paleas caducous ..... **16. E. multicaulis**

15. Eragrostis montana Balansa

Eragrostis montana Balansa (1890) 168. — Type: *Godefroy 487* (holo L; P).
Eragrostis malayana Stapf (1896) 317. — Lectotype: *Wray 773* (holo K), designated here.

Tufted perennials. *Culms* erect to geniculate, with new tufts at the nodes, but not rooting, branching intra- and extra-vaginally at base, 0.2–0.4(–0.6) m long, eglandular. *Sheath collar* pilose on the edges. Ligule a ciliolate rim. *Blades* 3.5–11.5 cm by 0.5–1.25 mm. *Panicles* contracted to lax, 4–7.5 by 0.5–2.5 cm, axils glabrous to pilose, branches solitary, erect to erecto-patent, the lowermost 1.2–2.5 cm long, naked in the lower 0.2–0.35th, scaberulous. *Pedicels* 0.5–3.25 mm long, distinctly to slightly shorter than the spikelet. *Spikelets* slightly laterally compressed, disarticulating from the base upward, rhachilla persistent, 2.75–4.5 by 1.5–2.25 mm. *Glumes* unequal, acute, 1-nerved; lower glumes 0.5–1 mm long, 0.4–0.65 times as long as the first lemma; upper glumes 0.75–1.35 mm long. *Lemmas* 1.1–1.5 mm long, acutish. *Paleas* persistent, keels ciliolate. *Anthers* 3, 0.2–0.35 mm long, 0.13–0.23 times as long as the lemma. *Caryopsis* ellipsoid, slightly laterally compressed, 0.55–0.6 mm long, pericarp smooth, dark tea-coloured. 2n = ?

Distribution — Andaman & Nicobars, Burma to S Vietnam, Malesia: Peninsular Malaysia (Kedah, Malacca, Pahang, Penang, Selangor), Singapore, Sumatra (Lampung: Martapura), Bangka, Borneo (Sarawak: Kuching, Lundu, Upper Rejang River; Sabah: Tenom; Kalimantan: Banjarmasin).

Habitat — Sunny, stony soil, often water-logged, in open forest, along roads, ditches, banks, 0–800 m altitude. Apparently growing together with *E. unioloides* (Retz.) Nees ex Steud.

Note — Similar to *E. unioloides*, see there.

16. Eragrostis multicaulis Steud.

Eragrostis multicaulis Steud. (Nov. 1854) 426. — *Glyceria airoides* Steud. (April 1854) 287, non Rchb. (1829). — *Eragrostis pilosa* (L.) P. Beauv. forma *multicaulis* (Steud.) I.C. Chung (1955) 210. — *Eragrostis pilosa* (L.) P. Beauv. subsp. *multicaulis* (Steud.) Tzvelev (1967) 45. — Lectotype: *Bürger s.n.* (holo L, sh. 908.97-2116, specimen super.), designated here.
Eragrostis pilosa auct. non P. Beauv.

Tufted annuals. *Culms* erect to geniculate, not rooting at the nodes, branching intravaginally at base, 0.1–0.3 m long, eglandular. *Sheath collar* glabrous or with a few hairs. Ligule a row of 0.25 mm long hairs. *Blades* 3–9 cm by 0.5–2.5 mm. *Panicles* contracted to somewhat lax, 4.5–9 by 1.5–3 cm, axils glabrous, lowermost branches solitary, fascicled, or (sub)verticillate, 1–4 together, erecto-patent to patent, smooth to slightly scaberulous, the lowermost longest 1.4–5.2 cm long, naked in the lower 0–0.33th. *Pedicels* 1–3 mm long, distinctly shorter than the spikelet. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 3.75–4.75 by 1.25–1.75 mm. *Glumes* unequal, acute; lower glumes 0.3–0.7 mm long, 0.17–0.45 times as long as the first lemma, 0-nerved; upper glumes 0.8–1.25 mm long, 1-nerved. *Lemmas* 1.5–1.85 mm long, slightly acuminate. *Paleas* shortly persistent, keels sparsely scaberulous. *Anthers* 3, 0.2–0.25 mm long, 0.11–0.16 times as long as the lemma. *Caryopsis* oblong, laterally flattened, 0.5–0.7 mm long, pericarp smooth, tea-coloured. 2n = 40.

Distribution — Pan(sub)tropical, possibly originally from E Asia, but Koch (1974) said it might be a native of America, introduced elsewhere, in Malesia: Peninsular Malaysia (Pahang, Perak), Bangka, Java (Bogor, Priangan, Pasuruan), Borneo (Sabah: Tawau), Lesser Sunda Is. (Flores), Philippines (Luzon: Mountain Province).

Habitat — Weed of waste places, old fields, along roads, dikes, old walls, 225–1150 m altitude.

Notes — The flowers appear to be cleistogamous, i.e. the anthers are enclosed with a developed fruit, and only late ejected.

Similar to *E. cilianensis*, see there. The distinction against *E. pilosa* varies among authors between 'good' species and mere forms. In Malesia the two seem separable (see the key).

17. Eragrostis nigra Nees ex Steud.

Eragrostis nigra Nees ex Steud. [(1840) 563, nomen]; (1854) 267. — Lectotype: *Wight Herb. 1782* (holo LE (*Herb. Trinius 2370.2*, microfiche IDC BT-16/1); CGE, K, NY, U) (see note), designated here.
Eragrostis abyssinica auct. non Link.

Coarsely tufted annuals. *Culms* erect, branching intra-vaginally at base, 0.35–0.65 (–1) m long, eglandular. *Sheath collar* pilose. Ligule a row of 0.25–0.5 mm long hairs. *Blades* 7.5–35 cm by 1.5–4.5 mm. *Panicles* lax, 17.5–30 by 8–12 cm, axils glabrous to pilose, branches erecto-patent to reflexed, solitary, smooth, the lowermost 4.5–6.5 cm long, naked in the lower 0.1–0.15th. *Pedicels* 2.25–7.5 mm long, usually longer than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 3.75–5.75 by 1.5–2 mm, lead coloured (i.s.). *Glumes* unequal, acuminate, 1-nerved; lower glume 1.35–2.1 mm long, 0.63–0.9 times as long as first

lemma; upper glume 1.75–2.15 mm long. *Lemmas* 2–2.5 mm long, acuminate. *Paleas* persistent, keels smooth to finely scaberulous. *Anthers* 3, 0.6–0.7 mm long, 0.3–0.4 times as long as the lemma. *Caryopsis* ellipsoid, laterally flattened, grooved on the hilar side, 0.6–0.85 mm long, pericarp finely reticulate, dark tea-coloured. 2n = 60.

Distribution — Sri Lanka, India to N, C, and S China; introduced 'long ago' (Backer (1927), but oldest collections are by Rant (L) and Ridley (K) both from Java in 1915): Java (Depok, Papandayan, Puncak, Cibodas, Gedeh, Cinyiruan, Burangrang, Tangkubangperahu, Tengger, Semeru, Pasuruan), Lesser Sunda Is. (Bali).

Habitat — In tea and *Cinchona* plantations, roads, forest margins, (90–)1400–2300 m altitude.

Uses — Readily eaten by cattle, with a high nitrogen content, but yield low.

Notes — According to most authors this would be a perennial, but except for its thick roots I see no evidence of this and think that it is a coarse, possibly long-living, annual.

The type was indicated by Steudel as "Nees ex Trin. mpt.", "Penins. Ind. Or." In the Trinius Herb. is a Wight collection marked "Pen. Ind. Or. (114)" by Nees, a duplicate is in NY. In CGE, K, and U there are sheets of *Herb. Wight propr. 1782*, labelled '*Eragrostis nigra NE*' by Nees, which may be duplicates of this.

The references in Malesian literature to *E. tef* (as *E. abyssinica*) may pertain to this species (e.g. by Backer (1922), imperceptibly corrected in 1927). For differences see the key.

18. **Eragrostis pectinacea** (Michx.) Nees

Eragrostis pectinacea (Michx.) Nees (1841a) 406 ("ad Er. pectinaceam spectans?" seems on the border of validity! Name not in Index p. 485); Michx. ex Steud. (1854) 272, isonym if Nees' combination is accepted. — *Poa pectinacea* Michx. (1803) 69. — Type: *Michaux s.n.* (holo P; US, fragm.).

