https://doi.org/10.26749/rstpp.103.69

A SPECIES LIST OF AND KEYS TO THE GRASSES IN TASMANIA

By

JOCELYN E. S. TOWNROW

Faculty of Agricultural Science,
University of Tasmania

(With two text figures)

ABSTRACT

A dichotomising key is presented to facilitate the identification of the 190 species of the family Gramineae so far recorded for Tasmania. Brief notes of interest are included and the technical terms used are defined in diagrams and a short glossary. A second key to 70 species based on vegetative characters alone is included.

INTRODUCTION

No text on grasses present in Tasmania has been produced since the publication of Rodway's Tasmanian Flora of 1903, now obsolete and virtually unobtainable. The present species list has been compiled over a period of five years of general collecting by the author and students of the Faculty of Agricultural Science, University of Tasmania, and includes species found in that time whether native, introduced, wild or cultivated, in addition to a further dozen or more species recorded for Tasmania in the literature. Further additions are to be expected as detailed taxonomic studies are made of various difficult groups such as the Speargrasses (*Stipa* spp.).

Of the 190 species listed about 100 have been introduced since the arrival of the first white settlers, and of the 90 or so native species about 10 are thought to be *endemic (marked 'E' in list)*.

The majority of the native species occur in the following genera:—*Poa, Hierochloë, Amphibromus, Dichelachne, Deyeuxia, Agrostis, Danthonia* and *Stipa,* and are now mostly confined to agriculturally undisturbed heathland, and the more open parts of dry sclerophyll, in addition to mountain tops, where most of the probably endemic species such as *Danthonia pauciflora* occur. The species which are members of the *native flora are marked* 'n'

Some of the species in the list are seldom found, either because they are rare indigenous grasses, or else are occasionally introduced weedy species or newly introduced species of agricultural value. *Rare grasses are indicated by the letter* 'R' against the species number, and brief locality notes where known are given for the indigenous species amongst them.

The systematic arrangement of species in the list follows that used by J. H. Willis (1962), and the common names are largely taken from *Standardised Plant Names* C.S.I.R.O. Bull. No. 272. Those common names marked with an asterisk (*) are from J. H. Willis (1962) or C. E. Hubbard (1954).

The key to the species is based on characters which may be easily determined although a $\times 10$ lens and a millimeter scale are necessary; technical terms have been avoided as much as possible. This key relies heavily on the keys to genera and species in J. H. Willis's 'A Handbook to Plants in Victoria' Vol. 1, in C. E. Hubbard's 'Grasses', C. A. Gardner's 'Flora of Western Australia', and in J. W. Vickery's various publications dealing with the Australian Species of *Danthonia, Agrostis* and *Deyeuxia* listed in the references. The key is composed of couplets or pairs of contrasting propositions each numbered consecutively with the alternative leads in each labelled (*a*) and (*b*). In a few instances more than two leads have been found convenient. Emphasis by means of italics is given to contrasting characters in the leads. The section (key numbers 126-132) dealing with the rather difficult genus *Stipa* (Speargrasses) is tentative, because the range of species in Tasmania and their identification is currently under study, and further additions and modifications are anticipated.

The key utilising vegetative characters only includes species mostly of agricultural significance, and will be of interest to those working with living plants in the field, when inflorescences are not available.

SPECIES LIST OF THE GRAMINEAE RECORDED IN TASMANIA[1]

