

***Poaceae* in the Greenhouses of the Botanic Garden of the Institute of Botany in Graz (Austria, Europe)**

By

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Summary: TEPPNER H. 2002. *Poaceae* in the greenhouses of the Botanic Garden of the Institute of Botany in Graz (Austria, Europe). - *Fritschiana* (Graz) 31: 1 - 42. - ISSN 1024-0306.

76 species, or as the case may be, taxa of *Poaceae*, grown in the greenhouses of the Botanic Garden of the Institute of Botany of the University of Graz are listed. Along with the origin (collection data) of the respective material, data of sowing and germination, synonyms, vernacular names, etc., as well as some annotations are given. Some characteristics of the seedlings of *Pharus latifolius*, *Streptochaeta sodiroana* and *Streptogyna americana* are also featured. Moreover, aspects of anthesis are also discussed for *Pharus*, *Pseudosasa japonica* and *Stenotaphrum secundatum*. Information on distribution and ecology is presented for the Peruvian *Muhlenbergia flexuosa*. The presence of myrmecochory in *Rottboellia cochinchinensis* is referred to. Results of chromosome counts are reported for: *Anthoxanthum amarum* ($2n = 86, 88$), *Anthoxanthum odoratum* ($2n = 10, 10 + 1B$), *Cymbopogon citratus* ($2n = 60$), *Dactylis smithii* subsp. *hylodes* ($2n = 28$), *Dactylis smithii* subsp. *smithii* ($2n = 14$), *Muhlenbergia flexuosa* ($2n = 40, n = 20$), and *Stenotaphrum secundatum* ($2n = 18$).

Zusammenfassung: TEPPNER H. 2002. Die Gräser in den Gewächshäusern des Botanischen Gartens des Institutes für Botanik in Graz (Österreich, Europa). - *Fritschiana* (Graz) 31: 1 - 42. - ISSN 1024-0306.

76 Arten bzw. Taxa an *Poaceae*, die in den Gewächshäusern des Botanischen Gartens des Institutes für Botanik der Universität Graz kultiviert werden, sind gelistet, zusammen mit Ursprung (Sammel-daten) des jeweiligen Materials, mit Daten über Aussaat und Keimung, mit Synonymen, Volksnamen etc. sowie mit einigen Anmerkungen. Im Falle von *Pharus latifolius*, *Streptochaeta sodiroana* und *Streptogyna americana* werden Merkmale der Sämlinge diskutiert, für *Pharus*, *Pseudosasa japonica* und *Stenotaphrum secundatum* auch Aspekte der Anthese. Für die peruanische *Muhlenbergia flexuosa* werden Angaben zur Verbreitung und über die Begleitflora vorgelegt. Auf die Myrmekochorie von *Rottboellia cochinchinensis* wird hingewiesen. Ergebnisse von Chromosomenzählungen werden mitgeteilt für: *Anthoxanthum amarum* ($2n = 86, 88$), *Anthoxanthum odoratum* ($2n = 10, 10 + 1B$), *Cymbopogon citratus* ($2n = 60$), *Dactylis smithii* subsp. *hylodes* ($2n = 28$), *Dactylis smithii* subsp. *smithii* ($2n = 14$), *Muhlenbergia flexuosa* ($2n = 40, n = 20$) und *Stenotaphrum secundatum* ($2n = 18$).

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Introduction	2
(<i>Anomochlooideae</i>)	4
<i>Streptochaetoideae</i>	4
<i>Pharoidae</i>	4
(<i>Puelioideae</i>).....	6
<i>Bambusoideae</i>	6
<i>Ehrhartoideae</i> (<i>Oryzoideae</i>)	9
<i>Pooideae</i>	12
(<i>Aristidoideae</i>).....	23
<i>Arundinoideae</i> (<i>Phragmitoideae</i>).....	23
<i>Danthonioideae</i>	24
<i>Centothecoideae</i>	25
<i>Panicoideae</i>	26
<i>Chloridoideae</i> (<i>Eragrostoideae</i>).....	35
Acknowledgments	40
Alphabetical Index	40

Introduction

In 1995 we could move into the new greenhouses of our Botanic Garden (TEPPNER 1996). Since our predecessors had planned to grow all plants in soil, except the nurseries, we had no equipment for growing small plants in pots, a fact which was to be considered in the arrangement of plants. The completely new installation of the plant collection gave us the chance to make divisions (see below) for selected themes, chosen according to our needs for teaching and research. Naturally, the plant material in stock was also to be taken into consideration. Many species were procured especially for the new houses, an intention which we began to realise since the 1980s. In general, it was my philosophy to build a plant collection with a structure and species composition as unique as possible and not to copy any other garden. In choosing material for the largest plant families, I had always the tribus classification in the back of my mind, taking care for an even representation of these families. Thus, this collection could be used successfully in lectures with practicals on morphology and systematics of *Gramineae* (2000) and *Compositae* (2001).

Principally our collection is open to the scientific community of botanists at the conditions of the Convention on Biodiversity. In respect of fixed material of plant parts it should not be a problem. In the case of living material please consider, that we are a small garden with small greenhouses; thus we can grow only very few individuals (often only one) from each species and therefore, the real possibilities may be often limited.

For the use of a collection an accessible documentation is essential. Indeed we possess some name lists for internal use. We began a documentation with data for each species, needed for research and for the presentation to the public in 1995, but the progress was not satisfactory due to the lack of staff. Now with this step we want to begin with the presentation of a documentation of the supply of our grasses within the different divisions of the greenhouses.

The systematic treatment of the *Poaceae* in this paper follows largely the GPWG 2001; some deviations result from other recent literature. Within each tribus the taxa are listed in alphabetical order.

General notes to some of the given data:

Det. & Lit.: All determinations are revised with the own knowledge of the species or with the help of standard floras. Only when 1) critical revisions with special literature were made, 2) received plant material was indeterminated or 3) other scientists made determinations, this is indicated. The main literature source for determinations is indicated, too.

Origin: Material from the seed exchange between botanic gardens or from the seed trade: The year printed on the catalogue (it may be the year of collection or the year of distribution) and the running number of the entity are indicated. If the numbering was lacking, the page number is given; if the latter was also lacking, we ourselves numbered the pages manually.

Germ.: The begin of germination, as visible above soil, is indicated if we have it registered. Sometimes the appearance of the first and last seedling is indicated.

Propagation: In cases, where propagation is/was needed for different reasons, the mode of propagation used by us is given. This does not encompass all possibilities.

Location: Here the respective divisions of the greenhouses are given for each species.
 Explanation for the abbreviations of the division names:

Kh	Cool Greenhouse
KhAnz	Nursery (if grown only in the nursery)
KhCa	California, Chapparal
KhCap	Cape Province, S. Africa
KhCh	Chile, mediterranean climate province
KhMed	Mediterranean region
KhSt	Potted area
KhSWA	Southwestern Australia
KhZi	Old house plants
Te	Temperate Greenhouse
TeAnz	Nursery (if grown only in the nursery)
TeAn	Andean division
TeAf	Africa
TeAs	Asia
TeAu	Australia
TeCyc	Division with Cycads
TeNa	Namib division
TeSA	South America (and S. North America)
TeSt	Potted area
TeSu	Succulent plants division
Tr	Tropical Greenhouse
TrAf	Africa
TrAnz	Nursery (if grown only in the nursery)
TrAs	Asia
TrAu	Australia
TrKult	Division for crop plants
TrNeo	Neotropics
TrPaz	Pacific Islands
TrSt	Potted area
TrVi	Victoria pond

This differentiation gives a vague impression of the climatic conditions under which a species is grown.

The task with our plant collections is part of my scientific work and I can only hope, that my followers will be merciful towards me, and will also have the possibility to maintain the collections.

Lit.: GPWG (Grass Phylogeny Working Group) 2001. Phylogeny and subfamilial classification of the grasses (*Poaceae*). - Ann. Missouri bot. Garden 88(3): 373-457.
 TEPPNER H. 1996. Tropische Gräser. Der Botanische Garten in Graz. - Via.Airport-journal Graz 1996(3): 66-67.

Anomochloideae

Anomochloa marantoidea BRONGN. reported only from a few locations near Una in Bahia, Brazil, is lacking in our collection. We would be very grateful if anyone having this plant, could send us a seed sample or maybe a living plant.

Lit.: e.g., JUDZIEWICZ E.J. & SODERSTROM T.R. 1989. Morphological, anatomical, and taxonomic studies in *Anomochloa* and *Streptochaeta* (*Poaceae: Bambusoideae*). - Smithsonian Contrib. Bot. 68.

RENVOIZE S.A. 1984. The grasses of Bahia. - Royal Bot. Gardens, Kew (p. 42-43).

Streptochaetoideae

Fam./ Subfam. /Tribus: *Poaceae - Streptochaetoideae - Streptochaeteae*

Sci. name: ***Streptochaeta sodiroana* HACKEL**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2000. - CROAT 1978: 150-151, HACKEL 1890

Distr.: S. Mexico to Panama, N.W. Venezuela, Ecuador, N. Peru (not known from Colombia) (JUDZIEWICZ & SODERSTROM 1989: 30, 33-34)

Origin: Panama, Barro Colorado Island; March to April 1999; leg. Ingeborg TEPPNER

Sown: 3.5.1999

Germ.: 23.5.1999 (all died)

6.10.1999

29.10.1999

12.4.2001

20.5.(- 22.7.)2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TrNeo, TrAnz

Annot.: The first leaf of the seedling bears no blade (as in oryzoids), whereas *Streptochaeta spicata* possesses up to three leaves without blade or with reduced blades (SODERSTROM 1981: 21, 24; JUDZIEWICZ & SODERSTROM 1989: 47). Soon (c. 3-4 months) after germination, innovation can begin at the basal nodes. The first report of epizoochory in *Streptochaeta* is that of MÜLLER 1885 for *Str. spicata*.

Lit.: CROAT T.B. 1978. Flora of Barro Colorado Island. - Stanford University Press, Stanford, California.

HACKEL E. 1890. Eine zweite Art von *Streptochaeta*. *St. sodiroana* n.sp. - Österr. bot. Z. 40(3): 111-114.

JUDZIEWICZ E.J. & SODERSTROM T.R. 1989. Morphological, anatomical, and taxonomic studies in *Anomochloa* and *Streptochaeta* (*Poaceae: Bambusoideae*). - Smithsonian Contrib. Bot. 68.

MÜLLER F. 1885. Einige Nachträge zu Hildebrand's Buch: Die Verbreitungsmittel der Pflanzen. - Kosmos (Lwów) 9(2): 438-442, 1 plate.

SODERSTROM T.R. 1981. Some evolutionary trends in the *Bambusoideae* (*Poaceae*). - Ann. Missouri bot. Garden 68(1): 15-47.