For a full synonymy and extensive discussion, see Koch (1974: 30).

var. **pectinacea**

Description based on *Santos 6420.*

Tufted annuals. *Culms* geniculate, with new shoots at the nodes, not rooting, branching intra-vaginally at base, 0.35–0.4 m long. Sheaths, blades, panicle branches, pedicels eglandular. *Sheath collar* pilose. Ligule a ciliolate rim. *Blades* 3.75–7 cm by 0.8–1 mm. *Panicle* lax, 13–16 by 6–7 cm, at least the lower axils bearded, branches erecto-patent to patent; lowermost branches solitary, 6–6.5 cm long, naked in the lower 0.33–0.5th part; very minutely scaberulous. *Pedicels* 2.5–5 mm long, shorter than the spikelets. *Spikelets* laterally compressed, lemmas deciduous from the base upward, rhachilla persistent, 3.7–12 by 1.2–1.5 mm. *Glumes* unequal; lower glume 0.9–1.1 mm long, 0.56–0.7 times as long as first lemma, acute, 1-nerved; upper glume 1.2–1.3 mm long, acute, 1-nerved. First *lemma* 1.2–1.6 mm long, acute. *Paleas* persistent, keels scaberulous. *Anthers* 3, c. 0.2 mm long, c. 0.12 times as long as the lemma. *Caryopsis* ellipsoid, laterally somewhat flattened, dorsally not grooved, 0.8–0.9 mm long. Pericarp smooth, dark tea-coloured. 2n = 60.

Distribution — USA to Argentina, introduced elsewhere, e.g. in the Philippines (Luzon, c. 1956).

Habitat — Weed in improved pasture, sandy, gravely, loamy soils, altitude not recorded.

Vernacular names — Carolina or Tufted love grass.

Notes — The identification of *Santos 6420* (L, NY, US) is with some hesitation, as the collections are over-mature, yet with few well-developed caryopses.

The species may be confused with *E. pilosa*:

- Ligule a ciliolate rim. Lowermost panicle branches solitary. Pedicels shorter than the spikelets. Lower glume 0.9–1.1 mm long, 0.56–0.7 times as long as first lemma, 1-nerved. Paleas long-persistent ..... **18. E. pectinacea**
- Ligule a row of hairs. Lowermost panicle branches whorled. Pedicels as long as to longer than the spikelets. Lower glume 0.35–0.75 mm long, 0.27–0.38 times as long as first lemma, 0-nerved. Paleas caducous ..... **19. E. pilosa**

19. Eragrostis pilosa (L.) P. Beauv.

Eragrostis pilosa (L.) P. Beauv. (1812) 71, 162, 175; S.D. Koch (1974) 22, t. 7, pl. ii. — *Poa pilosa* L. (1753) 68. — Lectotype: *Scheuchzer, Agrostographia (1719) t. iv, f. 3*, designated by Koch (1974: 24) and Du Puy et al. (1993). — Epitype: *Kneucker 344* (holo B; L), designated by Scholz (2000).

Poa verticillata Cav. (1791) 63, t. 93. — *Eragrostis verticillata* (Cav.) P. Beauv. (1812) 162, 176 ('*? Willd.*'). — *Eragrostis pilosa* (L.) P. Beauv. var. *verticillata* (Cav.) Rchb. (1850) 52, t. 425. — *Eragrostis pilosa* (L.) P. Beauv. var. *glabra* Ducommun (1869) 872, nom. superfl. — Lectotype: *Herb. Cavanilles* (holo MA 9484-1), designated here (see also Garilleti, 1993).

Poa delicatior Steud. (1854) 256. — ['*Eragrostis*' Moritzi (1846) 100]. — Type: *Zollinger 1599* (holo P).

Poa indica J. König ex Rottler (1803) 194. — *Eragrostis indica* (Rottler) Willd. ex Steud. (1854) 264. — *Eragrostis verticillata* (Cav.) P. Beauv. var. *indica* (Rottler) Wight & Arn. ex Nees (1838) 253. — Type: *Rottler s.n. in Herb. Willdenow 1960/1* (holo B, IDC microfiche 7440; K; LE, *Klein in Herb. Trinius 2637.3*, microfiche IDC BT-16/1).

Tufted annuals. *Culms* erect to geniculate, not rooting at the nodes, branching intravaginally at base, (0.05–)0.25–0.5 m long, glandular or not (check under the nodes, midrib of sheath, blade, apex peduncle, base main axis and/or branches of the panicle). *Sheath collar* bearded on the edges. Ligule a row of c. 0.25 mm long hairs. *Blades* 3.5–18 cm by 0.35–3 mm. *Panicles* lax, 6–28 by 3.5–14 cm, at least the lower axils bearded, lowermost branches usually whorled, 3–10 together, the upper solitary, erecto-patent to patent, smooth to scaberulous, the lowermost longest 2.5–8.5 cm long, naked in the lower 0.16–0.46th. *Pedicels* 1–8 mm long, longer than to subequal to the spikelet. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 2.75–5.5 by 0.65–1.25 mm. *Glumes* unequal, acute; lower glumes 0.35–0.75 mm long, 0.27–0.38 times as long as the first lemma, 0-nerved; upper glumes 0.75–1.2 mm long, 1-nerved. *Lemmas* 1.2–1.75 mm long, somewhat acuminate. *Paleas* shortly persistent, keels sparsely scaberulous. *Anthers* 3, 0.15–0.2 mm long, 0.1–0.12 times as long as the lemma. *Caryopsis* ellipsoid, laterally flattened, 0.5–1 mm long, pericarp smooth, dark tea-coloured. 2n = 20, 40, 60.

Distribution — Temperate to tropical areas in the Old World, introduced in the New; Malesia: Peninsular Malaysia (Johor, Pahang, Penang, Selangor), Singapore, Sumatra (E Coast), Bangka, Java, Christmas Is., Borneo (Sarawak, Sabah, Banjar-

masin), Philippines (Luzon, Mindanao, Negros), Celebes (Menado), Lesser Sunda Is. (Flores, Timor), Papua New Guinea (Madang, Morobe, Northern, Central, New Britain, New Ireland Prov.), probably much more widely spread.

Habitat — Weed in waste places, near the shore, along roads, railroads, drought resistant, locally abundant, 0–2000 m altitude.

Uses — Said to be good cattle fodder and suitable for hay, but of little yield; famine cereal.

Vernacular names — Hairy or India love grass.

Notes — Florets often cleistogamous: anthers on top of the fruit, later pushed out by it.

In Malesia two forms appear to be present, one eglandular, the other (more common) variously glandular, e.g. under the nodes, midrib of sheath, blade, apex peduncle, base main axis and/or branches of the panicle. There appear to be no other differences.

Very close to *E. multicaulis* which has sometimes been united as a mere growth form of no status; see key for the differences.

Also similar to *E. pectinacea* (see there).

The cereal *E. tef* is thought to be derived from this (see there).

20. Eragrostis riparia (Willd.) P. Beauv.

Eragrostis riparia (Willd.) P. Beauv. (1812) 71, 162, 175; Nees (1829) 512, isonym. — *Poa ciliaris* Rottler (1803) 185, non L. (1759). — *Poa riparia* Willd. (1803) 185. — *Megastachya riparia* (Willd.) Roem. & Schult. (1817) 593. — *Eragrostis tenella* (L.) Roem. & Schult. var. *riparia* (Willd.) Stapf (1896) 315. — *Eragrostis amabilis* Nees var. *riparia* (Willd.) A. Camus (1923) 557. — Type: *Rottler s.n. in Herb. Willdenow 1940/2* (holo B, IDC microfiche 7440; K).
Eragrostis amboinica auct. non Steud.
Eragrostis mangalorica auct. non Steud.
Eragrostis viscosa auct. non Trin.

Description based on Philippine material.