Tribe		Common Name	Locality
1. *Ehrharteae*—			
R	1. *Ehrharta calycina* Sm.	Veldt grass, perennial	
n	2. *Microlaena stipoides* (Labill.) R. Br.	Weeping grass	
E n	3. *Microlaena tasmanica* H. & var. *subalpina* Rod.		
n	4. *Tetrarrhena acuminata* R. Br.	Ricegrass, pointed	
n	5. *Tetrarrhena distichophylla* (Labill.) R. Br.	Ricegrass, hairy	
n	6. *Tetrarrhena juncea* R. Br.	Ricegrass, wiry	
2. *Festuceae*—			
	7. *Briza maxima* L.	Quaking grass	
	8. *Briza minor* L.	Shivery grass	
	9. *Dactylis glomerata* L.	Cocksfoot	
n	10. *Puccinellia stricta* (Hook. f.) C. Blom	Marsh grass	
	11. *Catapodium rigidum* (L.) C. E. Hubbard	*Fern grass, rigid fescue	
n	12. *Distichlis distichophylla* (Labill.) Fassett	Saltgrass Australian	
n	13. *Poa poiformis* (Labill.) Druce	*Blue tussock grass	
n	14. *Poa labillardieri* Steud.	Tussockgrass, white	
n	15. *Poa tenera* F. Muell. ex Hook.	*Slender tussock grass	
R	16. *Poa compressa* L.	Bluegrass, Canada	
	17. *Poa pratensis* L.	Bluegrass, Kentucky	
n	18. *Poa saxicola* R. Br.	*Rock poa	
	19. *Poa annua* L.	Poa, annual/wintergrass/goosegrass	
	20. *Poa trivialis* L.	Meadow grass, rough-stalk	
R	21. *Poa bulbosa* L.	Poa, bulbous	
?E n	22. *Poa gunnii* (M. S. J. W. Vickery) also viviparous form		
n R	23. *Dryopoa dives* (F. Muell.) J. W. Vickery ≡ *Festuca dives* F. Muell.	*Giant mountain grass	Hills south of Kaoota. Snug Plains
n	24. *Festuca littoralis* Labill.	Fescue, coast	
n	25. *Festuca asperula* J. W. Vickery	Fescue, graceful	
	26. *Festuca rubra* L.	Fescue, red	
n	27. *Festuca hookeriana* F. Muell. ex. Hook.	Fescue, Hooker's	
	28. *Festuca arundinacea* Schreb.	Fescue, tall	
n R	29. *Festuca plebeia* R. Br.		Table Mountain near R. Derwent; Mt Stuart
	30. *Vulpia bromoides* (L.) S. F. Gray	*Squirrel-tail fescue	
	31. *Vulpia myuros* (L.) K. C. Gmel.	*Rat's-tail fescue	
	32. *Vulpia megalura* (Nutt.) Rydb.	*Fox-tail fescue	
R	33. *Lolium temulentum* L.	Darnel	
	34. *Lolium perenne* L.	Ryegrass, perennial	
	35. *Lolium multiflorum* Lam.	Ryegrass, Italian	
	36. *Lolium rigidum* Gaudin	Rygrass, Wimmera	
	37. *Lolium loliaceum* (Bory & Chaub.) Hand.-Mazz.	Ryegrass, rigid	
	38. *Cynosurus echinatus* L.	Dogstail, rough	
	39. *Cynosurus cristatus* L.	Dogstail, crested	
3. *Glycerieae*—			
n	40. *Glyceria australia* C. E. Hubbard	*Australian Sweet-grass	
	41. *Glyceria maxima* (Hartm.) Holmb.	Meadow grass, water	
	42. *Glyceria declinata* Breb.	*Glaucous Sweet-grass	

[1] E = endemic n = native R = rare * = Common name from Hubbard (1954) or Willis (1962)