Pharoideae

Fam./ Subfam. /Tribus: *Poaceae - Pharoideae - Phareae*

Sci. name: ***Pharus latifolius* L.**

Synonyms: —

Vernacular names: Pega-pega (CROAT 1978: 145), Paufil chaqui Fl. Peru I(1): 198

Det. & Lit.: —

Distr.: Mexico and Caribbean Islands to Bolivia and Brazil

Origin: 1. Panama, Barro Colorado Island

2. Panama, Barro Colorado Island; 2.2001; leg. G. ZOTZ

Sown: 1. 13.4.2001

Germ.: 5.5. - 2.6.2001

2. 28.2.2001

31.3. - 19.4.2001

Flowers: + (December, January)

Fruits: —

Propagation: —

Location: TrNeo

Annot.: *Pharus latifolius* is well known for its resupinate leaves (by torsion of the distal part of the pseudopetiole) with the abaxial side of the blade oriented upwards. Interesting and remarkable, that the blade of the first two foliage leaves of the seedlings is normally oriented. The resupination begins always with the third leaf (Fig. 1). No innovation shoots appear till the first flowering; after anthesis extravaginal innovations are formed quickly. Due to the lack of lodicules the anthers are pushed through the tip of the spikelet by elongation of their filaments; during the turgescence of the filaments, the anthers stand more or less oblique to erect (Fig. 2). The anthers open only by short pore-like dilated slits at the distal end, thus the pollen is 'waiting' for a vector. This vector may be wind. On the other hand, the distal, dorsal part of the lemma, which exceeds the glumes, is already covered with the fully developed, hooked, c. 0.3 mm long hairs at flowering time. Thus, when a lemma gets caught up in something and is then detached, the inflorescence is flung back causing a cloud of pollen to be released from the anthers of the whole inflorescence; verification and observations in nature are needed. Apparently selfsterile. At fruiting time the lemma hairs form one of the most effective burr dispersal mechanisms I have ever seen.



Fig. 1. Seedling of *Pharus latifolius*, c. 1 month old. Second leaf (with normally oriented blade; left) and third leaf (blade resupinated; right). - Bot. G. Inst. Bot. Univ. Graz. - Phot. 30.4.2001.



Fig. 2. Male and female spikelets of *Pharus latifolius* at anthesis (see text); anther length 1.6 mm. In the left figure, in an exceptional case, two male spikelets beside one female spikelet. At the base of the three stigmas the two-pointed palea tips visible. - Bot. G. Inst. Bot. Univ. Graz. - Phot. 2.1.2002, 29.12. and 30.12.2001 respectively.

Lit.: CROAT T.B. 1978. Flora of Barro Colorado Island. - Stanford University Press, Stanford, California.

Puelioideae

Species of the genera *Puelia* FRANCH. and *Guaduella* FRANCH. (both African forest grasses, from Guinea to Angola and Congo, members of the newly established subfamily *Puelioideae* CLARK L.G. & al. (2000, Syst. Bot. 25: 181-187) are lacking in our collection. If anyone should be growing them, we would naturally be very grateful for a living plant or a seed sample.

Bambusoideae

Fam./ Subfam. /Tribus: *Poaceae* - *Bambusoideae* - *Bambuseae*

Sci. name: ***Bambusa tuldoides* MUNRO**

Synonyms: —

Vernacular names: Punting-pole Bamboo

Det. & Lit.: —

Distr.: S-China (Prov. Guangdong)

Origin: comm. G. NOGRASEK (Unterpremstätten, Styria) 1995; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: division

Location: TrSt

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Bambusoideae - Bambuseae*

Sci. name: ***Bambusa ventricosa* MCCLURE**

Synonyms: *Bambusa tuldoides* MUNRO var. *ventricosa* (MCCLURE)

Vernacular names: Buddha Bamboo, Buddha's Belly Bamboo; Buddhas Bauch

Det. & Lit.: —

Distr.: S. China (Prov. Guangdong)

Origin: Purchase: Fa. Tunkel, Niederösterreich. - Comm. L. KAMPITS, Seckau, Styria, 7.1997; shoot cuttings. - 25.5.2001; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: —

Location: KhSt, TeAnz

Annot.: Our material of young plants (up to 1.5 m high) shows only normal culms without the belly-like swellings of the internodes.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Bambusoideae - Dendrocalameae*

Sci. name: ***Dendrocalamus giganteus* (WALL.) MUNRO**

Synonyms: *Bambusa gigantea* WALL.

Vernacular names: Giant Bamboo; Riesenbambus

Det. & Lit.: —

Distr.: S.E. Asia (India, Burma, Sichuan, Thailand, New Guinea)

Origin: Purchase: Lothar SEIK, Tübingen, Germany, 27.2.1992; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: —

Location: TrAS

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Bambusoideae - Chusqueeae*

Sci. name: ***Chusquea culeou* DESVAUX**

Synonyms: —

Vernacular names: —

Det. & Lit.: —

Distr.: Argentina, Chile

Origin: Purchase: Pieter ZWIJENBURG, Boskoop, The Netherlands, 10.4.2000; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: division

Location: KhCh

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Bambusoideae - Arundinarieae*

Sci. name: *Pleioblastus pygmaeus* (MIQ.) NAKAI var. *distichus* (MITFORD) NAKAI

Synonyms: *Arundinaria pygmaea* (MIQ.) MAKINO var.

Vernacular names: —

Det. & Lit.: —

Distr.: Japan

Origin: Purchase: Pieter ZWIJENBURG, Boskoop, The Netherlands, 20.5.2001; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: —

Location: TeAnz

Annot.: —

Lit.: —



Fig. 3. *Pseudosasa japonica*. - Two spikelets at anthesis (left) and two ripe ones with one caryopsis each. - Gärtnerei EHRENHÖFER, Friedberg, Styria. - Phot. 19.9.1984.

Fam./ Subfam. /Tribus: *Poaceae* - *Bambusoideae* - *Arundinarieae*

Sci. name: ***Pseudosasa japonica* (SIEB. & ZUCC.) MAKINO**

Synonyms: *Arundinaria japonica* SIEB. & ZUCC. ex. STEUD., *Sasa japonica* (SIEB. & ZUCC.) MAKINO

Vernacular names: Yadake, Arrow Bamboo

Det. & Lit.: H. TEPPNER 1986

Distr.: Japan and Korea

Origin: Styria, Hartberg, private garden of Dr. H. PICHLER, 24.10.1986; comm. H. TEPPNER; caryopses

Sown: 27.10.1986

Germ.: 10.11.1986

Flowers: —

Fruits: —

Propagation: —

Location: KhSt

Annot.: *Pseudosasa japonica* had a worldwide flowering period in 1984 to 1987 (Fig. 3). The resulting caryopses, which were collected from a garden in Hartberg, Styria, and sown in the nursery of the Botanic Garden, germinated easily. Three plants grown from seed survived in the cool greenhouse.

Lit.:

***Ehrhartoideae* (*Oryzoideae*)**

Fam./ Subfam. /Tribus: *Poaceae* - ?*Ehrhartoideae*? - *Streptogyneae*

Sci. name: ***Streptogyna americana* C.E. HUBB.**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2001. - CROAT 1978: 151

Distr.: Mexico to Bolivia and Brazil

Origin: —

Sown: 13.4.2001 (whole diaspores)

Germ.: 28.6. - 9.7.2001

23.5.2001 (naked caryopses)

29.5.2001

31.5.2001 (naked caryopses)

9.6.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TrNeo

Annot.: On the diaspores, the rhachilla internode above the spikelet base forms a sharp-pointed fish-hook barb, resulting in a very effective attachment structure for epizoochoric dispersal (cf. RIDLEY 1930: 581, Pl. 18.16 and JACQUES-FÉLIX 1962: 121). This mechanism is surprisingly similar to the function of the two indurated and diverging palea tips as described for *Streptochoeta* (CROAT 1978: 151).

For sowing, the diaspores should be peeled: remove the hard and tough lemma and palea carefully from the long (1.5 - 1.6 cm), slender and fragile caryopsis. Naked caryopses germinate within 1-2 weeks, exhibiting 100 % viability or nearly so. Whole diaspores germinate after 2.5 - 3 months at a low percentage.

Whereas the inclusion of *Streptogyneae* in *Bambusoideae* is plausible on the basis of many morphological characteristics, molecular data speak strongly against this and favour affinity around *Oryzaceae*. According to the GPWG 2001 the systematic position of the tribe is uncertain! The first leaf of the seedling is lanceolate, obtuse and patent (SODERSTROM 1981: 24-25), furthermore it is enrolled in bud (convolute or supervolute in the strict sense of STEARN 1973, Bot. Latin p. 343-344) (Fig. 4); thus it is panicoid and therefore, the leaf character included, the embryo of *Str. americana* is oryzoid.

JACQUES-FÉLIX 1962: 4, 74 classified the embryo of *Str. crinita* P. BEAUV. as festucoid, which is correct only in so far as he did not consider the first leaf for the typification of embryos. Nevertheless, the seedling is not truly oryzoid because the first leaf bears a blade (whereas in *Oryza* it consists only of the sheath, the blade being highly reduced) and the first internode is not elongated (SODERSTROM 1981: 24-25). After a year or so after germination axillary buds may appear at the basal nodes; the innovations are principally intravaginal, but often the buds develop late, after decaying of the subtending leaves.

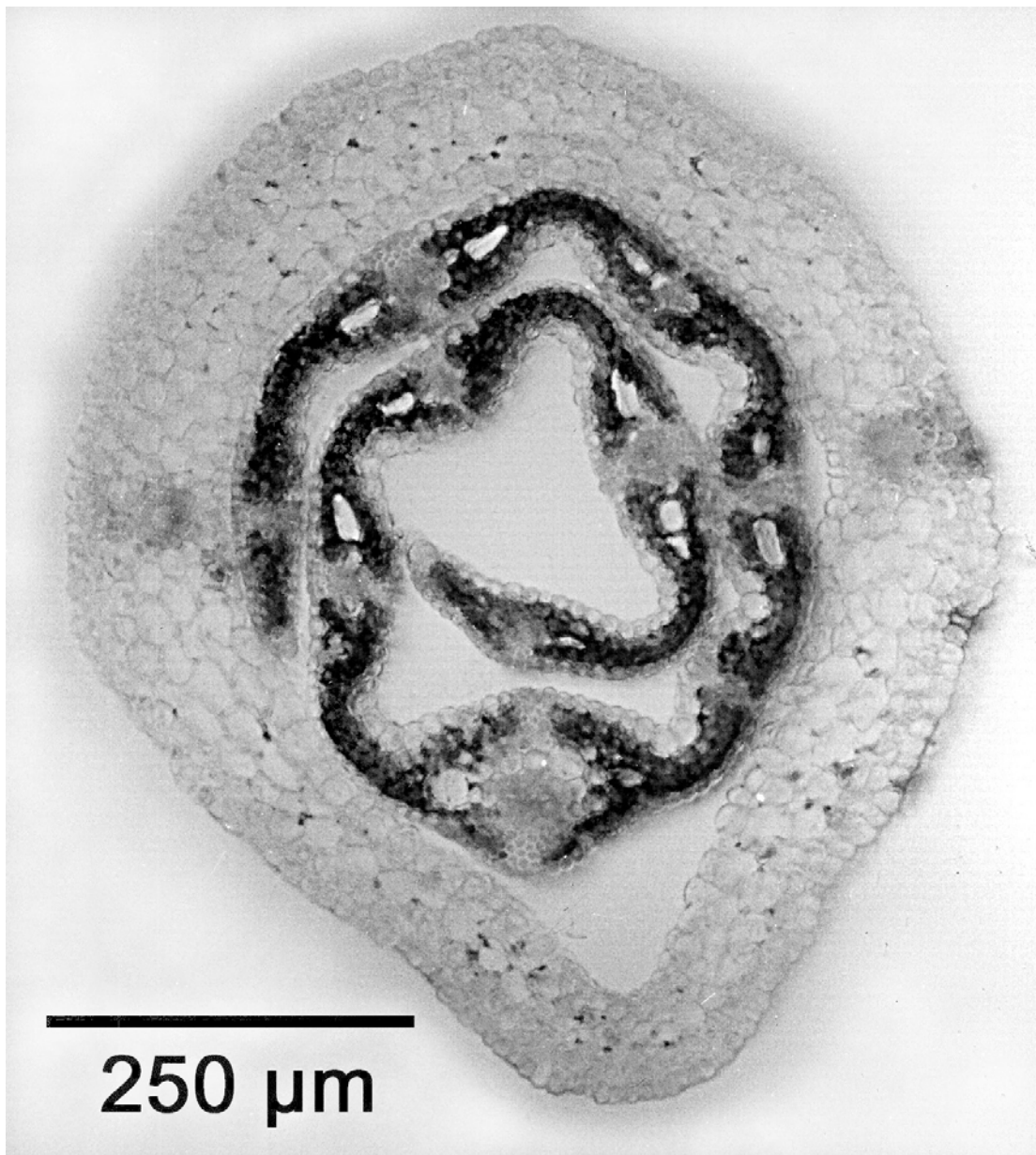


Fig. 4. *Streptogyna americana*, four days old seedling with a coleoptile of c. 6 mm and a first leaf of c. 11 mm length. Cross section through coleoptile and first leaf. - Phot. 5.2.2002.