Tufted perennials. *Culms* erect to geniculate, rarely with roots and new shoots at the nodes, sometimes branched at the higher nodes, branching intra- and extra-vaginally at base, 0.1–0.3 m long. Glands present on the peduncle and main axis. *Sheath collar* glabrous or pilose. Ligule a ciliolate rim. *Blades* erecto-patent to strongly reflexed, involute to c. flat, 1.5–7 cm by 0.8–3.2 mm wide. *Panicle* contracted to interrupted, then lobed at base, 1.3–3.5 by 0.35–1.2 cm, the lower axils glabrous or bearded, branches appressed or erecto-patent, smooth, lowermost one solitary, 0.6–0.9 cm long, naked in the lower 0.15–0.2th part. *Pedicels* 0.1–1 mm long, much shorter than the spikelets. *Spikelets* laterally compressed, disarticulating from above downward, rhachilla fragile, florets fragmenting, 1.8–2.3 by 0.6–1.1 mm. *Glumes* subequal, acute, 1-nerved; lower glume 0.7–0.8 mm long, 0.67–0.72 times as long as first lemma; upper glume 0.8–1 mm long. First *lemma* 0.9–1 mm long, acute to truncate, sometimes apiculate, nerves close to margin, midrib glabrous. *Paleas* caducous, keels setose (setae c. 0.2 mm long). *Anthers* 3, 0.2–0.3 mm long, 0.2–0.3 times as long as the lemma. *Caryopsis* ellipsoid, terete, dorsally not grooved, c. 0.5 mm long; pericarp smooth, dark tea-coloured.

Distribution — Sri Lanka, S India, Malesia: Philippines (Luzon).

Notes — It has been argued that the correct name for this species would be *E. amboinica* (L.) Trin. ex Steud., but the basionym (*Poa amboinica* L.) is a nomen dubium (Veldkamp, 1992).

Spikelets sometimes smutted by *Bipolaris spec.*

Jansen (1953) casually mentioned that "This perennial species is rather rare in Malaysia (i.e. Malesia, JFV). Besides some specimens from the Philippines I saw some from British New Guinea, *Fitzgerald 2a.*" In his manuscript he had added 'Medan' to the latter and this makes clear that this did not come from New Guinea, for Fitzgerald collected on a Medan Stock Farm in W Australia. (Mr. P. Jobson, NSW, in litt.). Its present identity could not be ascertained.

Some Philippine specimens in NY were labelled *E. riparia* by Jansen:

- *BS 7452 (Ramos)*: Luzon, Cagaya(n) Prov., March 1909;
- *BS 15784 (Clemens)*: Luzon, Ilicos Sur Prov., May–June 1925;
- *Merrill 371*: Luzon, Manila, August 1902. Prostrate in dry soil, culms viscid (which probably caused Merrill to identify it with *E. viscosa* in 1906: 383; in 1923: 90 he included it under *E. mangalorica*).

The collections *BS 7452 (Ramos)* and *BS 15784 (Clemens)* differ slightly from *Merrill 371*, whereby it may be noted that the pubescence of leaf throat and inflorescence axils are often used as of specific value in keys of *Eragrostis*:

- Collar of sheaths glabrous. Blades 1.5–3.5 cm long. Panicles with at least the lower axils glabrous, branches appressed. First lemma truncate, obtuse, or apiculate ..... *BS 7452 (Ramos), BS 15784 (Clemens)*
- Collar of sheaths pilose. Blades 4–7 cm long. Panicles with at least the lower axils bearded, branches erecto-patent. First lemma acute ..... *Merrill 371*

Whether the Philippine specimens actually belong to *E. riparia* is not clear to me, but it seems the best match. Otherwise *E. riparia* occurs in Sri Lanka and S India. Reports for other areas are based in misidentifications, e.g. that by Jansen for New Guinea mentioned above, and by Bor (1940) for Assam refer to *E. amabilis* (see also Bor, 1960, and Shukla, 1996), for differences see there.

In Sri Lanka two forms occur, the first seems to be the typical one:

- Glands absent below and in the inflorescence. Upper glume 1.3–1.4 mm long. First lemma 1.2–1.4 mm long ..... **E. riparia 1**
- Glands present on the inflorescence branches and pedicels. Upper glume 0.6–0.9 mm long. First lemma 0.7–1 mm long ..... **E. riparia 2**

The Philippine specimens agree best with the latter, except that they have the glands on the peduncle and main axis of the inflorescence. This presence is curious, as in the obviously related *E. amabilis* the glands, when present, are on the branches and pedicels as in *E. riparia 1*.

It is remarkable that this species occurred in various places in Luzon between 1902 and 1925, even in Manila, and has not been collected since, although its condensed inflorescence would immediately be noticed by experienced agrostologists such as Merrill and J. V. Santos.

21. Eragrostis tef (Zuccagni) Trotter

Eragrostis tef (Zuccagni) Trotter (1918) 62. — *Poa tef* Zuccagni (1774). — *Eragrostis pilosa* (L.) P. Beauv. var. *tef* (Zuccagni) Fiori (1923) 123. — Type: *Bruce s.n.* (holo FI).

Poa abyssinica Jacq. (1781) 364. — *Poa cerealis* Salisb. (1796) 20, nom. superfl. — *Cynodon abyssinicus* (Jacq.) Raspail (1825) 302. — *Eragrostis abyssinica* (Jacq.) Link (1827) 192, '*abessinica*'; Schrad. (1838), orthogr. corr. — *Eragrostis pilosa* (L.) P. Beauv. subsp. *abyssinica* (Jacq.) Asch. & Graebn. (1900) 374. — Type: Not indicated (holo presumably in W).

Eragrostis tenellula auct. non Steud.

Annuals. *Culms* few together, erect, not rooting in the lower nodes, branching intravaginally at base, 0.2–0.9 m long, eglandular. *Sheath collar* glabrous or bearded on the edges. Ligule a row of c. 0.25 mm long hairs. *Blades* 9–30 cm by 1.25–4 mm. *Panicles* contracted to effuse, 10–40 by 2.5–20 cm, at least the lower axils bearded, lowermost branches usually whorled, 3–10 together, the upper becoming solitary, loosely appressed to reflexed, scaberulous, the lowermost longest 9–20 cm long, naked in the lower 0.4–0.5th. *Pedicels* 8–20 mm long, longer than the spikelet. *Spikelets* laterally compressed, tardily disarticulating from the base upward, rhachilla persistent, 4.5–9 by 1.25–2 mm. *Glumes* unequal, acute, 1-nerved; lower glumes 1.2–2.75 mm long, 0.55–0.8 times as long as the first lemma; upper glumes 1.7–3.3 mm long. *Lemmas* 2–3.7 mm long, acuminate. *Paleas* persistent, keels scaberulous. *Anthers* 3, 0.35–0.6 mm long, 0.1–0.14 times as long as the lemma. *Caryopsis* tardily deciduous, ellipsoid, laterally flattened, dorsally not grooved, 1–1.5 mm long, pericarp smooth, dark tea-coloured. 2n = 40.

Distribution — Originally from tropical Africa (Ethiopia), cultivated and escaping elsewhere; Malesia, e.g. Java.

Habitat — Fields and weedy places, 750–2500 m altitude.

Uses — Staple cereal in Ethiopia; cultivated as a fodder grass elsewhere (see Jansen, 1996).

Vernacular names — Abyssinian love grass, Teff.

Notes — Flowers often cleistogamous.

A synonym, *E. abyssinica*, has been misused for *E. nigra*. Possibly the references to the more recent occurrences to *E. tef* actually refer to that. I have seen only a single collection of *E. tef* made by Reinwardt in 1818 (L), the basis for *E. tenellula* auct. non Steud.

Thought to have been derived from *E. pilosa*, differing as follows:

- Culms tufted, geniculate, with new shoots at the nodes, not rooting. Lowermost longest panicle branch 2.5–8.5 cm long. Spikelets easily breaking up. Lower glume 0.35–0.75 mm long, 0.27–0.38 times as long as first lemma, 0-nerved; upper glume 0.75–1.2 mm long. First lemma 1.2–1.75 mm long. Paleas caducous. Anthers 0.15–0.2 mm long. Caryopsis not swollen, easily caducous from between the lemma and palea ..... **19. E. pilosa**
- Culms tufted and erect, or with solitary or a few erect culms. Lowermost longest panicle branch 9–20 cm long. Spikelets tardily breaking up. Lower glume 1.2–2.75 mm long, 0.55–0.8 times as long as first lemma, 1-nerved; upper glume 1.7–3.3 mm long. First lemma 2–3.7 mm long. Paleas long-persistent. Anthers 0.35–0.6 mm long. Caryopsis swollen, persistent between the lemma and palea ..... **21. E. tef**

22. Eragrostis tenuifolia (A. Rich.) Steud.

Eragrostis tenuifolia (A. Rich.) Steud. (1854) 268. — *Poa tenuifolia* A. Rich. (1851) 425. — Lectotype: *Schimper 92* (holo P; K, L, WAG), designated by Phillips (1995).