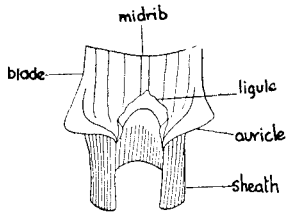
		Tribe	Common Name	Locality
4. *Bromeae*—				
		43. *Bromus unioloides* (Willd.) Humb.	Prairie grass	
		44. *Bromus cebadilla* Steud.	*Chilean Brome	
		45. *Bromus mollis* L.	Brome, soft	
		45A. *Bromus thominii* Hard.		
		46. *Bromus sterilis* L.	Brome, sterile	
		47. *Bromus diandrus* Roth.	Brome, great	
		48. *Bromus madritensis* L.	Brome, Madrid	
		49. *Bromus macrostachys* Desf.	Brome, Mediterranean	
4a. *Brachypodieae*—				
	R	50. *Brachypodium distachyum* (L.) Beauv.	Brome, false	
5. *Hordeeae*—				
	n	51. *Agropyron scabrum* (Labill.) Beauv.	Wheatgrass, common	
		52. *Agropyron repens* (L.) Beauv.	Couch, English	
	R	53. *Agropyron junceum* (L.) Beauv.	*Sea Wheat-grass Sea couch	
	n R	54. *Agropyron velutinum* Nees	Wheatgrass, velvet	Alpine and subalpine grassland above 4000 feet
	n	55. *Agropyron pectinatum* (Labill.) Beauv.	Wheatgrass, comb	
		56. *Triticum aestivum* L.	Wheat	
		57. *Secale cereale* L.	Rye	
		58. *Hordeum vulgare* L.	*6-row Barley	
		59. *Hordeum distichon* Hook.	*2-row Barley	
		60. *Hordeum leporinum* Link	Barley grass	
		61. *Hordeum marinum* Huds.	Barley grass, sea	
		62. *Hordeum hystrix* Roth	*Barley grass, Mediterranean	
6. *Monermeae*—				
		63. *Monerma cylindrica* (Willd.) Coss. & Durieu	Barb grass, common	
		64. *Parapholis incurva* (L.) C. E. Hubbard (1946)	Barb grass, coast	
7. *Aveneae*—				
		65. *Avena sativa* L.	Oat, common	
		66. *Avena fatua* L.	Oat, wild	
	R	67. *Avena alba* Vahl	*Bearded oat	
	R	68. *Avena strigosa* Schreb.	*Bristle oat	
	n R	69. *Amphibromus archeri* (Hook. f.) P. F. Morris	*Pointed Swamp Wallaby grass	Roadside Exeter
	n	70. *Amphibromus neesii* Steud.	Wallaby grass, swamp	
	n R	71. *Amphibromus recurvatus* J. R. Swallen	*Dark Swamp Wallaby grass	Swampy ground near Bruny Island airstrip, Mt Field Nat. Park
		72. *Arrhenatherum elatius* (L.) J. & C. Presl and var. *bulbosum* (Willd.) Spen	Oatgrass, false *Onion couch/ Bulbous oatgrass	
	R	73. *Koeleria phleoides* (Vill.) Pers.	Catstail, annual	
	R	74. *Koeleria cristata* Pers.	Catstail, crested	
	R	75. *Trisetum spicatum* (L.) Richt.	Bristle grass	
	R	76. *Deschampsia caesipitosa* (L.) Beauv.	Hair grass, tufted	
		77. *Aira caryophyllea* L.	Hair grass, silvery	
		78. *Aira praecox* L.	Hair grass, early	
		79. *Aira elegans* Willd. ex Gaudin.		
		80. *Holcus lanatus* L.	Fog, Yorkshire	
	n	81. *Hierochloë redolens* (Soland. ex Vahl) Roem. & Schult.	Holygrass, sweet	
	n R	82. *Hierochloë rariflora* Hook.	Holygrass, scented	Mountain tops Waratah N.W. Coast
	?E n	83. *Hierochloë fraseri* Hook.		
		84. *Anthoxanthum odoratum* L.	Vernalgrass, sweet-scented	