- Lit.: CROAT T.B. 1978. Flora of Barro Colorado Island. - Stanford University Press, Stanford, California.
GPWG (Grass Phylogeny Working Group) 2001. Phylogeny and subfamilial classification of the grasses (*Poaceae*). - Ann. Missouri bot. Garden 88(3): 373-457.
JACQUES-FÉLIX H. 1962. Les graminées d'Afrique tropicale, I. - Inst. Rech. agron. tropic. cult. vivr., Bull. sci. 8. - Paris.

RIDLEY H.N. 1930. The dispersal of plants throughout the world. - Reeve, Ashford, Kent.

SODERSTROM T.R. 1981. Some evolutionary trends in the *Bambusoideae* (*Poaceae*). - Ann. Missouri bot. Garden 68(1): 15-47.

Fam./ Subfam. /Tribus: *Poaceae - Ehrhartoideae - Oryzeae*

Sci. name: ***Hygroryza aristata*** (RETZ.) C.G. NEES in WIGHT & ARN.

Synonyms: —

Vernacular names: —

Det. & Lit.: —

Distr.: S.E. Asia incl. India and Ceylon

Origin: 1. Bot. G. Univ. Jena; 10.9.1999; comm. H. TEPPNER, cuttings

2. Bot. G. Univ. Krakow; 22.11.1999; comm. G. DEUTSCH, cuttings

Sown: —

Germ.: —

Flowers: none yet

Fruits: —

Propagation: division, cuttings

Location: TrVi

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Ehrhartoideae - Oryzeae*

Sci. name: ***Oryza sativa*** L.

Synonyms: —

Vernacular names: Rice, Riz, Riso, Arroz; Reis, Kultur-Reis

Det. & Lit.: —

Distr.: In cultivation, wild relatives mainly in S.E. Asia

Origin: Philippinen; 1990. - Gewächshaus trop. Nutzpflanzen, Witzenhausen, Univ. Kassel, 1998: 252

Sown: 3. 1998

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: TrVi

Annot.: Cultivar IR8 [cv. group indica (long grain varieties, tropical)]. - Dwarf habit, husk ochre, grains c. 6.5 - 7.0 × 2.7 - 2.9 mm. - IR8 has been the first of the famous high-yielding cultivars, released by IRRI (International Rice Research Institute, Philippines) in 1966, and has been initiating the „Green Revolution“ in rice. Responsible for the success was mainly one mutated gene for shorter culms found in cvs. from Taiwan (KHUSH 1974).

Lit.: KHUSH G.S. 1974. Rice. - In: KING R.C. (Ed.). Handbook of genetics, 2: 31-58. - Plenum Press, New York and London.

Fam./ Subfam. /Tribus: *Poaceae - Ehrhartoideae - Oryzeae*

Sci. name: ***Oryza sativa*** L.

Synonyms: —

Vernacular names: Rice, Riz, Riso, Arroz; Reis, Kultur-Reis

Det. & Lit.: H. TEPPNER 1991

Distr.: In cultivation, wild relatives mainly in S.E. Asia

Origin: Trade for alternative foods in Vienna

Sown: 13.5.1991

Germ.: c. 17.5.1991

Flowers: +

Fruits: +

Propagation: seeds

Location: TrVi

Annot.: Traded under the name „Schwarzer Klebreis“ [= black glutinous rice]. A cv. out of the indica group with narrow (7 - 7.5 × 2.0 - 2.4 mm) and nearly black grains due to the high anthocyan content of the pericarp; husk ochre. The trade name is probably wrong because the endosperm is largely hard and glassy and not opaque as usual in glutinous rice.

Lit.:

Pooideae

Fam./ Subfam. /Tribus: *Poaceae* - *Pooideae* - *Triticeae*

Sci. name: ***Elymus solandri* (STEUD.) CONNOR**

Synonyms: *Elymus rectisetus* (NEES) LÖVE & CONNOR

Vernacular names: Blue Wheatgrass

Det. & Lit.: C. MEURK

Distr.: New Zealand

Origin: New Zealand, South Island, Banks Peninsula S.E. Christchurch, Te oka; 43° 48' 58" S, 172° 47' 18" E; 11.3.2001; leg. J. BLAHA, C. EDLER & C. MEURK

Sown: 8.5.2001

Germ.: c. 15.5.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae* - *Pooideae* - *Triticeae*

Sci. name: ***Haynaldoticum sardoum* MELETTI & ONNIS**

Synonyms: —

Vernacular names: Denti de Cani

Det. & Lit.: —

Distr.: Italy [Sardinia, Sicilia, Toscana, Campania, Calabria (MELETTI 1956), Puglia] (PIGNATTI 1982: 539)

Origin: Bot. G. Univ. København 1997: 2228, S 1949-0665

Sown: 21.7.1998

Germ.: 24.7.1998

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMe

Annot.: An allopolyploid (2n = 6x = 42) species, which originated from a cross of *Triticum durum* (2n = 28) × *Dasyprum villosum* (2n = 14) (MELETTI & ONNIS 1975).

Under our conditions, unsatisfactory fruit set and therefore difficult to maintain as a small population of few individuals. Grown as winter grain.

Lit.: MELETTI P. 1956. Sulla presence del "Denti de cani" in Calabria. - Nuov. Giorn. bot. ital., n.s. 63(1): 155.

— & ONNIS A. 1975. Ulteriore contributo alle conoscenze sul "Denti de cani" (*×Haynaldoticum sardoum* MELETTI & ONNIS). - Giorn. bot. ital. 109: 399-405.
PIGNATTI S. 1982. Flora d'Italia, 3. - Edagricole, Bologna.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Triticeae*

Sci. name: ***Triticum baeoticum* BOISS.**

Synonyms: *T. monococcum* L. subsp. *baeoticum* (BOISS.) HAYEK, *T. aegilopoides* (LINK) BALANSA, *T. monococcum* subsp. *aegilopoides* (LINK) THELLUNG

Vernacular names: Wild Einkorn Wheat; Wild-Einkorn

Det. & Lit.: H. TEPPNER 1991

Distr.: Eastern Mediterranean to Afghanistan

Origin: W. Turkey, Bornova-Izmir. - Bot. G. Bornova-Izmir (Turkey) 1988-1989: 247 (received as *Hordeum spontaneum*)

Sown: 28.11.1990

Germ.: c. 3.12.1990

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.: Spikelets with one or two grains. Grown as winter grain.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Triticeae*

Sci. name: ***Triticum dicoccoides* KÖRN. ex SCHWEINFURTH**

Synonyms: —

Vernacular names: Wild Emmer; Wild-Emmer

Det. & Lit.: —

Distr.: S. Syria, Lebanon and Israel to S. Turkey and W. Iran

Origin: Israel, Eastern Samaria, approx. 5 km NE of Taiba, terra rossa, hard limestone rocks, alt. 600 m, together with *Hordeum spontaneum* and *Avena sterilis*; 8.5.1988; leg. D. ZOHARY; comm. W. SAUER, Tübingen, 1989

Sown: 11.5.1990

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.: Husk suffused with black. Grown as spring grain. Difficult to maintain under our conditions.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Triticeae*

Sci. name: ***Triticum urartu* TUMANJAN ex GANDILJAN**

Synonyms: —

Vernacular names: Urartu-Weizen

Det. & Lit.: H. TEPPNER 1995. - TSVELEV 1983: 230-231, 234-235

Distr.: E. Turkey, Armenia, Lebanon, Syria, Iraq, Iran

Origin: Libanon. - Univ. of California, Riverside. - Institut für Pflanzengenetik und Kulturpflanzenforschung, Gatersleben 1993; HTRi 11498/85 SKL

Sown: 16.1.1995

Flowers: +

Propagation: seeds

Germ.: 20.1.1995

Fruits: +

Location: TeAs

Annot.: var. *urartu* ! Grown as winter grain. The donor of the A genome in durum and bread wheat.

Lit.: TSVELEV N.N. 1983. Grasses of the Soviet Union, 1. - Oxonian Press, New Delhi, Calcutta.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Brachypodieae*

Sci. name: ***Brachypodium arbuscula* GAY ex KNOCHE**

Synonyms: —

Vernacular names: Pajonazzo (HOHENESTER & WELSS 1993: 343)

Det. & Lit.: —

Distr.: Canary Islands (La Gomera, El Hierro, Tenerife)

Origin: Canary Islands, La Gomera, Agulo. - Jard. Bot. Canario "Viera y Clavijo" (Gran Canaria) 1992: 98

Sown: 25.1.1993

Flowers: +

Propagation: —

Germ.: —

Fruits: —

Location: KhMac

Annot.:

Lit.: HOHENESTER A. & WELSS W. 1993. Exkursionsflora für die Kanarischen Inseln mit Ausblicken auf ganz Makaronesien. - Ulmer, Stuttgart.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Brachypodieae*

Sci. name: ***Brachypodium retusum* (PERS.) BEAUV.**

Synonyms: *Brachypodium ramosum* ROEMER & SCHULTES

Vernacular names: Ästige Zwenke

Det. & Lit.: —

Distr.: Mediterranean and S.W. Europe

Origin: Sardinien, Prov. Sassari, Capo Caccia W Alghero, Umg. des Turmes N Cola d. Calcina, ca. 30 m, Kalk, Garrigue mit *Juniperus phoeniceae* and *Chamaerops humilis*; 3.4.1996; leg. R. KARL; live plant

Sown: —

Flowers: +

Propagation: —

Germ.: —

Fruits: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Brachypodieae*

Sci. name: ***Brachypodium retusum* (PERS.) BEAUV.**

Synonyms: *Brachypodium ramosum* ROEMER & SCHULTES

Vernacular names: Ästige Zwenke

Det. & Lit.: —

Distr.: Mediterranean and S.W. Europe

Origin: Griechenland, Korfu, Sandsteinklippen bei Sidati, 1.4.1996; leg. G. DEUTSCH; live plant

Sown: —

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhAnz

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Poeae*

Sci. name: ***Cynosurus echinatus* L.**

Synonyms: *Falcona echinata* (L.) DUMORT.

Vernacular names: Rough Dog's-tail; Igel-Kammgras, Grannen-Kammgras

Det. & Lit.: H. TEPPNER 1995

Distr.: Macaronesia, Portugal, Mediterranean to Turkmenistan

Origin: Greece, Samos; 1995; leg. H. HAGEN

Sown: 1996

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Poeae*

Sci. name: ***Dactylis smithii* LINK subsp. *hylodes* PARKER**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2002. - PARKER 1972: 376-377

Distr.: Macaronesian Islands

Origin: Madeira, Cural das Freiras; 10.10.1993; leg. L. BORGES & P. SUNDING. - Bot. G. Univ. Oslo 1995: 550

Sown: 7.3.1995

Germ.: 17.3.1995

Flowers: +

Fruits: —

Propagation: layers

Location: KhMac

Annot.: Plants with procumbent growth habit. For ensuring the identification, I counted the chromosomes: $2n (= 4x) = 28$ (counted in shoot growing points) as indicated for this subspecies.