Tufted (long-living) annuals. *Culms* erect or geniculate, then with shoots and roots at the lower nodes, branching intra-vaginally at base, 0.5–0.8 m long, eglandular. *Sheath collar* pilose. Ligule a row of c. 0.25 mm long hairs. *Blades* 6–22 cm by 0.5–2 mm. *Panicles* lax, 10.5–20 by 4.5–9 cm, axils pilose, branches erecto-patent, solitary, stiff, scaberulous, the lowermost 5–8 cm long, naked in the lower 0.25–0.3th. *Pedicels* 3.5–12 mm long, longer than the spikelets. *Spikelets* laterally compressed, disarticulating from the base upward, rhachilla persistent, 6.5–12 by 2.25–2.75 mm. *Glumes* unequal, acute, 0-nerved; lower glume 0.5–0.75 mm long, 0.2–0.3 times as long as first lemma; upper glume 0.75–1.25 mm long. *Lemmas* 2.2–2.5 mm long, acuminate. *Paleas* persistent, keels scaberulous. *Anthers* 3, 0.4–0.6 mm long, 0.19–0.27 times as long as the lemma. *Caryopsis* ellipsoid, strongly laterally flattened, dorsally grooved, 1–1.25 mm long, pericarp smooth, dark tea-coloured. 2n = 40.

Distribution — Tropical Africa, Madagascar, Sri Lanka, India to Vietnam, introduced elsewhere, e.g. Australia, S America, Malesia: Sumatra (Padang, July 1999), Borneo (Sabah: Tenom, March 2001), Philippines (Mindanao; see Veldkamp, 1999), New Guinea (Irian Jaya: Anggi, Jayawijaya; Papua New Guinea: now all over, first collection apparently *Brass 32250* (L) in 1959, Eastern Highlands).

Habitat — Weed of roadsides, disturbed places, abandoned gardens, etc., (600–) 730–2700 m altitude.

Uses — Eaten by cattle, but resistant to efficient mowing and difficult to pull up by hand, often a noxious weed along roadsides, etc.

Vernacular name — Elastic grass.

Notes — Flowers cleistogamous, anthers ejected by or glued to the ripening fruit. Spikelets occasionally smutted by *Bipolaris spec.*

Easily recognisable by the tufts of hairs in the axils of the panicle branches, the fairly large, dark, jagged spikelets with a relatively short lower glume, and the very flat, dorsally grooved caryopses.

Most similar to *E. pilosa*:

- Culms tufted, geniculate, with new shoots at the nodes, not rooting. Lowermost panicle branches whorled. Spikelets 2.75–5.5 by 0.65–1.25 mm. Upper glume 1-nerved. First lemma 1.2–1.75 mm long. Paleas caducous. Anthers 0.15–0.2 mm long, 0.1–0.12 times as long as the lemma. Caryopsis laterally somewhat flattened, dorsally not grooved, 0.5–1 mm long ..... **19. E. pilosa**
- Culms tufted, erect. Lowermost panicle branches solitary. Spikelets 6.5–12 by 2.25–2.75 mm. Upper glume 0-nerved. First lemma 2.2–2.5 mm long. Paleas long-persistent. Anthers 0.4–0.6 mm long, 0.19–0.27 times as long as the lemma. Caryopsis laterally very flat, dorsally grooved, 1.15–1.25 mm long **22. E. tenuifolia**

23. Eragrostis unioloides (Retz.) Nees ex Steud.

Eragrostis unioloides (Retz.) Nees ex Steud. (1854) 264. — *Poa unioloides* Retz. (1788, '1789') 19. — *Uniola indica* Spreng. (1824) 349, nom. superfl. — *König s.n. in Herb. Retzius* (holo LD, photo & fragm. in BRI, fragm. in K, neg. 6893).

Poa rubens Lam. (1791) 184. — *Eragrostis rubens* (Lam.) Hochst. in Hohen. (1847) *Metz 133*, pro comb. (label of exsicc. series!; effective under Art. 30.4, 31.1); ((1849) 495, nomen). — Type: *Sonnerat (?) s.n. in Herb. Lamarck* (holo P, microfiche IDC 6207, fiche 710/8).

Eragrostis amabilis (L.) Nees var. *contracta* Buse (1854a) 9; (1854b) 349. — *Eragrostis rubens* Hochst. var. *contracta* Miq. (1857) 391. — Lectotype: *Junghuhn s.n.* (holo L, no. 904.84-17), designated here.

Eragrostis amabilis (L.) Nees var. *effusa* Buse (1854a) 8; (1854b) 348. — *Eragrostis rubens* Hochst. var. *effusa* Miq. (1857) 391, pro comb. — Lectotype: *Junghuhn s.n.* (holo L, no. 904.84-35), designated here.

Eragrostis amabilis (L.) Nees var. *prostrata* Buse (1854a) 9; (1854b) 349. — Lectotype: *Zollinger 232* (holo L; K, P), designated here.

Eragrostis amabilis (L.) Nees var. *scabriuscula* Buse (1854a) 9; (1854b) 349. — *Eragrostis rubens* Hochst. var. *scabriuscula* Miq. (1857) 391. — Lectotype: *Junghuhn s.n.* (holo L, no. 904.84-32), designated here.

Eragrostis euchroa Steud. (April 1854) 267. — Lectotype: *Cuming 2420* (holo P; K, L), designated here.

Eragrostis rubens (Lam.) Hochst. forma *linearis* Boerl. (1890) 74. — Type: Not indicated, 'Buitenzorg, December' (holo BO?, n.v.).

Eragrostis amabilis auct. non Nees.

Poa amabilis auct. non L.

Tufted perennials. *Culms* geniculate, rooting in the decumbent nodes sending up new tufts, branching intra-vaginally at base, 0.1–0.6(–0.8) m long, eglandular. *Sheath collar* pilose on the edges. Ligule a ciliolate rim. *Blades* (2–)3–12(–20) cm by 2–8 mm. *Panicles* very variable, usually lax, sometimes contracted and interrupted, 5–17 by 2–6.5 cm, axils glabrous, branches solitary, erecto-patent to patent, stiff, smooth to scaberulous, the lowermost 1.5–6.5 cm long, naked in the lower 0.05–0.14th. *Pedicels* 0.5–6 mm long, much shorter to longer than the spikelet. *Spikelets* strongly laterally compressed, disarticulating from the base upward, rhachilla persistent, 2–7.75(–16) by 1.25–4 mm. *Glumes* unequal, acute, 1-nerved; lower glumes 0.75–1.3 mm long, 0.45–0.72 times as long as the first lemma; upper glumes 1.25–1.65 mm long. *Lemmas* 1.25–1.7 mm long (see note), acutish, strongly 3-nerved, granular, often pinkish. *Palea* soon caducous, keels ciliolate. *Anthers* 2, ellipsoid, 0.3–0.45 mm long, 0.2–0.3 times as long as the lemma. *Caryopsis* ellipsoid, laterally compressed, 0.6–1 mm long, pericarp smooth, dark tea-coloured. 2n = 18, 20.

Distribution — Originally probably from SE Asia, now pantropical, widely spread especially in W Malesia to the Philippines (Busuanga Is., Luzon, Mindanao, Mindoro, Negros), not known from Madura, Kangean Is., Moluccas (Amboina only, already found by Dumont d'Urville in 1823, P); apparently introduced in New Guinea in the 1950s (Irian Jaya: Biak, Tanah Merah; Papua New Guinea: W Sepik: Aitape; Manus; N Solomons Prov.: Jaba River).

Habitat — Moderately shaded to moist places, roadsides, fields, sawahs, locally abundant, 0–1250 m altitude. Said to be an indicator of impoverished or degraded soil (Schmid, 1958; Hacker et al., 1998).

Uses — Used as a forage, but not of great importance, not withstanding heavy grazing.

Vernacular name — Chinese love grass.

Notes — Best recognised by the flat, rather broad, often pinkish spikelets and the granular lemmas.

A very variable species in the shape and structure of the panicle and spikelets, but varieties as distinguished by Buse, followed by Miquel, cannot be upheld.

Sometimes some lemmas are much enlarged due to an infection by a gall fly (Monod de Froideville on *Meijer 5987*, L).