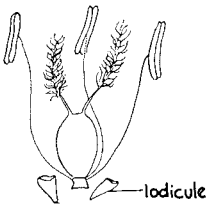
Tribe		Common Name	Locality
8. *Phalarideae*—			
	85. *Phalaris arundinacea* L. and *var. picta* L.	Canary grass, reed *Ribbon grass	
	86. *Phalaris minor* Retz.	Canary grass, lesser	
	87. *Phalaris tuberosa* L.	Phalaris/Toowoomba canary grass	
R	88. *Phalaris canariensis* L.	Canary grass	
R	89. *Phalaris coerulescens* Desf.		
9. *Agrostideae*—			
	90. *Ammophila arenaria* (L.) Link	Marram grass	
n	91. *Dichelachne crinita* (L.f.) Hook.	Plumegrass, long-hair	
n	92. *Dichelachne sciurea* (R. Br.) Hook.	Plumegrass, short-hair	
E n R	93. *Dichelachne sieberiana* Trin.		Mt Roland
n R	94. *Dichelachne rara* R. Br.		Lune River, Bruny Is., Lyell Highway Mt Arrow-Smith
n R	95. *Deyeuxia gunniana* (Nees) Benth.		Blakes Opening, Huon Rd, Zeehan
n R	96. *Deyeuxia brachyathera* (Stapf) J. W. Vickery		Thomas Plains (Rodway)
n	97. *Deyeuxia quadriseta* (Labill.) Benth.	Bent grass, reed	
n	98. *Deyeuxia monticola* (Roem & Schult.) J. W. Vickery		
E n R	99. *Deyeuxia accedens* J. W. Vickery		Fern Tree, Mt Wellington; towards Arthurs Lakes
n	100. *Deyeuxia densa* Benth.		
n R	101. *Deyeuxia carinata* J. W. Vickery		Mt Mawson, Mt Field Nat. Park
n	102. *Deyeuxia minor* F. Muell. ex Benth.		
E n	103. *Deyeuxia rodwayi* J. W. Vickery		
n R	104. *Deyeuxia benthamiana* J. W. Vickery		Huon Rd & Mt Wellington
n R	105. *Deyeuxia scaberula* J. W. Vickery		Base Mt Wellington, Huon Rd
n	106. *Deyeuxia contracta* (F. Muell. ex Hook. f.) J. W. Vickery		
n R	107. *Deyeuxia parviseta* J. W. Vickery		Mt Mawson, Mt Field Nat. Park
E n R	108. *Deyeuxia lawrencei*, J. W. Vickery		
n R	109. *Agrostis rudis* Roem. & Schult.	*Bent	Adventure Bay in swamp, Trial Harbour
n R	110. *Agrostis hiemalis* (Walt.) Britton, *et al.*	Bent, winter	Dromedary Swamp (Rodway)
	111. *Agrostis stolonifera* L.	Bent, creeping	
	112. *Agrostis tenuis* Sibth.	Bent, browntop	
R	113. *Agrostis gigantea* Roth	Bent, redtop	
n R	114. *Agrostis muelleriana* J. W. Vickery	Bent, Muellers'	Smithies' Flats The Lakes
n	115. *Agrostis parviflora* R. Br.	Bent, hair	
n R	116. *Agrostis australiensis* Mez	Bent, Australian	Mt Wellington
n	117. *Agrostis venusta* Trin.	Bent, graceful	
n	118. *Agrostis billardieri* R. Br. + vars. *filifolia* & *robusta* J. W. Vickery	Blown grass, coastal	
n	119. *Agrostis aemula* R. Br.	Blown grass	
n	120. *Agrostis avenacea* J. F. Gmel.	Blown grass	
n R	121. *Agrostis aequata* Nees		
	122. *Agrostis semiverticillata* (Frosk.) C. Ch.	*Water bent	
	123. *Polypogon monspeliensis* (L.) Desf.	Beardgrass, annual	
	124. *Polypogon maritimus* Willd.	*Coast Beard-grass	