Lit.: PARKER P. 1972. Studies in *Dactylis*. II. Natural variation, distribution and systematics of the *Dactylis smithii* LINK. complex in Madeira and other Atlantic islands. - New Phytol. 71: 371-378.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Poeae*

Sci. name: ***Dactylis smithii* LINK subsp. *smithii***

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2001

Distr.: Canary Islands

Distr.: Coasts of S. Europe, W. Anatolia and N. Africa

Origin: Italy, Toscana, Grosseto, Marina di Grosseto; 15.6.1994; leg. A. DONATI & P. MARCHETTI. - Bot. G. Univ. Siena 1995: p. 3

Sown: 13.6.1995

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Aveneae*

Sci. name: ***Anthoxanthum amarum* BROT.**

Synonyms: —

Vernacular names: Zwiebel-Ruchgras

Det. & Lit.: —

Distr.: Portugal, N.W. Spain

Origin: Portugal, Viseu, Serra de Caramulo, São João do Monte, Caramulo; 23.5.1998. - Bot. G. Univ. Coimbra (Portugal) 1999: 1418

Sown: 14.4.1999

Germ.: 21.4.1999

Flowers: +

Fruits: +

Propagation: —

Location: KhMed

Annot.: Two individuals, one with $2n = 88$, the other with $2n = 86$, the plants being hyperploid 17ploids or - more probably - hypoploid 18ploids. The presense of some small B-chromosomes cannot be excluded without an exact morphological analysis of the whole chromosome complement. I have not come across the even 16x and 18x numbers of normal chromosomes, as reported in the literature (FERNANDES & QUEIRÓS 1969: 91-93).

Lit.: FERNANDES A. & QUEIROS M. 1969. Contribution à la connaissance cytotoxinomique des *Spermatophyta* du Portugal. I. *Gramineae*. - Bol. Soc. Broteriana, 2.a sér. 43: 20-140.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Aveneae*

Sci. name: ***Anthoxanthum gracile* BIV.**

Synonyms: —

Vernacular names: Zartes Ruchgras

Det. & Lit.:

Distr.: Sardinia, Sicilia, Malta, Greece, Aegean, Tunisia

Origin: Griechenland, Peloponnes, Nomos Lakonia, Umgebung von Mistras 5 km W Sparta, Schlucht SW Burgberg, 330 m, Kalk, feuchte Felsfluren; 2.4.1999; leg. R. KARL; live plants

Sown: 1999

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Aveneae*

Sci. name: ***Anthoxanthum maderense* TEPPNER**

Synonyms: —

Vernacular names: Madeira-Ruchgras

Det. & Lit.: H. TEPPNER 1997. - TEPPNER 1998: 309-311

Distr.: Madeira

Origin: Portugal, Insel Madeira, Straßenrand der Straße (EN 202) auf den Pico do Arieiro, ca. 100 m nach der Abzweigung von der Straße von Monte nach Fajal, ca. 1400 m; Straßenböschung; 20.2.1997; leg. G. PRENNER; live plant

Sown: —

Germ.: —

Flowers: +

Fruits: —

Propagation: Cuttings and layers

Location: KhMac

Annot.: Only one clone.

Lit.: TEPPNER H. 1998. *Anthoxanthum maderense* spec. nova und *A. odoratum* (*Poaceae-Aveneae*) von Madeira und deren Chromosomen-Morphologie. - *Phyton* (Horn, Austria) 38(2): 307-321.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Aveneae*

Sci. name: ***Anthoxanthum nivale* K. SCHUM.**

Synonyms:

Vernacular names: Krater-Ruchgras

Det. & Lit.: H. TEPPNER 1997. - CLAYTON 1970: 77-79

Distr.: High mountains of Kenya, Tanganyika and Uganda [Ethiopia ?]

Origin: Uganda, Mt. Elgon, Crater Rim in Richtung Waggagai, 4230 m; February 1999; leg. E. EBERMANN & I. KRANNER; live plants

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: division

Location: KhAnz

Annot.: A very caespitose hemicyptophyte, similar to the European *A. odoratum* in this respect. Unsatisfactory growth under our conditions.

Lit.: CLAYTON W.D. 1970. *Gramineae* (Part 1). - In: MILNE-REDHEAD E. & POLHILL R.M. (eds.), *Flora of Tropical East Africa*. - London and Tonbridge.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Aveneae*

Sci. name: ***Anthoxanthum odoratum* L., diploid race**

Synonyms: —

Vernacular names: Diploid Sweet Vernalgrass; Diploides Wiesen-Ruchgras

Det. & Lit.: H. TEPPNER 1995

Distr.: Diploids with karyotype D: Central and Eastern Mediterranean and Submediterranean (from southeasternmost France, Corsica and Liguria eastward) (TEPPNER 1970, 1998)

Origin: Griechenland, zwischen Thessaloniki und Serres, bei Lachanas, ca. 460 m, Silikat-Hang mit offenen *Chrysopogon gryllus*-Fluren; 22.6.1994; leg. H. TEPPNER & H. MAYRHOFER

Sown: 1995

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.: Diploid race with $2n = 10$ and karyotype D. Originally two individuals were planted, one with $2n = 10$ and one with $2n = 10 + 1B$.

Lit.: TEPPNER H. 1970. Karyotypen europäischer, perennierender Sippen der Gramineen-Gattung *Anthoxanthum*. - Österr. bot. Z. 118(8): 280-292.
— 1998. *Anthoxanthum maderense* spec. nova und *A. odoratum* (Poaceae-Aveneae) von Madeira und deren Chromosomen-Morphologie. - Phytion (Horn, Austria) 38(2): 307-321.

Fam./ Subfam. /Tribus: Poaceae - Pooideae - Aveneae

Sci. name: *Arrhenatherum calderae* HANS.

Synonyms: —

Vernacular names: Teneriffa-Glatthafer

Det. & Lit.: —

Distr.: Canary Islands (Tenerife)

Origin: Kanarische Inseln, Tenerife, Las Cañadas, E hinter dem Parador de Turisma nördlich unter der Guajara, ca. $28^{\circ} 13' 05''$ N/ $16^{\circ} 37' 20''$ W; 2100 m bis 2250 m; Lavablockfelder; 15.12.1998; leg. H. MAYRHOFER

Sown: 26.1.1999

Germ.: 2.2.1999

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMac

Annot.:

Lit.:

Fam./ Subfam. /Tribus: Poaceae - Pooideae - Aveneae

Sci. name: *Avena sterilis* L.

Synonyms: —

Vernacular names: Animated Oat; Tauber Hafer

Det. & Lit.: —

Distr.: Macaronesia, Mediterranean to Iraq, S. Russia and Caucasia, elsewhere introduced

Origin: Italy, Liguria, Genova, M. Gazzo, 280 m; 8.6.1994; leg. M. MACCIÓ & L. MINUTO. - Bot. G. Univ. Genova 1995: p. 11.

Sown: 11. 1995

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: Poaceae - Pooideae - Aveneae

Sci. name: *Dichelachne crinita* (L.) HOOKER f.

Synonyms: —

Vernacular names: Longhair Plume Grass

Det. & Lit.: C. MEURK

Distr.: Australia (except N.T.), New Zealand, Pacific Islands

Origin: New Zealand, South Island, Banks Peninsula S.E. Christchurch, Te oka; 43° 48' 58" S,
172° 47' 18" E; 11.3.2001; leg. J. BLAHA, C. EDLER & C. MEURK

Sown: 8.5.2001

Germ.: 22.5.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.: HARDEN G.J. 1993, Flora of New South Wales, 4. - New South Wales University Press,
Kensington. (p. 582).

Fam./ Subfam. /Tribus: *Poaceae* - *Pooideae* - *Aveneae*

Sci. name: ***Lagurus ovatus* L.**

Synonyms: —

Vernacular names: Hare's-tail; Hasenschwänzchen, Samtgras

Det. & Lit.: —

Distr.: Macaronesia, Mediterranean, introduced elsewhere

Origin: France, Dép. Pas-de-Calais, Ambleteuse; dune maritime. - B. G. Jean Massart, Univ.
Bruxelles 1994: 56

Sown: 1995

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae* - *Pooideae* - *Aveneae*

Sci. name: ***Polypogon monspeliensis* (L.) DESF.**

Synonyms: —

Vernacular names: Annual Beard-grass; Gewöhnliches Bürstengras, Gewöhnlicher Tausendbart

Det. & Lit.: —

Distr.: S. and W. Europe, Macaronesia, Mediterranean, Africa, E. and S. Asia, introduced
elsewhere

Origin: Italy, Toscana, Grosseto, Punta Ala; 15.6.1994; leg. A. DONATI & R. CHIESI. - Bot. G.
Univ. Siena 1995: p. 13

Sown: 13.6.1995

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae* - *Pooideae* - *Ampelodesmeae*

Sci. name: ***Ampelodesmos mauritanica* (POIRET) DURAND & SCHINZ**

Synonyms: *Ampelodesmos tenax* (VAHL) LINK

Vernacular names: Diss Grass; Diss, Rebenrohr

Det. & Lit.: —

Distr.: W. and Central Mediterranean

Origin: Italy, Toscana, Grosseto, Pian di Rocca; 15.6.1994; leg. A. DONATI & F. ROMI. - Bot. G. Univ. Siena 1995: p. 3

Sown: 13.6.1995

Germ.: —

Flowers: +

Fruits: +

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Stipeae*

Sci. name: ***Piptatherum miliaceum* (L.) COSSON**

Synonyms: *Oryzopsis miliacea* (L.) BENTH. & HOOK. ex ASCH. & GRAEB.

Vernacular names: Smilo Grass; Südliche Grannenhirse

Det. & Lit.: —

Distr.: Macaronesia, Mediterranean to Iraq, N. Africa (FREITAG 1975: 362)

Origin: Italy, Toscana, Grosseto, Il Putone; 9.8.1994; leg. A. DONATI & P. MARCHETTI. - Bot. G. Univ. Siena 1995: p. 13

Sown: 13.6.1995

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhMed

Annot.:

Lit.: FREITAG H. 1975. The genus *Piptatherum* (*Gramineae*) in Southwest Asia. - Notes roy. bot. G. Edinb. 33(3): 341-408.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Stipeae*

Sci. name: ***Piptochaetium montevidense* (SPRENG.) PARODI**

Synonyms: —

Vernacular names: —

Det. & Lit.: —

Distr.: Peru, Bolivia, Chile, Argentina, Uruguay, S. Brazil

Origin: Jardin Bot. Facultad de Agronomia de Azul, Prov. Buenos Aires, Argentina 1999-2000: 39

Sown: 10.2.2000

Germ.: c. 21.2.2000

Flowers: none yet

Fruits: —

Propagation: —

Location: TeSA

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Stipeae*

Sci. name: ***Stipa bromoides* (L.) DÖRFLER**

Synonyms: —

Vernacular names: Lino delle fate minore; Kurzgranniges Pfriemengras

Det. & Lit.: —

Distr.: Mediterranean to Hungary, S. Russia and N. Iran

Origin: Italy, Toscana, Grosseto, Marina di Grosseto, macchia mediterranea; 26.9.1995; leg.
F. ROMI & R. CHIESI. - Bot. G. Univ. Siena 1996: p. 23

Sown: 18.4.1996

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Stipeae*

Sci. name: ***Stipa nitida* SUMMERH. & C.E. HUBB.**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2001. - HARDEN 1993: 644-645

Distr.: Australia (all mainland States)

Origin: S. Australia, Region 7, Eyre Peninsula, Whyalla to Port Augusta road on northern side close to pipeline; try open savannah myall mallee. - Bot. G. Adelaide 1999-2000: W980396

Sown: 7.4.2000

Germ.: 12.4.2000

Flowers: +

Fruits: +

Propagation: —

Location: TeAu

Restrictions (additional to CBD): No distribution without prior written permission of the Bot. Garden Adelaide.