Most similar to *E. montana*:

- Culms branching intra- and extra-vaginally at base. Blades 0.5–1.25 mm wide. Lowermost longest panicle branch naked in the lower 0.2–0.35th part. Spikelets laterally compressed. Lemmas somewhat swollen, not granular. Paleas long-persistent. Anthers 3 ..... **15. E. montana**
- Culms branching intra-vaginally at base. Blades 2–8 mm wide. Lowermost longest panicle branch naked in the lower 0.05–0.14th part. Spikelets strongly laterally compressed. Lemmas flat, granular. Paleas caducous. Anthers 2 .... **23. E. unioloides**

24. Eragrostis warburgii Hack.

Eragrostis warburgii Hack. (1890) 262. — Lectotype: *Warburg 17049* (holo W; L, fragm.), designated here.

Eragrostis timorensis Henrard (1922) 240. — Type: *R. Brown s.n.* (holo L, sh. 908.89-578; BM).

Tufted perennials (or long-living annuals?). *Culms* erect, not rooting in the lower nodes, branching intra- and extra-vaginally at base, 0.4–0.5 m long, eglandular. *Sheath collar* glabrous or sometimes with a few hairs. Ligule a ciliolate rim. *Blades* 5.5–13.5 cm by 1.2–2.5 mm. *Panicles* contracted to lax, 7–25.5 by 0.5–5 cm, axils glabrous to pilose, branches solitary, erect to erecto-patent, subsmooth to scaberulous, the lowermost 35–50 mm long. *Pedicels* 1.25–5 mm long, distinctly longer than the spikelet. *Spikelets* laterally compressed, disarticulating from above downward, floret falling as a whole, rhachilla fragile, 2.15–3.5 by 1.1–1.75 mm. *Glumes* subequal, acute, 1-nerved; lower glumes 0.65–1.25 mm long, 0.7–0.83 times as long as the first lemma; upper glumes 1–1.25 mm long. *Lemmas* 1–1.35 mm long, subtruncate, muticous to shortly mucronate. *Palea* caducous, keels setose (setae 0.2–0.4 mm long). *Anthers* 2 or 3, 0.2–0.3 mm long, 0.16–0.24 times as long as the lemma. *Caryopsis* ellipsoid, terete, 0.45–0.75 mm long, pericarp smooth, orangish to dark tea-coloured. 2n = ?

Distribution — Malesia: Kangean, Celebes (Muna, Tukan Besi Is.), Lesser Sunda Is. (Timor), Moluccas (Kai Dular Is.).

Habitat — On coral sand, loam, waysides, 0–200 m altitude.

Note — Very similar to *E. amabilis* (see key) and especially its var. *insularis* (see under *E. amabilis*).

NOMINA DUBIA VEL MALESIA EXCLUDENDA

1. *Eragrostis amboinica* (L.) Trin. ex Steud. (1840) 652. — *Poa amboinica* L. (1771) 557.

Note — Nomen dubium, as the basionym (*Poa amboinica* L.) is a nomen dubium, see note under *E. riparia*, above.

2. *Eragrostis carolinensis* Jedwabn. (1924) 198. — Type: *Volkens 430* (holo B, lost), Yap, Mission Sta. Cruz, Machabal.
= ?

Note — Jansen (msc.) does not mention this name. Unknown to Fosberg (in litt.). Type number not mentioned by Volkens (1901). Said to have c. 4 mm long lemmas (longer than any known in Malesia) with c. 2 mm long paleas. Not found under *Eragrostis* in A, B, BISH, BRI, K, L, M, MO, NSW, P, U, US. Perhaps a species of *Leptochloa* P. Beauv., but not noticed by Snow (in litt.)

3. *Eragrostis ciliaris* (L.) R.Br. (1818) 478; Link (1827) 192; Nees (1829) 512, isonyms. — *Poa ciliaris* L. (1759) 875. — *Megastachya ciliaris* P. Beauv. (1812) 74, 167, 174. — *Eragrostis villosa* Trin. (1820) 137, nom. superfl. — *Cynodon ciliaris* Raspail (1825) 302. — *Erosion ciliare* Lunell (1915) 221. — Lectotype: *P. Browne in Herb. Linn. 87.66* (holo LINN, microfiche IDC; *Herb. Ehrhart 579*, MW), designated by Hitchcock (1908).

Note — The single record from Java of 'Gophertail love grass' is a collection by *Molhuysen (4/1903*, Besuki), whose herbarium (WAG) contains several other exotics never found in Java again (Van Steenis-Kruseman, 1950).

4. *Eragrostis eriopoda* Benth. (1878) 648. — Lectotype: *Walcot s.n.* (holo K), designated by Lazarides (1997: 116).

Note — Erroneously (Simon in litt.) mentioned for New Guinea by Simon (1978).

5. *Eragrostis hasskarlii* Steud. (1854) 265, *'hasskarli'*. — *Poa ciliata* Hassk. (1844) 18. — Type: (holo BO?; extant?).
= ? *Eragrostis spec.*

Notes — Jansen (msc.) thought it might perhaps be *E. ciliata* (Roxb.) Nees, but a "panicula patentissima ramis gracilibus" is absent in that species, which, moreover, has otherwise never been found in Malesia. The "valvulis longiter et retrorsum patenti-ciliata" suggests *E. amabilis* or *E. japonica.*

Where Steudel obtained the information that it would have come from 'Batavia' is not clear and perhaps erroneous.

Dr. E.A. Widjaja (in litt.) did not find a specimen in BO.

6. *Eragrostis maypurensis* (Kunth) Steud. (1854) 276. — *Poa maypurensis* Kunth (1816) 161. — *Megastachya maypurensis* Roem. & Schult. (1817) 588. — Type: *Humboldt & Bonpland s.n.* (holo P, but not found in microfiche IDC 6209; B?).

Note — Reported as introduced in Java (Jedwabnick, 1924: 199) (*Warburg 2599*), which I have not seen. This S American species was never found in Malesia again.

7. *Eragrostis parviflora* (R.Br.) Trin. (1830) 411. — *Poa parviflora* R.Br. (1810) 180. — *Poa micrantha* Spreng. (late 1824) 344, non Schult. (Jan./April 1824). — Type: *R. Brown 6275* (holo BM, fragm. in BRI; E, K, photo & fragm. in BRI).

Note — Erroneously (Simon in litt.) mentioned for New Guinea by Simon (1978).

8. *Eragrostis pilosissima* Link (1827) 189. — Type: *Cultivated in B* (holo extant?).
Eragrostis millettii Nees (1838) 252. — Syntypes: *Millett s.n.* (OXF?, not found,

Ms. Marner, in litt.), *Vachell 54* (not in CGE, OXF; in K a collection without number).

Note — Mentioned for Malesia by Walker (1976), but no record of this Taiwan, Vietnam, S Chinese species was seen.

9. *Eragrostis sororia* Domin (1915) 399, t. 16, f. 1–5. — Type: *Domin II, 1910* (holo PRC, K neg. 20383).

Note — Erroneously (Wheeler in litt.) reported by D.J.B. Wheeler et al. (1990) for New Guinea.

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INDEX TO SPECIMENS

Only numbered or dated specimens could be included. Identifications between brackets have not been seen and are based on circumstantial evidence.

ama = *amabilis* (L.) Wight & Arn. ex Nees
asp = *aspera* (Jacq.) Nees ex Steud. (none mentioned)
atr = *atrovirens* (Desf.) Trin. ex Steud.
bro = *brownii* (Kunth) Nees
cil = *cilianensis* (Bellardi) Vignolo ex Janch.
cki = *cumingii* Steud. var. *kisarensis* Jansen
cum = *cumingii* Steud.
cur = *curvula* (Schrad.) Nees
dia = *diandra* (R.Br.) Steud.
gan = *gangetica* (Roxb.) Steud.
jap = *japonica* (Thunb.) Trin.
las = *lasioclada* Merr.
luz = *luzoniensis* Steud.
min = *minor* Host
mon = *montana* Balansa
mul = *multicaulis* Steud.
nig = *nigra* Nees ex Steud.
pec = *pectinacea* (Michx.) Michx. ex Steud.
pil = *pilosa* (L.) P. Beauv. (egl: eglandular, gl: glandular form)
rip = *riparia* (Willd.) P. Beauv.
tef = *tef* (Zuccagni) Trotter (none mentioned)
tnf = *tenuifolia* (A. Rich.) Steud.
uni = *unioloides* (Retz.) Nees ex Steud.
war = *warburgii* Hack.