Tribe			Common Name	Locality
		125. *Polypogon littoralis* Sm.	*Perennial Beard-grass	
		126. *Gastridium ventricosum* (Gouan) Schinz & Thell.	Nitgrass	
		127. *Lagurus ovatus* L.	Harestail grass	
		128. *Phleum pratense* L.	Timothy grass	
	R	129. *Alopecurus geniculatus* L.	Foxtail, marsh	
		130. *Alopecurus pratensis* L.	Foxtail, meadow	
		131. *Alopecurus myosuroides* Huds.	Foxtail, slender	
	n	132. *Echinopogon ovatus* (Forst. f.) Beauv.	Hedgehog grass, forest	
	n	133. *Pentapogon quadrifidus* (Labill.) Baill.	Speargrass, five-awn	
10. *Zoisieae*—				
	R	134. *Zoisia macrantha* Desv.	*Prickly Couch	Bass Strait Islands
	R	135. *Zoisia matrella* (L.) E. D. Merrill		
11. *Eragrostideae*—				
	n	136. *Eragrostis brownii* Nees ex Steud.	Lovegrass, Brown's	
		137. *Eragrostis cilianensis* (All.) Link ex Lut.	Stink grass	
12. *Chlorideae*—				
		138. *Cynodon dactylon* (L.) Pers.	Couch	
13. *Spartineae*—				
		139. *Spartina townsendii* H. & J. Groves	*Townsend's Cord-grass	
14. *Sporoboleae*—				
		140. *Sporobolus capensis* Kunth	Paramatta grass	
		141. *Sporobolus virginicus* (L.) Kunth	Couch, sand	
15. *Nardeae*—				
	R	142. *Nardus stricta* L.	*Mat-grass	
16. *Arundineae*—				
		143. *Phragmites communis* Trin.	Reed, common	
		144. *Cortaderia selloana* (Schult.) Aschers. & Graebn.	*Pampas grass	
17. *Danthonieae*—				
	n R	145. *Danthonia carphoides* F. Muell. ex Benth. and var. *angustior* J. W. Vickery	Wallaby grass, short	Cataract Gorge Domain Hobart
	n	146. *Danthonia semiannularis* (Labill.) R. Br. and var. *gracilis* Hook f.	Wallaby grass, Tasmanian	
	n R	147. *Danthonia longifolia* R. Br.	*Long-leaf Wallaby grass	
	E n R	148. *Danthonia pauciflora*	*Alpine Wallaby grass	Mt Mawson, Great Lake
	n	149. *Danthonia purpurascens* J. W. Vickery	*Wallaby grass	
	n	150. *Danthonia setacea* R. Br.	Wallaby grass, smallflower	
	n	151. *Danthonia caespitosa* Gaud.	Wallaby grass, ringed	
	n	152. *Danthonia procera* J. W. Vickery	*Tall Wallaby grass	
	n R	153. *Danthonia eriantha* Lindl.		
	n	154. *Danthonia laevis* J. W. Vickery		
	n	155. *Danthonia pilosa* R. Br.	Wallaby grass, smoothflower	
	n	156. *Danthonia penicillata* (Labill.) Beauv.	Wallaby grass, slender	
	n	157. *Danthonia racemosa* R. Br.		
	n R	158. *Danthonia nudiflora* P. F. Morris	*Alpine Wallaby grass	High alpine—Ben Lomond, Cradle Mt
	n R	159. *Danthonia nivicola* J. W. Vickery	*Snow Wallaby grass	Mt Rufus, Great Lake
	E n	160. *Danthonia dimidiata* J. W. Vickery		
	E n R	161. *Danthonia* sp. (undescribed)		Mt Mawson
	R	162. *Sieglingia decumbens* (L.) Bernh.	*Heath grass	