Annot.: Produces many caryopses every year, which seemed to be well developed, but they did not germinate till now. Only lately, two weeks after a smoke treatment one of many caryopses germinated.

Lit.: HARDEN G.J. 1993, Flora of New South Wales, 4. - New South Wales University Press, Kensington.

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Stipeae*

Sci. name: ***Stipa tenacissima* L.**

Synonyms: —

Vernacular names: Alfa, Halfa; False Esparto; Halfagras, Falsches Espartogras

Det. & Lit.: —

Distr.: S. Portugal, Spain, Balearic Islands, N.W. Africa (Morocco to Libya)

Origin: Espagne, Prov. de Guadalajara, Valdenoches. - Bot. G. Univ. Liège 1986: 2585

Sown: 18.2.1988

Germ.: —

Flowers: + (January or February)

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Pooideae - Lygeae*

Sci. name: ***Lygeum spartum* L.**

Synonyms: —

Vernacular names: Sparte; Esparto basto; Albardine; Espartogras

Det. & Lit.: —

Distr.: Southern Mediterranean (Spain, Balearic Islands, Sardinia, Sicilia, S. Italy, Crete, N. Africa)

Origin: Espana, nördl. Almeria. - Bot. G. Univ. Tübingen 1991: 157

Sown: 11.2.1992

Germ.: 18.2.1992

Flowers: +

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Aristidoideae

Arundinoideae (Phragmitoideae)

Fam./ Subfam. /Tribus: *Poaceae - Arundinoideae - Arundineae*

Sci. name: ***Arundo donax* L.**

Synonyms: —

Vernacular names: Giant Reed; Canna; Italienisches Rohr, Riesenschilf

Det. & Lit.: —

Distr.: Tropical Asia, (? introduced in the ?) Mediterranean

Origin: Arboretum Trsteno, Croatia 1992: 147; rhizome

Sown: —

Germ.: —

Flowers: + (winter)

Fruits: —

Propagation: division

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Arundinoideae - Arundineae*

Sci. name: ***Arundo plinii* TURRA**

Synonyms: *Arundo pliniana* TURRA

Vernacular names: Canna del Reno

Det. & Lit.: —

Distr.: Portugal, Mediterranean

Origin: Italy, Toscana, Siena, Strada per la Pievina, 240 m, bordo strada; 7.11.1995; leg. F. ROMI & P. MARCHETTI. - Bot. G. Univ. Siena 1997: p. 5

Sown: 10.6.1997

Germ.: 24.2.1998

Flowers: —

Fruits: —

Propagation: —

Location: KhAnz

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Arundinoideae - Arundineae*

Sci. name: ***Arundo plinii* TURRA**

Synonyms: *Arundo pliniana* TURRA

Vernacular names: Canna del Reno

Det. & Lit.: —

Distr.: Portugal, Mediterranean

Origin: Kroatien, Istrien, Ostküste, zwischen Mošćenička Draga - Plomin, an der Straße zum Hafen der Fähre nach Cres, S Sv. Katarina, 55 m, Kalk, lehmige Einschwemmungen; 15.3.1998; leg. R. KARL; live plant

Sown: —

Germ.: —

Flowers: + (winter)

Fruits: —

Propagation: —

Location: KhMed

Annot.: One clone only.

Lit.:

Danthonioideae

Fam./ Subfam. /Tribus: *Poaceae - Danthonioideae - Danthoneae*

Sci. name: ***Chionochloa rigida* (RAOUL) ZOTOV**

Synonyms: —

Vernacular names: Narrow-leaved Snow Grass, Narrow-leaved Snow Tussock

Det. & Lit.: C. MEURK

Distr.: New Zealand

Origin: New Zealand, South Island, Banks Peninsula S.E. Christchurch, Bossu Rd.; 43° 48' 58" S, 172° 47' 18" E; 11.3.2001; leg. J. BLAHA, C. EDLER & C. MEURK

Sown: 8.5.2001

Germ.: 11.5.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Danthonioideae - Danthoneae*

Sci. name: ***Chionochloa rubra* ZOTOV**

Synonyms: —

Vernacular names: Red Tussock

Det. & Lit.: —

Distr.: New Zealand

Origin: Chiltern Seeds (Ulverston, Cumbria, U.K.) 2001: 335E

Sown: 14.3.2001

Germ.: 23.3.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Danthonioideae - Danthoneae*

Sci. name: ***Rytidosperma unarede* (RAOUL) CONNOR & EDGAR**

Synonyms: *Danthonia unarede* RAOUL

Vernacular names: —

Det. & Lit.: H. TEPPNER 2002. - CONNOR & EDGAR 1979: 314-315, 328, 330

Distr.: New Zealand

Origin: New Zealand, South Island, Banks Peninsula S.E. Christchurch, Te oka; 43° 48' 58" S, 172° 47' 18" E; 11.3.2001; leg. J. BLAHA, C. EDLER & C. MEURK

Sown: 8.5.2001

Germ.: 13.5.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.: CONNOR H.E. & EDGAR E. 1979. *Rytidosperma* STEUDEL (*Notodanthonia* ZOTOV) in New Zealand. - New Zealand J. Bot. 17: 311-337.

Centothecoideae

Fam./ Subfam. /Tribus: *Poaceae - Centothecoideae - Centotheceae*

Sci. name: ***Chasmanthium latifolium* (MICHX.) YATES**

Synonyms: *Uniola latifolia* MICHX.

Vernacular names: Spike Grass

Det. & Lit.: —

Distr.: S.E. U.S.A. (from New Jersey, Pennsylvania, Ohio, Illinois, Missouri and Kansas S. to Florida and Texas)

Origin: Bot. G. Univ. Hohenheim, Stuttgart 2000: 936

Sown: 14.3.2001

Germ.: —

Flowers: none yet

Fruits: —

Propagation: —

Location: KhAnz.; in the open (Amer. division)

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Centothecoideae - Centotheceae*

Sci. name: ***Orthoclada laxa* (RICH.) P. BEAUV.**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 1999. - RENVOIZE 1998: 257

Distr.: Mexico to Bolivia and Brazil

Origin: —

Sown: 5.4.1999

Germ.: 14.5.1999

Flowers: +

Fruits: +

Propagation: rooting, procumbent shoots

Location: TrNeo

Annot.:

Lit.: RENVOIZE S.A. 1998. Gramineas de Bolivia. - The Royal Botanic Gardens, Kew.

PanicoideaeFam./ Subfam. /Tribus: *Poaceae* - ?*Centothecoideae*? - ?*Panicoideae*? - *Gynerieae*Sci. name: ***Gynerium sagittatum* (AUBL.) P. BEAUV. var. *sagittatum***Synonyms: *Gynerium saccharoides* HUMB. & BONPL.

Vernacular names: Caña brava

Det. & Lit.: —. - KALLIOLA & RENVOIZE 1994: 314

Distr.: Neotropics from the Caribbean and S. Mexico to trop. Argentina; river banks
(KALLIOLA & al. 1992, PUHAKKA & KALLIOLA 1995)Origin: Peru, Iquitos; 1986; leg. R. KALLIOLA. - Bot. G. Univ. Turku, Finland, comm. Matti
YLI-REKOLA. - Received 27.7.1995, rooted cutting

Sown: —

Germ.: —

Flowers: none yet

Fruits: —

Propagation: division, creeping shoots

Location: TeAn, TrVi

Annot.: The systematic position of *Gynerieae* is uncertain (SÁNCHEZ-KEN & CLARK 2001).Lit.: KALLIOLA R., PUHAKKA M. & SALO J. 1992. Intraspecific variation, and the distribution
and ecology of *Gynerium sagittatum* (*Poaceae*) in the western Amazon. - *Flora* 186:
153-167.— & RENVOIZE S.A. 1994. One or more species of *Gynerium* ? (*Poaceae*). - *Kew Bull.*
49(2): 305-320.PUHAKKA M. & KALLIOLA R. 1995. Floodplain vegetation mosaics in western Ama-
zonia. - *Biogeographica* 71(1): 1-14.SÁNCHEZ-KEN J. & CLARK L.G. 2001. *Gynerieae*, a new neotropical tribe of grasses
(*Poaceae*). - *Novon* 11(3): 350-352.Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Paniceae*Sci. name: ***Cenchrus echinatus* L.**Synonyms: *Cenchrus pungens* H.B.K.

Vernacular names: Spinose Sandbur, Hedgehog Grass; Stechendes Klettengras

Det. & Lit.: —

Distr.: Trop. America, introduced elsewhere

Origin: Karibik, Kleine Antillen, Insel Sint Maarten, Flughafen "Princess Juliana" SE, Hügel
"Billy Folly" NW, Simson Bay E, Sandstrand und angrenzende ruderalisierte Bereiche,
Kalk, 1 m; April 1995; leg. H. WITTMANN. - Bot. G. Univ. Salzburg 1995: 1016

Sown: 20.2.1996

Germ.: 23.2.1996

Flowers: +

Fruits: +

Propagation: seeds

Location: TrNeo

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Paniceae*Sci. name: ***Ichnanthus pallens* (SW.) MUNRO**Synonyms: *Panicum pallens* Sw.

Vernacular names: —

Det. & Lit.: H. TEPPNER 2001. - RENVOIZE 1998: 373, 375-376

Distr.: Caribbean and Mexico to Argentina; trop. Africa and Asia

Origin: —

Sown: 13.4.2001

Germ.: 30.4.2001

Flowers: +

Fruits: +

Propagation: —

Location: TrAnz

Annot.:

Lit.: RENVOIZE S.A. 1998. Gramineas de Bolivia. - The Royal Botanic Gardens, Kew.

Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Paniceae*

Sci. name: ***Oplismenus burmannii* (RETZ) P. BEAUV. var. *burmannii***

Synonyms: *Panicum burmannii* RETZ

Vernacular names: —

Det. & Lit.: H. TEPPNER 2000. - SCHOLZ 1981: 57-69

Distr.: Pantropic

Origin: Peru, Chanchamayo

Sown: from own crop 20.1.1999

Germ.: 24.1.1999

Flowers: +

Fruits: +

Propagation: seeds

Location: TrNeo

Annot.:

Lit.: DAVEY J.C. & CLAYTON W.D. 1978. Some multiple discriminant function studies on *Oplismenus* (*Gramineae*). - Kew Bull. 33(1): 147-157.

SCHOLZ U. 1981. Monographie der Gattung *Oplismenus* (*Gramineae*). - Phanerogamarum Monographieae Tomus XIII. - J. Cramer, Vaduz.

Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Paniceae*

Sci. name: ***Oplismenus hirtellus* (L.) P. BEAUV. subsp. *hirtellus***

Synonyms: —

Vernacular names: Basket Grass

Det. & Lit.: H. TEPPNER 2001. - SCHOLZ 1981: 101-111

Distr.: Pantropic, mainly in America and Africa (not in India and Indochina)

Origin: America

Sown: 13.4.2001

Germ.: 19.4.2001

Flowers: none yet

Fruits: —

Propagation: division, cuttings

Location: TrNeo

Annot.:

Lit.: DAVEY J.C. & CLAYTON W.D. 1978. Some multiple discriminant function studies on *Oplismenus* (*Gramineae*). - Kew Bull. 33(1): 147-157.

SCHOLZ U. 1981. Monographie der Gattung *Oplismenus* (*Gramineae*). - Phanerogamarum Monographieae Tomus XIII. - J. Cramer, Vaduz.

Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Paniceae*

Sci. name: ***Oplismenus hirtellus* (L.) P. BEAUV. subsp. *hirtellus***

Synonyms: —

Vernacular names: **Basket Grass**

Det. & Lit.: H. TEPPNER 2001. - SCHOLZ 1981: 101-111

Distr.: **Pantropic, mainly in America and Africa (not in India and Indochina)**

Origin: —

Sown: —

Germ.: —

Flowers: + (December - January)

Fruits: +

Propagation: **division, cuttings**

Location: **TrAnz**

Annot.: **Most probably only one clone. Origin not known, probably old stock of our garden.**

Lit.: **DAVEY J.C. & CLAYTON W.D. 1978. Some multiple discriminant function studies on *Oplismenus (Gramineae)*. - Kew Bull. 33(1): 147-157.**

SCHOLZ U. 1981. Monographie der Gattung *Oplismenus (Gramineae)*. - Phanerogamarum Monographiae Tomus XIII. - J. Cramer, Vaduz.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Paniceae*

Sci. name: ***Panicum sp.***

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 1994

Distr.: —

Origin: **comm. J. KRIEGE, Fa. Benary, Kittsee, Burgenland, Austria; 6.1993; live plants (seedlings)**

Sown: —

Germ.: —

Flowers: +

Fruits: +

Propagation: **division**

Location: **TrAs, TrAnz**

Annot.: **A species with large (up to 50 - 60 × 5 - 7 cm), plicate blades. Grown as host for *Aeginetia indica* L. (*Orobanchaceae*).**

Lit.: —

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Paniceae*

Sci. name: ***Paspalum dilatatum* POIRET**

Synonyms: —

Vernacular names: **Dallis Grass; Panico brasiliano; Gewöhnliches Pfannengras, Brasilianische Futterhirse**

Det. & Lit.: H. TEPPNER 8.3.2001. - PIGNATTI 1982: 611

Distr.: **U.S.A. to Argentina, elsewhere introduced**

Origin: **Italy, Liguria, between La Spézia and Sestri Levante, Déiva Marina; 1999; leg. G. POSCH**

Sown: **23.5. 2000**

Germ.: —

Flowers: +

Fruits: —

Propagation: **division**

Location: **TeSA**

Annot.: **One clone only**

Lit.: **PIGNATTI S. 1982. Flora d'Italia, 3. - Edagricole, Bologna.**

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Paniceae*

Sci. name: ***Pennisetum orientale* L.C. RICH.**

Synonyms: —

Vernacular names: Orientalisches Federborstengras

Det. & Lit.: —

Distr.: N. and E. Africa, S.W. and Central Asia (Fl. Iranica 70: 503, 1970)

Origin: Iran, Yazd, 28 km from Yazd - Tehran road, toward Robat-e Posht-e Badam (BA 3);
1500 m. - Iranian Bot. G., Tehran 1987/88: 186

Sown: 13.2.1989

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Paniceae*

Sci. name: ***Spinifex sericeus* R. BR.**

Synonyms: —

Vernacular names: Hairy Spinifex; Behaartes Stachelkopfgas

Det. & Lit.: H. TEPPNER 9.2000. - HARDEN 1993: 504

Distr.: Australia (Qld, N.S.W., Vic, Tas, Lord Howe Island), New Zealand, Pacific Islands

Origin: Australia, New South Wales, N. of Sydney, Berowra, Palm Beach, sand dune;
12.12.1997; leg. F. SPETA

Sown: 20.11.1998

Germ.: 26.11.1998 - 19.2.1999

Flowers: none yet

Fruits: —

Propagation: —

Location: KhSWA

Annot.:

Lit.: HARDEN G.J. 1993. Flora of New South Wales, 4. - New South Wales University Press,
Kensington.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Paniceae*

Sci. name: ***Stenotaphrum secundatum* (WALTER) KUNTZE**

Synonyms: *Ischaemum secundatum* WALTER

Vernacular names: St. Augustine Grass, Crabgrass; St. Augustin-Gras

Det. & Lit.: H. TEPPNER 1981

Distr.: Tropical coasts

Origin: 1. Peru, Lima, Miraflores, parks; 1981; leg. H. TEPPNER, cuttings
2. Peru, Chanchamayo, San Ramon, parks; 1981; leg. H. TEPPNER, cuttings

Sown: —

Germ.: —

Flowers: +

Fruits: —

Propagation: division, cuttings

Location: TeAn

Annot.: A mixture of the two clones is grown in the Andean division; on my private window sill I grow the two clones still separately. In Bot. Gardens grown as a hanging plant usually. In our greenhouse we grow *Stenotaphrum* on the walk between Andean and Namib division as a ground cover of irrigated, cut meadows, typical in desert climates (e.g., in Lima) and others, where *Stenotaphrum* is the only ground covering grass in parks and

gardens. Selfincompatible, even the two clones crosspollinated set no fruits. The chromosomes of the Miraflores clone were investigated by WETSCHNIG 1991: 122-123 ($2n = 18$).

Lit.: WETSCHNIG U. 1991. Karyologische Studien an einigen peruanischen Angiospermen. - Unpubl. Diss., Naturwiss. Fak., Karl-Franzens-Univ. Graz, Inst. Bot. - Graz.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Bothriochloa* sp.**

Synonyms: —

Vernacular names: —

Det. & Lit.: H. TEPPNER 2001

Distr.: —

Origin: America

Sown: 14.5.2001

Germ.: 19.5.2001

Flowers: none yet

Fruits: +

Propagation: —

Location: TrAnz

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Cymbopogon ambiguus* A. CAMUS**

Synonyms: *Cymbopogon exaltatus* auct., non (R. BR.) DOMIN

Vernacular names: Scented Grass. - [Lemon Grass (HARDEN 1993: 445)]

Det. & Lit.: H. TEPPNER 1998. - SIMON 1993: 88, 189

Distr.: Australia

Origin: Western Australia. - Chiltern Seeds (Ulverston, Cumbria, U.K.) 1993: 426D (received as *Cymbopogon exaltatus*)

Sown: 19.2.1993

Germ.: —

Flowers: +

Fruits: +

Propagation: seeds

Location: KhSWA

Annot.:

Lit.: HARDEN G.J. 1993. Flora of New South Wales, 4. - New South Wales University Press, Kensington.

SIMON B.K. 1993. A key to Australian grasses. - Brisbane.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Cymbopogon citratus* (DC.) STAPP**

Synonyms: *Andropogon citratus* DC.

Vernacular names: Hierba Luisa, Citronel; Serai, (West Indian) Lemon Grass; Westindisches Lemongras

Det. & Lit.: —

Distr.: Tropics, in cultivation only

Origin: Peru, Chanchamayo, San Ramon, cult.; 1981; leg. H. TEPPNER; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: cuttings

Location: TrKult, TrAnz

Annot.: Chromosomes of this clone investigated by WETSCHNIG 1991: 98-121 (2n = 60).

Lit.: WETSCHNIG U. 1991. Karyologische Studien an einigen peruanischen Angiospermen. - Unpubl. Diss., Naturwiss. Fak., Karl-Franzens-Univ. Graz, Inst. Bot. - Graz.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Hyparrhenia hirta* (L.) STAPP**

Synonyms: *Andropogon hirtus* L., *Cymbopogon hirtus* (L.) T. THOMS.

Vernacular names: Common Thatching Grass; Rauhes Deckgras [means Dachstrohgras] (CHIPPINDALL & CROOK 1976, Grasses Southern Afr.)

Det. & Lit.: —

Distr.: Macaronesia, Mediterranean to Pakistan, E. and S. Africa (CLAYTON 1969: 76, 78-81). Introduced in America and Australia (CLAYTON 1969: 78)

Origin: Italy, Sicilia, Catanzaro, Lamezia Terme; Lago Gizzeria; 9.1995. - Bot. G. Univ. Palermo 1995: 850

Sown: 8.8.1996

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhMe

Annot.:

Lit.: CLAYTON W.D. 1969. A revision of the genus *Hyparrhenia*. - Kew Bull., additional series 11.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Hyparrhenia hirta* (L.) STAPP**

Synonyms: *Andropogon hirtus* L., *Cymbopogon hirtus* (L.) T. THOMS.

Vernacular names: Common Thatching Grass; Rauhes Deckgras [means Dachstrohgras] (CHIPPINDALL & CROOK, 1976, Grasses Southern Afr.)

Det. & Lit.: —

Distr.: Macaronesia, Mediterranean to Pakistan, E. and S. Africa (CLAYTON 1969: 76, 78-81). Introduced in America and Australia (CLAYTON 1969: 78)

Origin: Sizilien, Prov. Enna, Umgebung des Lago di Pozillo, NO-Seite, 375m, Silikat, Weiderasen; 28.4.1997; leg. L. & R. KARL; live plant

Sown: —

Germ.: —

Flowers: +

Fruits: —

Propagation: —

Location: KhAnz

Annot.:

Lit.: CLAYTON W.D. 1969. A revision of the genus *Hyparrhenia*. - Kew Bull., additional series 11.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Rottboellia cochinchinensis* (LOUR.) W.D. CLAYTON**

Synonyms: *Rottboellia exaltata* L. fil. (CLAYTON, Kew Bull. 35: 817; 1981)

Vernacular names: Guinea Fowl Grass, Kokoma Grass; Gewöhnliches Schlangenschwanzgras

Det. & Lit.: H. TEPPNER 1999

Distr.: Trop. Asia and Africa, introduced elsewhere

Origin: Panama, Barro Colorado Island; 12.1999; leg. Ingeborg TEPPNER

Sown: 23.12.1999

Germ.: 25.2.2000

Flowers: +

Fruits: +

Propagation: seeds

Location: TrNeo

Annot.: Each rachis segment bears a large, more or less semiglobose knob at its proximal end; it originates from the pith of the lower neighbour internode. This knob functions as an elaiosome and is very attractive for ants (Fig. 5).

Lit.:



Fig. 5. *Rottboellia cochinchinensis* infructescence segments with knob-like elaiosomes, dispersed by ants. - Peru, Chanchamayo, San Ramon, garden. - Phot. 24.8.1981.

Fam./ Subfam. /Tribus: *Poaceae* - *Panicoideae* - *Andropogoneae*

Sci. name: ***Saccharum officinarum* L.**

Synonyms: —

Vernacular names: Sugar Cane; Zuckerrohr

Det. & Lit.: —

Distr.: S.E. Asia (? New Guinea ?); largely hybrids are cultivated in the tropics and subtropics

Origin: Brazil, Sao Paulo, comm. E. KORDESCH, c. 1985; cuttings

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: cuttings

Location: TrKult

Annot.: The adventive root primordia are laid in two or more transverse rows just above the node (to be seen by pulling the leaf sheath down) in *Saccharum officinarum*. Other big grasses with similar habit show only one such row. Long time back, such a grass existed in different Botanic Gardens, also ours, under the name of *Saccharum officinarum*. Ours, unfortunately got lost. In case if any other garden should be having such a grass, going under the name of *Saccharum*, with only one row of adventive root primordia, we would be very grateful for a live rhizome stock or culm pieces with two nodes.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Saccharum ravennae* (L.) MURRAY**

Synonyms: *Erianthus ravennae* (L.) P. BEAUV.