Adj. Veearts Gorontalo 19: ama — Aet 797: uni — Aet & Idjan 119: cum; 121: ama — Afriastini 1616: ama; 1839: (ama) — Alder 6/1979: bro — Alphonso 25/5/1972: atr — Alston 15125: atr; 15988: ama — Amdjah 93: uni — Anang 304: (ama); 565: ama — Andrews 6: ama — Anta 439: atr; 615: atr; 883: uni — ANU 5848 (Wheeler): tnf; 6197 (Wheeler): bro; 6199 (Wheeler): tnf; 13028 (Wace): tnf; 15348 (J.M.B. Smith): tnf — Arends 14 Feb. 1973: atr.
Backer 25/1/1903: uni; 4/1903: uni; 9/1904: jap; 1146: cum; 1376: cum; 4363: jap; 4756: jap; 6039: uni; 6876: (ama); 6960: (ama); 7618: min; 7719: cil; 7720: jap; 7904: ama; 7905: uni; 8029: jap; 8149: ama; 8212: uni; 10545: atr; 11623: (ama); 11679: (ama); 11696: (ama); 13012: (ama); 15224: (ama); 15303: jap; 16789: ama; 16842: jap; 17773: (ama); 18324: (ama); 19136:

(ama); 19435: ama; 19532: (ama); 19711: (ama); 19739: (ama); 19847: (ama); 20186: atr; 20423: (ama); 20650: ama; 20853: bro; 21394: (ama); 21473: atr; 22806: atr; 23084: atr; 24065: cum; 24153: (ama); 24164: (ama); 24353: (ama); 24472: (ama); 24544: (ama); 27031: (ama); 27247: (ama); 27619: jap; 28057: (ama); 28222: (ama); 28669: (ama); 29090: ama; 30140: ama; 30961: (ama); 31550: cum; 32120: (ama); 32737: (ama); 32738: (ama); 36075: min; 36076: nig; 36366: jap; 36709: nig; 36773: pil (egl); 36955: cil; 37008: cil; 37152: min; 37193: cum; 37194: nig; 37341: cum; 37557: ama; A-48: cil — Bakhuizen van den Brink 4/1917: atr; 3a: atr; 94a: uni; 99: uni; 110: uni; 154: atr; 432: uni; 446: mul; 545: uni; 663: uni; 875: pil (gl); 1110: pil (gl); 1115: cum; 1156: uni; 1464: nig; 1681: mul; 2760: ama; 2986: uni; 3812: uni; 3814: cum; 3829: uni; 4595: nig; 5071: atr; 5183: uni; 5268: pil (gl); 6357: cum; 6537: pil (gl); 6660: uni; 8162: ama; 8163: pil (egl); 8164: mul; 8165: pil (egl) — Balansa 20/11/1886: pil (egl) — Bartlett 8722: ama — Bartlett & La Rue 15: uni; 63: uni; 321: uni; 379: pil (gl) — Beaman 6911: uni — Beccari B-864: pil (gl) — Beguin 23: uni; 24: atr; 30: pil (egl); 56: cil; 57: (ama); 196: ama; 654: (ama); 1836: (ama); 2292: (ama); 2328: (ama) — BF 3423 (Ahern's Collector): uni; 4171 (Curran): ama; 5886 (Curran): uni; 15970 (Bacani): atr; 16160 (Curran et al.): cum; 16453 (Bacani): luz — Bicknell 1478: tnf — Blewett 31: uni — Bloembergen 3281: ama; 3840 (T): cki; 3850-bis: cki — Boerlage 2/10/1888: mul; 29/10/1888: uni; 129: uni — Bor S-8: uni; S-56: bro; S-56A: bro; S-58: ama; S-60: atr — Boschma 190: (ama); 227: (ama); 329: (ama); 356: (ama) — Bowers 857: tnf — Bradtke 12: pil (gl); 114: jap — Brass 3758: pil (gl); 5829: bro; 6046: bro; 6541: bro; 7520: bro; 7853: bro; 7879 (T): las; 8348: las; 8349: bro; 11724: bro; 21882: bro; 24428: ama; 25151: bro; 25973: bro; 26030: ama; 32250: tnf — Brinkman 5/1994: pil; 87: (ama) — Brooke 8231: uni; 9425: atr; 9433: uni; 9817: mon/uni; 9836: atr — Brown 1: pil; 6: uni — BS 156 (Foxworthy): ama; 264-bis (Villamil): atr; 468 (Mangubat): jap; 1829 (Ramos): jap; 2067 (Ramos) (T): cum; 2080 (Ramos): ama; 2089 (Ramos): ama; 3635 (Fénix): ama; 4331 (Merrill): bro; 4462 (Merrill) atr; 4472 (Merrill): cum; 4805 (Ramos): ama; 4821 (Ramos): cum; 4894 (Ramos): atr; 6634 (Robinson): jap; 7042 (Ramos): atr; 7055 (Merrill): bro; 7322 (Merrill): jap; 7452 (Ramos): rip; 7913 (Ramos): atr; 7920 (Ramos): jap; 9284 (Merrill): cum; 9321 (Merrill): luz; 9789 (Merrill): luz; 11687 (Robinson): ama; 14201 (McGregor): bro; 14212 (McGregor): atr; 14569 (Ramos): ama; 15591 (Fénix): jap; 15677 (Fénix): jap; 16671 (Clemens): jap; 19189 (Reillo): cum; 24203 (Ramos): jap; 27538 (Ramos): jap; 28044 (Fénix): jap; 31807 (Santos): atr; 32700 (Ramos): atr; 32780 (Ramos): bro; 40523 (Ramos & Edaño): cum; 41432 (McGregor): atr; 44552 (Ramos & Edaño): ama; 44687 (Ramos & Edaño): cum; 47005 (Ramos & Edaño): ama; 76903 (Ramos): bro; 76924 (Ramos): bro; 78761 (Ramos): ama; 78769 (Ramos): cum — Bünnemeijer 1044: uni; 1398: bro; 1404: atr; 1524: ama; 1588: uni; 2344: atr; 2494: mon; 3719: uni; 3726: uni; 4787: uni; 5765: uni; 6907: uni; 6909: atr; 7051: atr; 7396: uni; 7401: atr; 7499: uni; 7836: uni; 8172: uni; 10650: uni; 10785: uni; 11026: uni — Burkill 79: atr; 1606: atr; 3293: atr; 4648: uni — Buwalda 2841: uni; 2888: ama; 2894: cum; 3360: ama; 4016: ama; 4068: bro; 4082: bro; 4111: ama; 4530: bro; 5306 (T): las; 5524: las; 5526: bro/las; 5526-A: las; 7867: uni; 8008: uni; 8020: pil (egl); 8033: uni; 8039: atr — BW 716 (Versteegh): bro; 8325 (Versteegh & Vink): uni.

Cadigan G-16: uni — Cantley's coll. 3057: cum/mal — Carni 19: ama; 39: min — Carr 11105 (T): bro; 11111: ?cum; 11371: ama; 11402: ama; 11431: bro — Carrick & Enoch 177: mon; 179: uni; 284: uni — Chan 15 July 1984: uni — Chin & Mustafa 3329: uni — Church et al. 1144: gan — Cinatti 135: min; 307: jap — Clason 70: ama; 247: jap; A28: cum; A33: jap; C9: pil (gl); C15: jap — Clason-Laarman 94: ama — Clemens 9457: uni; 9561: pil (gl); 9586: pil (gl); 15784: rip; 18203: bro; 18219: jap; 18233: bro; 20555: ama; 20555-bis: uni; 21312: uni; 21314: mon; 21340: pil (gl); 30284: uni — Co 1946: uni — Coert 22: jap; 47: ama; 276: jap; 287: atr; 338: jap; 341: jap; 397: jap; 595: nig; 854: uni; 1088: cil; 1659: cum; 1708: uni; 1729: cum; 1751: uni; 1764: uni; 1773: cum; 1786: ama; 1796: uni — Colfs 255: ama — Coode 3668: tnf; 3769: pil (egl); 3778: pil (egl) — Corlett & Chan 31 Aug. 1984: atr — Corner 23 Aug. 1935: cum; 25 Aug. 1941: cum; 6 Sept. 1941: uni — Craven & Schodde 718: ama; 912: ama; 929: bro; 1006: ama — Creagh 17/4/1895: atr — Cruttwell 141: ama; 651: bro; 1583: tnf; 1608: bro; 1621: ama; 1654: dia — Cuming 545 (T): jap; 668 (T): bro; 672 (ST): cum; 714: ama;

1104 (LT): cum; 1416 (T): luz; 1669 (T): jap; 1782: cil; 2420 (T): uni; 2454: uni — Curtis 1800: uni; 1804: pil; 1805: cum; 1827: ama; 1898: pil; 2169: ama.

