



A Key to

Pacific Grasses

W. D. Clayton and Neil Snow



PLANTS PEOPLE
POSSIBILITIES

© The Board of Trustees of the Royal Botanic Gardens, Kew 2010
Illustrations © the artists as stated in the captions

The authors have asserted their rights to be identified as the authors of this work in accordance with the Copyright, Designs and Patents Act 1988

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise, without written permission of the publisher unless in accordance with the provisions of the Copyright Designs and Patents Act 1988.

Great care has been taken to maintain the accuracy of the information contained in this work. However, neither the publisher nor the authors can be held responsible for any consequences arising from use of the information contained herein.

First published in 2010 by
Royal Botanic Gardens, Kew,
Richmond, Surrey, TW9 3AB, UK
www.kew.org

ISBN 978-1-84246-379-6

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Production editor: Ruth Linklater
Typesetting, page layout and cover design: Christine Beard
Publishing, Design & Photography, Royal Botanic Gardens, Kew

Front cover: XXXXX

Printed by XXXXX

For information or to purchase all Kew titles please visit
www.kewbooks.com or email publishing@kew.org

Kew's mission is to inspire and deliver science-based plant conservation worldwide, enhancing the quality of life.

All proceeds go to support Kew's work in saving the world's plants for life.

Contents

Introduction

Materials and Methods	1
Numerical summary and geographic origins	5

References	8
------------------	---

Acknowledgements	9
------------------------	---

Key to Tribes	10
---------------------	----

Key to Genera	12
---------------------	----

Enumeration of species	23
------------------------------	----

Index	45
-------------	----

Key to Tribes

1. Spikelets 1–many-flowered, if 2-flowered then both bisexual or the upper imperfect:
 2. Leaf-blades with distinct cross-veins beneath, usually lanceolate or elliptic:
 3. Leaf venation slanting obliquely from midrib; lemma margins closed except for an apical pore; spikelets unisexual **Phareae**
 - 3 Leaf venation parallel; lemma margins free; spikelets bisexual **Centothecae**
 2. Leaf-blades without cross-veins:
 4. Glumes absent; spikelets 1-flowered **Oryzae**
 4. Glumes, or at least the upper, present though sometimes much reduced:
 5. Margins of lemma not clasping palea keels, sometimes enfolding palea but then spikelets 1-flowered, both scales usually membranous:
 6. Spikelets with 2 sterile florets below the single fertile floret and falling with it; inflorescence a loose panicle or raceme **Ehrharteae**
 6. Spikelets usually without sterile florets below the fertile, if present then inflorescence a spiciform or capitate panicle:
 7. Inflorescence a large plumose panicle; spikelets several-flowered **Arundineae**
 7. Inflorescence not a plumose panicle:
 8. Lemma 5- or more-veined (3-veined in *Dichelachne crinita*, *Koeleria macrantha*, *Oryzopsis miliacea*):
 9. Inflorescence a single bilateral raceme, the spikelets inserted broadside on opposite sides of the rachis **Triticeae**
 9. Inflorescence a panicle, rarely a raceme and then spikelets inserted edgewise on:
 10. Ovary capped by a hairy lobed appendage, the stigmas subterminal; lemma usually with a subterminal awn; leaf-sheaths usually hairy **Bromeae**
 10. Ovary glabrous or hairy but not appendaged, the stigmas terminal:
 11. Glumes shorter than the spikelet (longer in *Lolium temulentum* which has a bilateral raceme); spikelets dull:
 12. Upper glume 1-veined, obtuse (as to the typical genus *Glyceria*) **Meliceae**
 12. Upper glume 3–9-veined, rarely 1-veined and then acuminate; spikelets 2–many-flowered (except *Lamarckia*) **Poeae**
 11. Glumes equalling or exceeding the rest of the spikelet; rarely shorter and then spikelets shiny (if accompanied by sterile spikelets see *Poeae* — *Lamarckia*):
 13. Ligule membranous:

14. Floret laterally compressed, usually membranous, with or without a dorsal awn; spikelets usually shiny, 1–several-flowered **Aveneae**
14. Floret terete or dorsally compressed, more or less indurate, with a terminal awn; spikelets 1-flowered **Stipeae**
13. Ligule a line of hairs; lemmas awned from the sinus of a bilobed apex **Arundineae**
8. Lemma 1–3-veined (*Distichlis* 5–11-veined):
 15. Fertile lemma 3-awned **Aristideae**
 15. Fertile lemma with or without a single awn:
 16. Inflorescence a panicle, or composed of racemes and then spikelets several-flowered:
 17. Spikelets breaking up at maturity (or with several fertile florets — *Eragrostis superba*) **Eragrostideae**
 17. Spikelets falling entire, 1-flowered (as to the atypical genus *Garnotia*) **Arundinelleae**
 16. Inflorescence composed of racemes; spikelets with 1 fertile floret **Cynodonteae**
 5. Margins of lemma clasping palea keels, both scales usually indurated; spikelets strictly 2-flowered (if subtended by 1 or more bristles see *Panicum* — *Dissochondrus*):
 18. Spikelets dorsally compressed; lemma at most puberulous, never awned **Isachneae**
 - 18 Spikelets slightly laterally compressed; lemmas pilose or awned **Eriachneae**
1. Spikelets 2-flowered, the lower male or barren, the upper bisexual:
 19. Spikelets tardily breaking up at maturity (if lower lemma dorsally awned see *Aveneae* — *Arrhenatherum*) **Isachneae**
 19. Spikelets falling entire at maturity:
 20. Spikelets falling with pedicel attached, tiny, borne in a large panicle **Thysanolaeneae**
 20. Spikelets falling singly without pedicel, or falling in pairs or clusters:
 21. Glumes thinner than upper lemma, this more or less indurated; lower glume often shorter than spikelet **Panicaceae**
 21. Glumes thicker than upper lemma, this hyaline to membranous; lower glume as long as spikelet or almost so **Andropogoneae**

E. tenella (L.) P. Beauv. ex Roem. & Schult., *Syst. Veg.* 2: 576 (1817); *Fl. Guam* 190; *Fl. Niue* 242; *Pl. Samoa* 30; *Fl. Fann.* 352; *Fl. Fiji* 303; *Fl. Sol.* 184; *Man. Haw.* 1545; *Fl. Soc.* 337. *Poa tenella* L., *Sp. Pl.* 1: 69 (1753). *Poa amabilis* auct. non L.; *P. plumosa* Retz., *Observ. Bot.* 4: 20 (1786). *Eragrostis amabilis* auct. non (L.) Wight & Arn.; *Fl. Poly.* 83; *Fl. Raro.* 19; *Pl. Tonga* 52; *List Micro.* 41. *E. elythroblephara* Steud., *Syn. Pl. Glumac.* 1: 280 (1854). *E. amabilis* var. *plumosa* (Retz.) A. Camus in Lecomte, *Fl. Indo-Chine* 7: 557 (1922); *Fl. N. Cal.* 35. *E. tenella* var. *insularis* C. E. Hubb., *Bull. Misc. Inform., Kew* 1939: 654 (1939).
COO, CRL, FIJ, GIL, HAW, LIN, MRN, MRQ, MRS, NRU, NUE, NWC, PHX, SAM, SCI, SOL, TON, TUA, TUB, WAK; tropics.

E. tenuifolia (A. Rich.) Hochst. ex Steud., *Syn. Pl. Glumac.* 1: 268 (1854). *Poa tenuifolia* A. Rich., *Tent. Fl. Abyss.* 2: 425 (1850).
COO, HAW, NWC; tropics.

E. trichodes (Nutt.) Wood, *Class-book Bot.*, 1861 ed.: 796 (1861). *Poa trichodes* Nutt., *Trans. Amer. Philos. Soc.* 5: 146 (1837).
HAW; southern USA.

E. uniolooides (Retz.) Steud., *Syn. Pl. Glumac.* 1: 264 (1854); *Fl. Fiji* 301; *Man. Haw.* 1538. *Poa uniolooides* Retz., *Observ. Bot.* 5: 19 (1789).
CRL, FIJ, HAW, NWC, SOL; tropical Asia.

E. variabilis (Gaudich.) Steud., *Nomencl. Bot.*, ed. 2, 1: 564 (1840); *Man. Haw.* 1545. *Poa variabilis* Gaudich., *Voy Uranie*: 408 (1829). *Eragrostis equitans* Trin., *Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math.* 1: 413 (1831). *E. wahowensis* Trin., l.c.: 413. *E. hawaiiensis* Hillebr., *Fl. Hawaiian Isl.*: 530 (1888). *E. phleoides* Hillebr., l.c.: 530. *E. thyrsoidea* Hillebr., l.c.: 529. *E. variabilis* var. *ciliata* Hillebr., l.c.: 529. *E. niuhauensis* Whitney, *Occas. Pap. Bernice Pauahi Bishop Mus.* 13(5): 6 (1936). *E. hobyi* H. St. John, *Phytologia* 64: 177 (1988).
HAW.