Vernacular names: Canna di Ravenna; Ravennagras

Det. & Lit.: —

Distr.: Mediterranean to N. India

Origin: Italy, Toscana, Grosseto, Marina di Grosseto, 2 m, macchia mediterranea; 7.10.1997;
leg. F. ROMI. - Bot. G. Univ. Siena 1999: p. 25

Sown: 17.3.1999

Germ.: —

Flowers: none yet

Fruits: —

Propagation: —

Location: KhMed

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Themeda gigantea* (CAV.) HACKEL**

Synonyms: —

Vernacular names: Ulla Grass

Det. & Lit.: —

Distr.: S.E. Asia (Indochina, Indonesia, New Guinea, Philippines) (LAZARIDES 1980: 77)

Origin: Vietnam, HA TAY province, BA VI Mts. National Park W of Hanoi near the Black
River (Song Da), Rain-forest, between 600 - 1200 m. - Bot. G. Hung. Acad. Sci.
Vácrátót 1999: 413

Sown: 7.5.1999

Germ.: 14. 5. 1999

Flowers: none yet

Fruits: —

Propagation: —

Location: TrAs

Annot.:

Lit.: LAZARIDES M. 1980. -The tropical grasses of Southeast Asia. - Phanerogamarum Mono-
graphiae Tomus XII. - J. Cramer, Vaduz.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Themeda triandra* FORSSK.** (SIMON 1985)

Synonyms: *Themeda australis* (R. BR.) STAPF

Vernacular names: Rooi-gras, Red Grass, Kangaroo Grass; Rotgras, Känguruhgras

Det. & Lit.: —

Distr.: Old World tropics and subtropics (Fl. Turkey 9: 617, 1985)

Origin: Tasmanien, bei Swansea. - Bot. G. Univ. Halle (Saale) 2001: 1580

Sown: 5.4.2001

Germ.: 20.4.2001

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAu

Annot.:

Lit.: HARDEN G.J. 1993. Flora of New South Wales, 4: 448. - New South Wales University
Press, Kensington.
SIMON B.K. 1985. What is the correct name for Kangaroo grass ? - Austral. syst. Bot.
Soc. Newsletter 43: 15-17.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Vetiveria zizanioides* (L.) NASH**

Synonyms: —

Vernacular names: Vetiver Grass, Khus-khus; Khuskhusgras, Vetiver, Indisches Riechgras

Det. & Lit.: —

Distr.: India, Bangladesh, Burma

Origin: Gewächshaus trop. Nutzpflanzen, Witzenhausen, Univ. Kassel, 5.5.1990; live plant

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: division

Location: TrVi

Annot.: The nonflowering domesticated type! We believe that the determination of our grass is correct, but we were not able to discern any odour from any organ and after any treatment till now.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Zea diploperennis* ILTIS, DOEBLEY & GUZMAN**

Synonyms: —

Vernacular names: Diploperennial Teosinte

Det. & Lit.: —

Distr.: Mexico (Jalisco, E. Sierra de Manantlán, La Ventana)

Origin: Bot. G. Smith College, Northampton, Mass., U.S.A. 1982-1983: 356

Sown: 23.6.1983

Germ.: —

Flowers: +

Fruits: +

Propagation: division, seeds

Location: TeSt

Annot.:

Lit.: ILTIS H.H., DOEBLEY J.F., GUZMÁN-M. R. & PAZY B. 1979. *Zea diploperennis* (*Gramineae*): A new Teosinte from Mexico. - Science 203: 186-188.

Fam./ Subfam. /Tribus: *Poaceae - Panicoideae - Andropogoneae*

Sci. name: ***Zea perennis* (HITCHC.) REEVES & MANGELSDORF**

Synonyms: *Euchlaena perennis* HITCHC.

Vernacular names: Perennial Teosinte

Det. & Lit.: —

Distr.: Mexico (Jalisco, Ciudad Guzmán)

Origin: Institut für Pflanzengenetik und Kulturpflanzenforschung, Gatersleben 1997; ZEA 803/1984 Herk.: England

Sown: 1.12.1997

Germ.: 9.12.1997

Flowers: none yet

Fruits: —

Propagation: —

Location: TeAnz

Annot.:

Lit.:

Chloridoideae (Eragrostoideae)Fam./ Subfam. /Tribus: *Poaceae - Chloridoideae - Eragrostoideae*Sci. name: ***Muhlenbergia flexuosa* HITCHCOCK**

Synonyms: —

Vernacular names: —

Det. & Lit.: Oscar TOVAR, Washington, 1980. H. TEPPNER 1981. - HITCHCOCK 1927: 387-390.

Distr.: Peru, Middle Central Andes: Dept. Huánuco (Prov. Huánuco), Dept. Pasco (Prov. Oxapampa) (TOVAR 1993: 266)

Origin: Peru, Dep. Pasco, Prov. Oxapampa, Schlucht des Rio Huancabamba, ca. 5 km N Huancabamba, ca. 1690 m; Felsen und felsige Steilhänge mit *Calceolaria* cf. *oblonga*, *Coriaria ruscifolia*, *Gloxinia sylvatica*, *Liabum* sp. u.a.; 12.8. und 13.8.1981; leg. H. TEPPNER & K. KEPLINGER, Te 81/95

Sown: 1981

Germ.: —

Flowers: + (December-February)

Fruits: +

Propagation: Seeds, cuttings, layers

Location: TeAn

Annot.: *M. flexuosa* has been hardly ever collected. I have seen it in the Rio Huancabamba valley at four localities, where the plant grows in rock crevices and on steep rocky slopes between c. 1370 m and c. 1690 m. The localities from North to South:

1. 31 km S Pozuzo, c. 1370 m; 1.6. 1979; Te 79/293, together with *Blechnum occidentale*, *Carex polystachya*, *Phragmopedilum boissierianum*, *Pityrogramma ferruginea* and *Weinmannia* cf. *glomerata*.

2. 9 km N Huancabamba, c. 1640 m; 13. 8. 1981; Te 81/105, together with *Ferreyr-anthus verbascifolius* and *Siphocampylus comosus*.

3. 45 km N Oxapampa, ca. 1660 m; 1.6.1979, Te 79/308, together with *Miconia condylata*, *Tibouchina echinata* and *Virgularia lanceolata*.

4. 5 km N Huancabamba, see above sub origin.

The above mentioned tall perennial herbs and shrubs grow at the base of the rocks and in grooves.

M. flexuosa is a small, nice grass, because of its tender habit, the small spikelets with glumes c. 3-4 mm long, anthers c. 1.1 - 1.3 mm long, deep purple stigmas and lemma awns around 2 cm in length (Fig. 8).

The plants can be grown in a cool greenhouse in pots or as a hanging plant in baskets because of the procumbent to pendent culms; Fig. 6 and 7.

The roots are hard and grow slowly, with low mitosis frequency. Therefore, it was difficult to obtain good mitotic metaphase plates and the consideration of chromosome morphology (Fig. 9) was not possible at an optimal level. The chromosome number is $2n = 40$; since the chromosome base number in the genus is $x = 10$ (e.g. CLAYTON & RENVOIZE 1989: 227, PETERSON & al. 1997: 33) the species is tetraploid. Meiosis was investigated in pollen mother cells. In metaphase I 20 bivalents are present, which, in general, show no irregularities (Fig. 10); sometimes, instead of a bivalent, two univalents were present at metaphase I.



Fig. 6. A tuft of *Muhlenbergia flexuosa* in a rock crevice in the natural habitat in the Rio Huancabamba valley, Peru (locality 2). - Phot. 13.8.1981.



Fig. 7. *Muhlenbergia flexuosa* grown as a basket plant. - Bot. G. Inst. Bot. Univ. Graz. - Phot. 29.12.1994.



Fig. 8. Part of an inflorescence of *Muhlenbergia flexuosa* at anthesis. - Bot. G. Inst. Bot. Univ. Graz. - Phot. 2.1.1995.

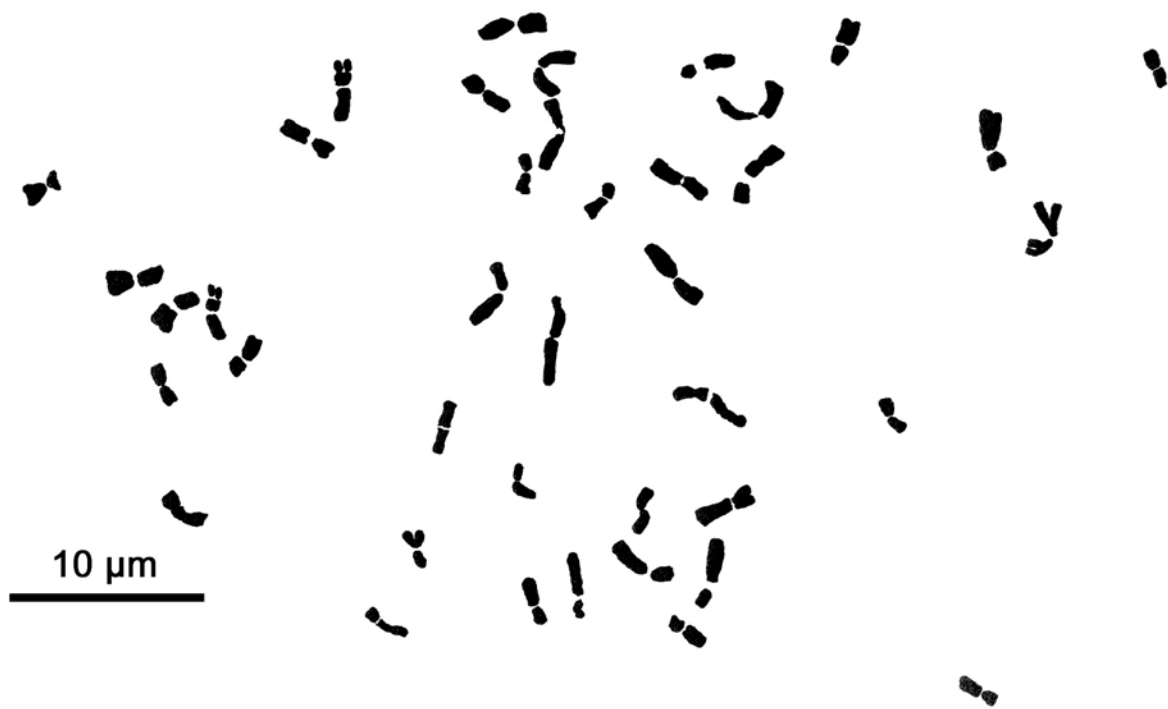


Fig. 9. Mitotic metaphase in a root tip cell of *Muhlenbergia flexuosa* with $2n = 40$ chromosomes. - Aceto-carmin squash preparation.