Danser 5538: bro; 5647: uni; 6454: atr; 6587: bro — Darbyshire 385: ama; 938: ama — Darbyshire & Hoogland 7847: uni — De Groot Ps-27: (ama) — De Joncheere 1004: ama — De la Savinière 118: ama; 586: uni; 1233: cum; 1632: ama — De Vogel 4534: ama — De Voogd 1755: ama; 2379: ama; 2440: (ama); 2495: cum — De Wilde & De Wilde-Duyfjes 12655: uni; 13555: cum; 14477: atr — De Wit 4028/4032: ama; 4044/4046: ama; 4050: nig; 4106: uni; 4133: nig; 4196: cum; 4207: uni — Deguchi et al. 6269: ama — Demoulin 5570: tnf — Den Hoed 3053: ama — Dihm 116: uni — Dissing 2633: ama; 2679: bro; 2718: pil (gl) — Docters van Leeuwen 1607: ama — Docters van Leeuwen-Reijnvaan 5242: (ama); 7854: (ama); 12605: (ama) — Dorgelo 544: min; 552: jap; 2003: jap; 3099: jap; 3099a: jap; 3164: jap; 3168: pil (gl); 3258: (ama); Gr.12: ama.

Elbert 536: ama; 537: cum; 1276 (T): cum; 1336: cum; 1534: cum; 2006: cil; 2022: ama; 2075: cil; 2518: war; 2924: war; 3081: las; 4013: bro — Elmer 5681: ama; 5760: atr; 6608 (T): cum; 14384: ama; 14531: uni; 22348: bro; 22359: atr — Endert 1682: uni — Enoch 2730: bro — Enoh 392: ama; 413: atr — Erkelens & Coert 396: jap — Eyma 1766: ama; 4107: uni.

Farinas 119: luz; 120: bro — Forman 963: uni; 976: atr — Forster 4: uni; 8: atr; 15: uni; 20: bro; 21: uni; 25: atr; 36: pil (gl); 51: bro; 52: bro; 66: jap — Fosberg & Cushing 46328: (las) — Fraser 195: uni — Frogatt 15: ama; 26: pil (gl) — Funke 10/1915: uni.

Gezaghebber van Sawoe 10: jap — Gibbs 2750: uni; 2756: ama; 2772: ama; 2780: pil (gl) — Gilliland 6 May 1959: atr; 15 Feb. 1963: uni; 17 Nov. 1963: mon; 113: uni; 5047: uni; 5124: mon; 5144: cum; 5152: atr; 5160a: uni; 5183: uni; 5184: uni; 5185: ama; 5186: uni; 5230: mon; 5234: mon; 5236: cum; 5255: gan; 5257: atr; 5258: uni; 5273: cum; 5278: uni; 5282: atr; 5297: atr; 5299: mul — Gilliland & Kassim 2435: uni — Gilmour 11: cum; 12: ama — Gjellerup 688: ama — Goetghebeur & Coppejans 3837: pil (egl) — Goetghebeur & Vyverman 6108: ama; 6132: pil (egl); 6199: tnf — Gordon 1/1951: atr — Göring 345 (T): jap; 1401: uni — Griffith 219: ama — Groenhart 30-32: nig.

Haegens et al. 361: uni — Hallier f. 20/12/1895: atr; 157: ama; 597b: uni; 597c: bro; 597e: uni; 598a: uni; 644a: mul; 645: mul; 646: pil (gl); 674: cum; 4157: ama; 4674: cum — Harreveld 9/1917: jap — 't Hart & Van Leeuwen K-9: bro; K-13: bro; K-19: ama; M-1: ama; M-18: bro; M-19: bro; M-27: bro — Haviland 1915: uni; 1922: uni; 1925: mon — Henderson 9 July 1937: bro; 10268: atr — Henty Nov. 1952: cum; 86: pil (egl); 160: ama; 197: pil (egl); 216: tnf; 228: bro; 285: cil — Heyligers 1392: bro — Hiepko & Schultze-Motel 596: tnf — Hildebrand 22: (ama) — Hoekstra 4: ama — Hoetagaloeng 12: uni; 25: pil (gl) — Höft 2472: tnf; 2794: tnf; 2869: tnf; 3058: tnf; 3064: tnf; 3122: tnf — Holttum 29/7/1946: atr — Hoogerwerf 48: jap; 199: las; 243: bro — Hoogland 3734a: dia; 3753: dia; 3769: bro; 5100: pil (egl) — Hoogland & Pullen 6248: bro — Hose 3/1897: cum/uni; 3: uni; 5: mon; 24: ama; 47: uni; 63: uni; 64: atr; 1925: uni — Houwing 76: jap — Hullett 14/10/1893: uni; 6/1/1894: ama — Hume 7367: atr/cum; 7369: atr; 7388: atr; 7422: cum; 7427: uni; 7434: uni; 7540: uni; 7679: ama; 7689: cum; 7714: atr; 7774: uni; 8090: uni.

Iwatsuki et al. P-1328: cum; S-624: uni.

Jaag 182: ama; 264: cil; 560: ama; 865: jap; 911: cil; 1082: cil; 1434: jap — Jacobs 5649: uni — Janaki Ammal 9: atr; 12: bro; 15: uni — Jeswiet 68: min; 201: uni; 221: bro; 715: cil; 716: jap; 941: jap; 1016: jap; 1029: bro; 1063: bro; 1674: atr; 1874: atr; 1894: atr; 1959: jap; 1962: min; 1962a: tnf — Jochems 3113: (ama); 3293: bro — Johansson et al. 279: uni — Jowett & Jowett 27: tnf — Jumali Aug. 1967: ama; 600: uni; 601: uni; 606: ama; 614: atr; 945: ama; 2014: atr — Junghuhn 166: ama.

Kanehira & Hatusima 13165 (T): las — Karta 77: jap; 203: ama — Kartawinata 273: (ama); 1344: cur — Kasik 102: uni — Kasim 1010: atr — Kassim Aug. 1959: cum; 81: atr; 86: uni; 87: ama; 2455: atr — Kelly 30: tnf — Keng 858: atr — Kern 7226: (ama); 7286: uni; 7443: uni; 8031: nig — Kievits 1552: ama; 1626: ama; 1709: ama; 1881: (ama); 2170: (ama); 2279: (ama); 2363: (ama); 2651: (ama); 3019: uni; 3301: uni; 3347: uni — C. King 1017: jap — Kjellberg 35: ama; 3032: pil — Kleinhoonte 320: cum; 337: nig — Kneucker 702 (Merrill): ama; 761 (Merrill): cum; 880 (Merrill): atr; 883 (Merrill & McGregor): bro; 889 (Merrill): ama — Kofman

203: uni — Køie & Olsen 1430: ama — Kooper 7/1932: bro; 7/7/1932: jap; 10/7/1932: uni; 14/8/1932: pil (egl); 18/8/1932: pil (gl); 9/1932: jap; 23/9/1932: uni; 9/10/1932: cum; 4: uni; 21: (ama); 503: (ama); 503b: uni; 552: pil (gl); 613: (ama); 806: uni; A88: (ama) — Koorders 17245: (ama); 17246: ama; 17247: (ama); 17248: ama; 17249: ama; 21216: jap; 21248: ama; 25541: (ama); 28285: ama; 31399: (ama); 36685: (ama); 36709: (ama); 36711: (ama); 36965: jap; 37600: mul; 40907: uni; 41159: cum; 41209: uni — Kooy 453: ama; 567: jap/ama; 609: cil; 857: jap — Kornassi 934: ama; 1303: ama — Koschdale 2/1935: min; 92: ama — Kostermans 1526: (ama) — Kostermans & Soegeng 578: bro; 929: atr — Kostermans & Wirawan 931: cum — Kuntze 4304: uni; 4382: pil; 5037: uni; 5078: bro; 6154: ama — Kurz 4: mon/uni; 10: pil (egl)/ama; 11: pil (egl); 13: mon; 113: uni; 1863: uni; 2730: uni — Kuswata 273: ama.