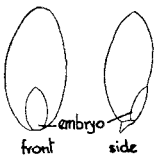
Tribe			Common Name	Locality
18. *Stipeae*—				
	n	163. *Stipa teretifolia* Steud.	*Coast Spear grass	
	n	164. *Stipa semibarbata* R. Br.	Speargrass, fibrous	
	n	165. *Stipa variabilis* D. K. Hughes	Speargrass, variable	
	n	166. *Stipa compacta* D. K. Hughes		
	n	167. *Stipa elatior* (Benth) D. K. Hughes		
	n	168. *Stipa nervosa* J. W. Vickery		
	n	169. *Stipa pubescens* R. Br.	Speargrass, tall	
	E n	and var. *aphylla* Rod.		
	n	170. *Stipa aphanoneura* D. K. Hughes		
	E n	171. *Stipa stuposa* D. K. Hughes		
	n	172. *Stipa eremophila* Reader		
	R	173. *Nassella trichotoma* (Nees) Hack.	Tussock, serrated	
		174. *Oryzopsis miliacea* (L.) Benth.	Millet, rice	
19. *Paniceae*—				
		175. *Panicum miliaceum* L.	Panic, millet	
	R	176. *Paspalidium gracile* (R. Br.) D. K. Hughes	Panic, slender	
		177. *Echinochloa crus-galli* (L.) Beauv.	Millet, Barnyard	
		and var. *frumentacea* (Link) W. F. Wright	Millet, Japanese	
		178. *Digitaria sanguinalis* (L.) Scop.	Summer grass	
		179. *Paspalum distichum* L.	Couch, water	
		180. *Paspalum dilatatum* Poir	Paspalum	
		181. *Setaria verticillata* (L.) Beauv.	Pigeon grass, whorled	
		182. *Setaria viridis* (L.) Beauv.	Pigeon grass, green	
		183. *Pennisetum clandestinum* Hochst. ex Chiov.	Kikuyu grass	
	R	184. *Pennisetum macrourum* Trin.	Feathergrass, African	
	R	185. *Pennisetum villosum* R. Br.	Feathertop	Bass Strait Islands
		186. *Stenotaphrum secundatum* (Walt.) Kuntze	Buffalo grass	
	n	187. *Spinifex hirsutus* Labill.	Spinifex, hairy	
20. *Andropogoneae*—				
	n	188. *Hemarthria uncinata* R. Br.	Mat grass	
		189. *Imperata cylindrica* (L.) Beauv.	Blady grass, kunai, Langalang	
	n	190. *Themeda australis* (R. Br.) Stapf	Kangaroo grass	
21. *Maydeae*—				
		191. *Zea mays* L.	Maize	

GENERAL STRUCTURE OF A GRASS





PISTIL & STAMENS



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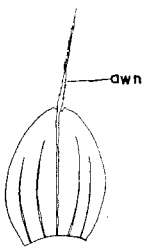
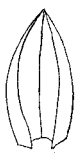


L.
LEMMA



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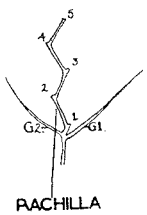

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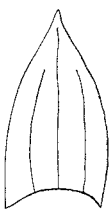
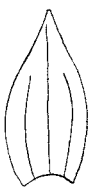


G 1.
LOWER GLUME



G 2.
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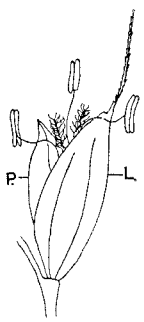

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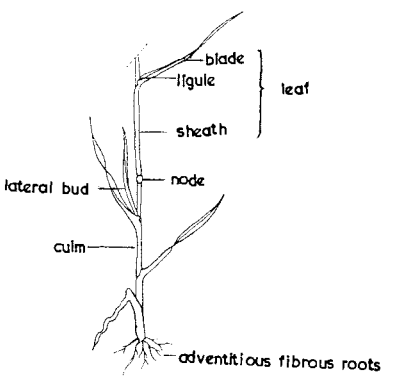
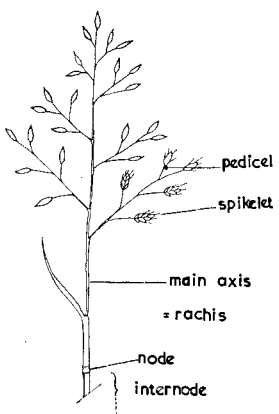
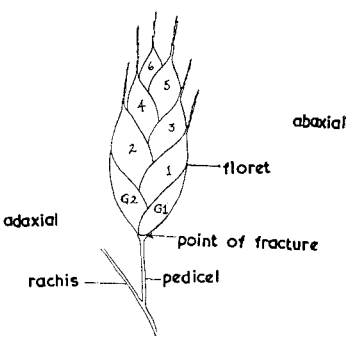


VEGETATIVE PARTS



INFLORESCENCE

WHOLE PLANT



SPIKELET

FIG. 1

A SPIKELET of DEYEUXIA ACCEDENS J.W. Vickery.
"Bent grass"