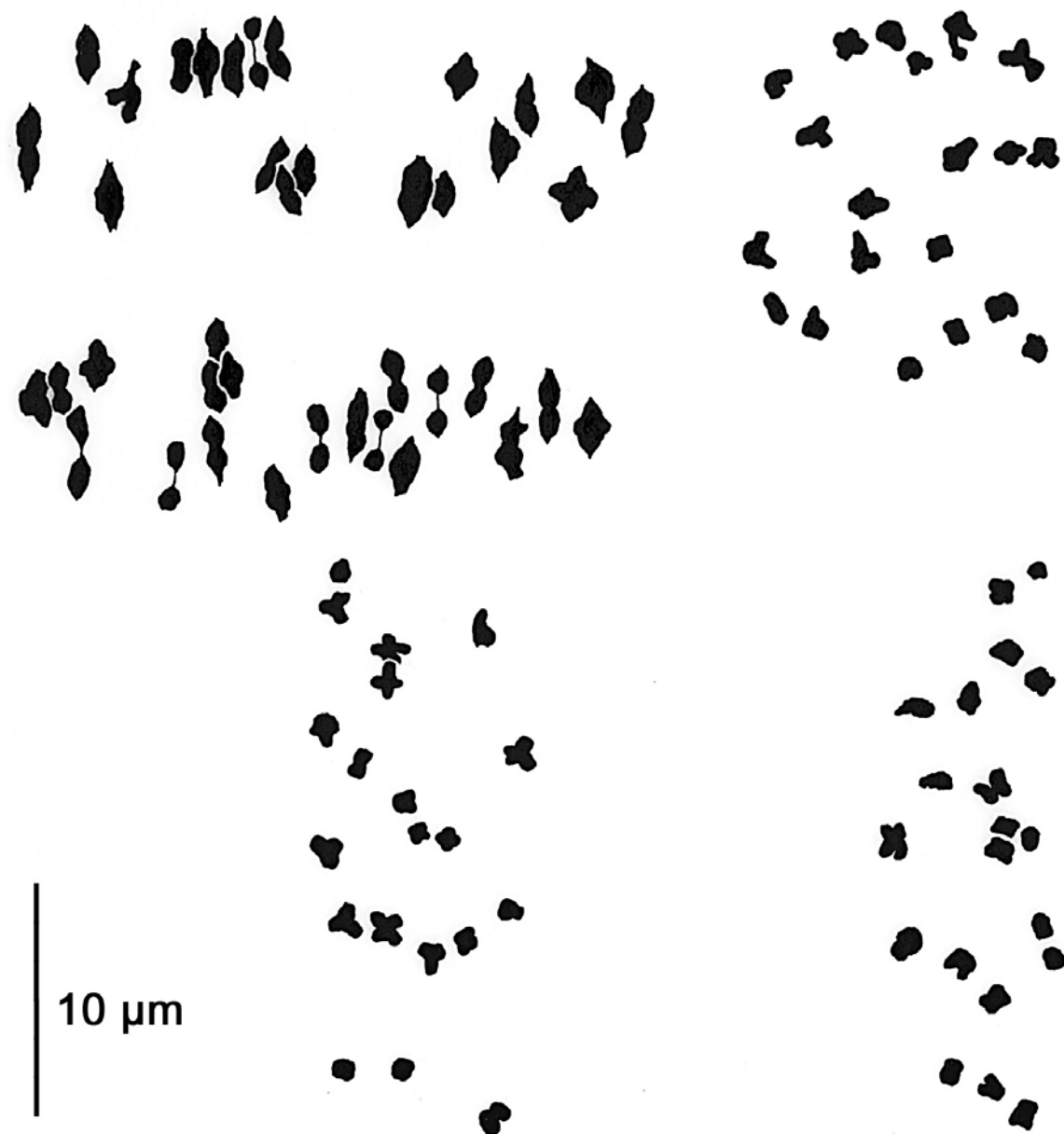


Fig. 10. Meiosis in PMCs of *Muhlenbergia flexuosa*, $n = 20$. - Two metaphase I plates in side view (above left) and one in polar view (above right). The two plates from a PMC in anaphase I below. - Aceto-carmine squash preparation.

- Lit.: CLAYTON W.D. & RENVOIZE S.A. 1989. Genera Graminum. Grasses of the World. 2nd print. - Kew Bulletin, additional series 13. - London.
HITCHCOCK A.S. 1927. The grasses of Ecuador, Peru and Bolivia. - Contrib. U.S. nation. Herb. 28(8): 291-556.
PETERSON P.M., WEBSTER R.D. & VALDES-REYNA J. 1997. Genera of New World *Eragrostideae* (*Poaceae*: *Chloridoideae*). - Smithsonian Contrib. Bot. 87.
TOVAR O. 1993. Las Gramíneas (*Poaceae*) del Perú. - Ruizia (Madrid) 13: 1-480.

Fam./ Subfam. /Tribus: *Poaceae* - *Chloridoideae* - *Eragrostideae*

Sci. name: ***Sporobolus indicus* (L.) R. BR.**

Synonyms: —

Vernacular names: Indian Drop-seed Grass, Smutgrass; Indisches Schleudersamengras, Indischer Fallsame

Det. & Lit.: —

Distr.: S.E. U.S.A. to Paraguay and Argentina, introduced elsewhere

Origin: France, Rhône. - Bot. G. Lyon 1996: 1062

Sown: 22.5.1996

Germ.: —

Flowers: +

Fruits: +

Propagation: —

Location: KhAnz

Annot.:

Lit.:

Fam./ Subfam. /Tribus: *Poaceae* - *Chloridoideae* - *Cynodonteae*

Sci. name: ***Chloris barbata* Sw.**

Synonyms: *Chloris inflata* LINK

Vernacular names: Swollen Fingergrass; Bärtiges Gilbgras

Det. & Lit.: H. TEPPNER 1997. - ADAMS 1972: 166-168

Distr.: Florida to Argentina, introduced elsewhere

Origin: Karibik, Kleine Antillen, Insel Sint Maarten, Flughafen "Princess Juliana" SE, Hügel "Billy Folly" NW, Simson Bay E, Sandstrand und angrenzende ruderalisierte Bereiche, Kalk, 1 m; April 1995; leg. H. WITTMANN. - Bot. G. Univ. Salzburg 1995: 1019 (received as *Chloris inflata* LINK)

Sown: 20.2.1996

Germ.: 22.2.1996

Flowers: +

Fruits: +

Propagation: seeds

Location: TrNeo

Annot.:

Lit.: ADAMS C.D. 1972. Flowering plants of Jamaica. - University of the West Indies, Mona, Jamaica.

Fam./ Subfam. /Tribus: *Poaceae* - *Chloridoideae* - *Cynodonteae*

Sci. name: ***Cynodon dactylon* (L.) PERS.**

Synonyms: —

Vernacular names: Bermuda Grass; Pasto Bermuda; Gros Chiendent; Bermudagrass, Gewöhnliches Hundszahngras

Det. & Lit.: H. TEPPNER 1992

Distr.: Pantropic and pansubtropic, elsewhere introduced

Origin: Italy, Lombardia, Brescia, near Roncadelle W.S.W. Brescia, highway service station; 24.7.1992; leg. H. TEPPNER; live plants

Sown: —

Germ.: —

Flowers: —

Fruits: —

Propagation: cuttings

Location: KhSWA, TeSA

Annot.: Grown as a potential host for different parasitic flowering plants.

Lit.:

Fam./ Subfam. /Tribus: *Poaceae - Chloridoideae - Cynodonteae*Sci. name: ***Trichloris crinita* (LAG.) PARODI**Synonyms: *Chloris crinita* LAG.

Vernacular names: —

Det. & Lit.: —

Distr.: N. America to Argentina

Origin: Argentinien, Mendoza, Nacunan. - Bot. G. Univ. Halle (Saale) 2000: 1692

Sown: 14.4.2000

Germ.: —

Flowers: +

Fruits: +

Propagation: —

Location: TeSA

Annot.:

Lit.:

Acknowledgments

First of all, I wish to thank all persons and institutions who provided living plant material. All are mentioned in the respective entities.

Many thanks as well to our gardeners for the care with which they grew the plants over the years. They are named in our annual seed catalogues.

The help of Dr. D.C. WASSHAUSEN and Dr. S.F. SMITH II in the determination of a part of the plants accompanying *Muhlenbergia flexuosa* is gratefully remembered.

I am deeply indebted to my wife Erika for her support and her work on the PC, especially for the transformation of my ideas on the data sheet into a practical form. Without her help, this first step in the presentation of our live plant material data would not have been possible.

Many thanks also to Mag. Dr. W. OBERMAYER for scanning the figures and incorporating them in the text, to Dr. Ch. SCHEUER for the layout, to Mag. Dr. U. BROSCHE and Dr. A. DRESCHER for the help in providing literature, and to P. HARVEY for checking the English language.

Alphabetical Index

<i>Aira elegantissima</i>	16
<i>Ammophila arenaria</i> subsp. <i>arundinacea</i>	16
<i>Ampelodesmos mauritanica</i>	20
<i>Anthoxanthum amarum</i>	17
<i>Anthoxanthum gracile</i>	17
<i>Anthoxanthum maderense</i>	18
<i>Anthoxanthum nivale</i>	18
<i>Anthoxanthum odoratum</i> , diploid race	18
<i>Arrhenatherum calderae</i>	19
<i>Arundo donax</i>	23
<i>Arundo plinii</i>	23
<i>Avena sterilis</i>	19
<i>Bambusa tuldoides</i>	6
<i>Bambusa ventricosa</i>	7
<i>Bothriochloa</i> sp.	30

<i>Brachypodium arbuscula</i>	14
<i>Brachypodium retusum</i>	14
<i>Cenchrus echinatus</i>	26
<i>Chasmanthium latifolium</i>	25
<i>Chionochloa rigida</i>	24
<i>Chionochloa rubra</i>	24
<i>Chloris barbata</i>	39
<i>Chusquea culeou</i>	7
<i>Cymbopogon ambiguus</i>	30
<i>Cymbopogon citratus</i>	30
<i>Cynodon dactylon</i>	39
<i>Cynosurus echinatus</i>	15
<i>Dactylis smithii</i> subsp. <i>hylodes</i>	15
<i>Dactylis smithii</i> subsp. <i>smithii</i>	15
<i>Dendrocalamus giganteus</i>	7
<i>Dichelachne crinita</i>	19
<i>Elymus solandri</i>	12
<i>Gynerium sagittatum</i> var. <i>sagittatum</i>	26
<i>Haynaldoticum sardoum</i>	12
<i>Hygroryza aristata</i>	11
<i>Hyparrhenia hirta</i>	31
<i>Ichnanthus pallens</i>	26
<i>Lagurus ovatus</i>	20
<i>Lygeum spartum</i>	22
<i>Muhlenbergia flexuosa</i>	35
<i>Oplismenus burmannii</i> var. <i>burmannii</i>	27
<i>Oplismenus hirtellus</i> subsp. <i>hirtellus</i>	27
<i>Orthoclada laxa</i>	25
<i>Oryza sativa</i> cv. IR8.....	11
<i>Oryza sativa</i> cv. "Schwarzer Klebreis".....	11
<i>Panicum</i> sp.	28
<i>Paspalum dilatatum</i>	28
<i>Pennisetum orientale</i>	29
<i>Pharus latifolius</i>	4
<i>Piptatherum miliaceum</i>	21
<i>Piptochaetium montevidense</i>	21
<i>Pleiblastus pygmaeus</i> var. <i>distichus</i>	8
<i>Poa cita</i>	16
<i>Polypogon monspeliensis</i>	20
<i>Pseudosasa japonica</i>	9
<i>Rottboellia cochinchinensis</i>	31
<i>Rytidosperma unarede</i>	25
<i>Saccharum officinarum</i>	32
<i>Saccharum ravennae</i>	33
<i>Spinifex sericeus</i>	29
<i>Sporobolus indicus</i>	38
<i>Stenotaphrum secundatum</i>	29
<i>Stipa bromoides</i>	21
<i>Stipa nitida</i>	22
<i>Stipa tenacissima</i>	22
<i>Streptochaeta sodiroana</i>	4

<i>Streptogyna americana</i>	9
<i>Themeda gigantea</i>	33
<i>Themeda triandra</i>	33
<i>Trichloris crinita</i>	40
<i>Triticum baeoticum</i>	13
<i>Triticum dicoccoides</i>	13
<i>Triticum urartu</i>	13
<i>Vetiveria zizanioides</i>	34
<i>Zea diploperennis</i>	34
<i>Zea perennis</i>	34

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Zeitschrift/Journal: [Fritschiana](#)

Jahr/Year: 2002

Band/Volume: [31](#)

Autor(en)/Author(s): Teppner Herwig

Artikel/Article: [Poaceae in the Greenhouses of the Botanic Garden of the Institute of Botany in Graz \(Austria, Europe\) 1-42](#)