LAE 50286 (Stevens): tnf; 57124 (Andrew): bro; 58154 (Stevens): tnf; 67703 (Barker): tnf; 69491 (Conn et al.): tnf; 77214 (Womersley): uni — Lai & Saifuddin 423: mon — Lam 2670: uni — Lambinon 87/94: ama; 87/124: tnf — Landbouw Resident Cheribon 16: jap — Laurence 7: uni — Ledermann 7957: jap — Leefmans 7/5/1924: uni — Loeters 1974: cil — Loher 1770: ama; 1771: uni; 1772: jap; 1773: bro/cum; 1774: bro; 1775: bro; 1776: luz; 1777: atr; 1778: atr; 1779: bro; 1780: ama; 1781: ama; 7196: jap; 7220: ama; 7229: atr; 13198: ama — Lörzing 391: (ama); 1659: (ama); 3800: (ama); 4412: (ama); 6271: uni; 6323: ama; 6525: atr; 6633: bro; 7637: atr; 8424: uni; 9227: (ama); 11316: bro; 12494: bro; 12495: uni; 12920: pil (gl); 12921: ama; 13002: uni; 13142: bro; 13589: uni; 13590: uni; 14379: bro; 14661: uni; 15386: atr — Lörzing & Jochems 7486: (ama) — Lütjeharms 5028: ama; 5266: uni.

MacGregor 9 (T): (las) — Main 1740: atr — Main & Aden 1526: ama; 1617: ama — Marché 418: luz — McDonald & Ismail 4178: bro — McDonald & Sunaryo 4498: ama — McGregor 214: jap — McKee 1799: dia — Meijer 1852: atr; 5694: uni; 5987: uni; 5989: uni; 9214: ama; 9646: uni; 10301: ama; 10303: cum; 10347: cum — Merrill 6: ama; 130: ama; 371: rip; 461 ('416') (T): las; 686: bro; 1792: jap; 4149: bro; 4155: luz; 4331: bro; 4462: atr; 4472: cum; 5760: atr; 9284: cum; 9789: atr; Phil. Pl. 107: bro; 130: atr; 148: ama; 150: ama; 155: cum; 160: uni; 165: jap; 573: pil (gl); Sp. Blancoan. 170 (T): bro; 229 (T): ama; 422 (T): cum; 709: jap — Merritt 9802: bro — Metzner 97: cum; 110: cki; 126: ama; 178: cki — Mitchell 108: ama — Monod de Froideville 11/1/1950: uni; 13/1/1950: uni; 478: uni; 628: mon; 630: ama; 1433: war; 1434: ama; 1478: jap; 1843: jap; 1868: ama; 2033: cki — Motley 21: mon; 68: uni; 106: bro; 108: pil (gl); 116: ama; 124: mon; 132: uni; 722: jap — Mousset 521: (ama) — Müller 34: cum — Murata et al. B-56: uni; B-308: uni.

Nauen July 1941: mon; 7 July 1941: cum/uni — Nedi & Idjan 10: uni — NGF 4757 (Womersley): pil (gl); 14795 (Henty): ama; 14796 (Henty): pil (gl); 15923 (Millar & Van Royen): tnf; 16463 (Van Royen): cum; 17457 (J.E.N. Smith): bro; 20591 (Henty): pil (egl); 20612 (Henty): tnf; 20688 (Henty): tnf; 27114 (Henty): las; 27163 (Henty): bro; 29751 (Coode, Cropley & Katik): ama; 33703 (Ridsdale & Galore): bro; 33744 (Ridsdale): las; 35234 (Millar): pil (gl); 38715 (Henty & Katik): las; 38777 (Henty & Katik): las; 38797 (Henty & Katik): bro; 38970 (Henty et al.): bro; 42123 (Vandenberg & Galore): tnf; 42966 (Henty): bro; 43121 (Mann): ama; 44037 (Streimann & Kairo): tnf; 45017 (Streimann & Students): bro; 46154 (Coode): pil (egl); 48359 (Foreman & Kumul): ama; 49143 (Henty): cil; 49365 (Henty & Foreman): bro; 49396 (Henty & Foreman): bro; 49583 (Henty): las; 49584 (Henty): bro; 49901 (Henty): bro — Noerkas 372: jap.

Ophof 12/1940: uni; 18/12/1940: uni; 28/12/1940: pil (egl); 4143: uni — Ophof & De Wit 1567: pil (egl); 4014: uni; 4022: uni — Ottolander 392: (ama).

Parker 2234: mon — Pereira et al. 101: atr — Pillai 17 May 1977: ama — Pleyte 456: ama; 765: ama — PNH 3825 (Edaño): ama; 4633 (Fox): ama; 11740 (Sulit): bro; 11815 (Sulit): bro; 13983 (Edaño): jap; 18253 (Mendoza): uni; 18502 (Mendoza): ama; 18926 (Farinas): cum; 20424 (Animal Industry Employee): atr; 20425 (Animal Industry Employee): bro; 20458 (Mendoza): bro; 22522 (Alcasid): atr; 33191 (Steiner): ama; 33235 (Steiner): ama; 34385 (Edaño): uni; 36523 (Kondo & Edaño): ama; 37084 (Fariñas): pil (gl); 37395 (Fariñas): atr; 37396 (Fariñas): atr; 38744 (Kondo & Edaño): cum; 38899 (Kondo & Edaño): ama; 40448 (Edaño): uni; 42033 (Mendoza): jap; 72645 (Conklin & Del Rosario): atr; 80724 (Conklin & Buwaya): atr; 80725 (Conklin & Buwaya): mul; 97572 (Mendoza): atr — Politon 8: dia —

Popta 128/17: pil (egl) — Posthumus 493: uni; 1889: (ama) — Powell 473: ama; 532: pil (egl?) — PPI 15114 (Garcia et al.): cum — Proppe 4/1924: ama; 30: (ama) — Pullen 1667: bro; 2712: bro; 2768: bro; 3147: bro; 3339: bro; 3608: ama; 6678: bro; 7093: bro; 7152: las; 7177: bro; 7243: bro; 8103: tnf — Pulsford 4: bro — Purseglove 4065: ama; 4071: bro/uni; 4321: mul; 5497: atr — Pwee P1/87: ama.

Raap 173: uni; 501: uni — Rahmat si Boeea 8288: ama; 8405: ama; 8406: pil (gl) — Radermacher 22/3/1927: ama; 15/6/1927: pil; 25/8/1929: jap — Rahmat si Toroes (= Rahmat si Boeea) 1629: uni; 1837: atr; 1888: uni; 1943: uni; 2511: atr; 2732: uni; 3031a: atr; 3888: uni; 5345: uni — Ramos 1120: mon; 1460: atr; 1603: atr — Rant 2/1916: nig; 11/5/1924: mul; 4: nig — Rao Dec. 1961: uni; 26 June 1966: atr — Rappard 66: cum; 258: tnf — Raynal 16796: bro; 17102: tnf — Reinwardt 51: uni; 70: pil (egl); 164: pil (egl) — Richards 2710-A: uni — Ridley 27 Sept. 1904: ama; A° 1915: nig; 4: ama; 10: atr; 14: uni; 64: uni; 79: pil; 453: mon; 997: atr; 998: bro; 1082: cum; 1220: cum; 1221: ama; 1375: cum; 1552: atr; 1688: ama; 1690: uni; 1697-b: cum; 1698: cum; 3538: atr; 6108: cum; 6990: ama; 7007: jap; 8161: pil; 8318: bro; 10168: pil; 10169: bro; 12229: atr; 12563: cum; 14389: atr; 14841: atr; 14848: atr; 14849: bro; 14850: atr; 14851: uni; 14853: jap — Robbins 444: bro; 454: bro — Robinson 11/1916: bro; 1650: uni; 2515: ama; 6442: bro — Robinson & Kloss 22/3/1914: uni; 5/6/1914: uni — Rodway 2861: nig; 2863: ama; 2864: ama; 4194: ama; 15300: ama — Roesil 187: (ama) — Rutten-Kooistra 53: uni — Ryves 92KL/031: cum.

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