Note: Many species intergrade, at least slightly, and we recommend consulting local keys as well.

47. Ectrosiopsis

E. lasioclada (Merr.) Jansen, *Reinwardtia* 2: 268 (1953). *Eragrostis lasioclada* Merr., *Philipp. J. Sci.* 1, *Suppl.*: 382 (1906). *E. subaristata* Chase, *J. Arnold Arbor.* 20: 305 (1939). *Ectrosiopsis subaristata* (Chase) Jansen, *Reinwardtia* 2: 269 (1953); *List Micro.* 41. *Ectrosia lasioclada* (Merr.) S. T. Blake, *Proc. Roy. Soc. Queensland* 84: 65 (1973).
CRL; Australia.

48. Ectrosia

E. agrostoides Benth., *Fl. Austral.* 7: 634 (1878). *E. leporina sensu List Micro.* 41.
CRL; Moluccas, Australia.

49. Leptochloa

1. Plants annual:
 2. Ligules (0.5–)1–2 mm long, apically erose; spikelets 1.9–2.5 mm long; lemma 0.8–1.2 mm long; lemma keel pubescent **L. panicea**
 2. Ligules 4–8 mm long, apically attenuate but becoming lacerate; spikelets 3–8 mm long; lemma 2–2.5 mm long; lemma keel glabrous **L. fusca**
1. Plants perennial:
 3. Leaf-blades filiform, stiff, convolute, 0.5–1 mm wide **L. xerophila**
 3. Leaf-blades herbaceous, 3–10 mm wide:
 4. Spikelets broadly linear, lightly compressed, loosely spaced in slender flexuous racemes; lemmas awnless **L. decipiens**
 4. Spikelets oblong, strongly compressed, overlapping; lemmas often awned:
 5. Racemes flexuous, the longer 6–12 cm **L. virgata**
 5. Racemes straight, stiff, the longer 3–4 cm **L. marquisensis**

L. decipiens (R. Br.) Stapf ex Maiden, *Agric. Gaz. New South Wales* 20: 307 (1909). *Poa decipiens* R. Br., *Prodr.*: 181 (1810). *Leptochloa capillacea sensu Fl. N. Cal.* 34.
NWC; Australia.

Note. Pacific specimens are all *L. decipiens* subsp. *decipiens*.

L. fusca (L.) Kunth, *Révis. Gramin.* 1: 91 (1829). *Poa malabarica* L., *Sp. Pl.* 1: 69 (1753), nom. rejic. *Festuca fusca* L., *Sp. Pl.*, ed. 2, 1: 109 (1762). *Megastachya uninervia* J. Presl in C. Presl, *Reliq. Haenk.* 1: 279 (1830). *Centotheca malabarica* (L.) Merr., *Philipp. J. Sci.* 1, *Suppl.*: 385 (1906); *Fl. N. Cal.* 35. *Leptochloa uninervia* (J. Presl) Hitchc. & Chase, *Contr. US Natl. Herb.* 18: 383 (1917); *Man. Haw.* 1558.
HAW, NWC; tropics.

Note. Pacific specimens are all *Leptochloa fusca* subsp. *uninervia* (J. Presl) N. Snow, *Novon* 8: 79 (1998).

L. marquisensis (F. Br.) P. M. Peterson & Judz., *Taxon* 39: 659 (1990). *Eragrostis marquisensis* F. Br., *Bernice Pauahi Bishop Mus. Bull.* 84: 81 (1931).
MRQ.

L. panicea (Retz.) Ohwi, *Bot. Mag. (Tokyo)* 55: 311 (1941); *List Micro.* 47. *Poa panicea* Retz., *Observ. Bot.* 3: 11 (1783). *Eleusine filiformis* Pers., *Syn. Pl.* 1: 87 (1805). *Leptochloa filiformis* (Pers.) P. Beauv., *Ess. Agrostogr.*: 71 (1812); *List Micro.* 47.
MRN; tropics.

Note. Pacific specimens are all *Leptochloa panicea* subsp. *panicea*.

L. virgata (L.) P. Beauv., *Ess. Agrostogr.*: 71 (1812). *Cynosurus virgatus* L., *Syst. Nat.*, ed. 10, 2: 876 (1759).
HAW; North & South America, introduced to Borneo & New Guinea.

L. xerophila P. M. Peterson & Judz., *Taxon* 39: 659 (1990). *Eragrostis xerophila* F. Br., *Bernice Pauahi Bishop Mus. Bull.* 84: 82 (1931, non Domin (1912)).
MRQ.