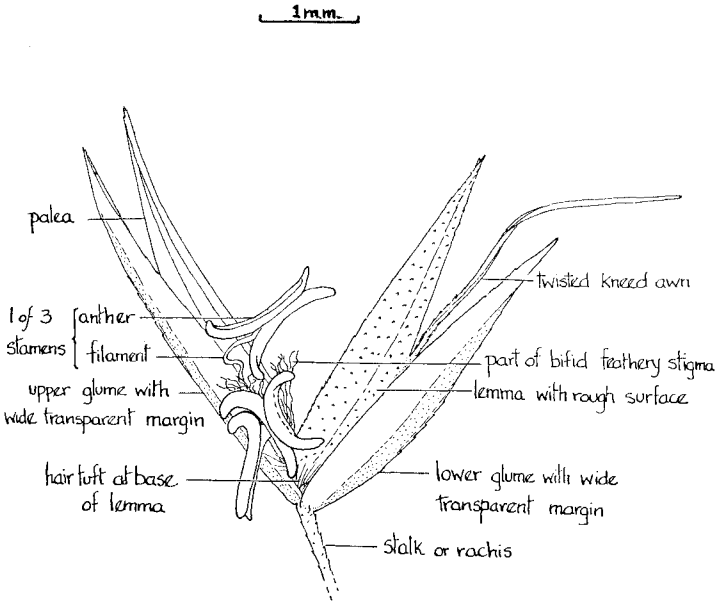


FIG. 2

GRAMINEAE—KEY

The species within each genus (where more than 1) may be keyed out starting from the couplet number as follows:—

Agropyron	96	*Danthonia*	172	*Lolium*	92	*Setaria*	80
Agrostis	101	*Deyeuxia*	112	*Microlaena*	139	*Sporobolus*	133
Aira	146	*Dichelachne*	100	*Paspalum* spp. key out at 9 and 17		*Stipa*	126
Alopecurus	85	*Eragrostis*	148			*Tetrarrhena*	137
Amphibromus	192	*Festuca*	168			*Vulpia*	158
Avena	142	*Glyceria*	160	*Pennisetum*	81	*Zoisia*	79
Briza	157	*Hierochloë*	140	*Phalaris*	134		
Bromus	161	*Hordeum*	88	*Poa*	149		
Cynosurus	87	*Koeleria*	141	*Polypogon*	83		

GRAMINEAE—KEY TO THE SPECIES IN TASMANIA

1. (*a*) Cultivated cereal up to 15 feet (5 m) high, upright plant with very broad leaves; spikelets of 2 sorts, the male bearing anthers in *large terminal panicles*, and the female spikelets borne in an *axillary cob* about halfway down culm, enclosed in broad leafy bracts; each ovary with a single very long style, the styles from each cob forming a tassel up to 15 cm long ..... *Zea mais*

   (*b*) Stout rhizomic perennial creeping widely over coastal sand dunes; inflorescences of 2 sorts, the male composed of sessile spikelets in a loose terminal head, the female inflorescence a *porcupine-like head* about 22 cm wide composed of solitary spikelets each at the base of a long awn-like rachis; plant silvery hairy ..... *Spinifex hirsutus*

   (*c*) Coarse rooted, densely tufted, wiry perennial; leaf blades bristle-like, stiff and hard; spikelets 1 flowered, narrow, borne on erect very slender 1-sided spikes 3-8 cm long; lemma short-awned at the tip, ovary with single stigma; moors or heath; rare ..... *Nardus stricta*

   (*d*) Habit and inflorescene not as above, ovary always with 2 styles 2

2. (*a*) Broad leaved perennial reeds with culms 5 feet (1.5 m) high or more; panicles *plume-like,* 15-40 cm long, dense, upright, at least the female inflorescences silky hairy 3
   (*b*) Much smaller grasses, or if tall then without a plume-like inflorescence 4
3. (*a*) Flowering stems *leafless,* the leaves crowded at the base of the stems forming a huge tussock, blade margins knife-sharp; male and female inflorescences *on separate plants* (dioecious); *lemmas awned,* hairless in male spikelets .... *Cortaderia selloana*
   (*b*) Flowering stems *leafy,* spikelets hermaphrodite, rachilla segments bearing *long silky hairs*; lemmas smooth *without awns* .... *Phragmites communis*
4. (*a*) Low, spreading grasses in coastal and saline areas; leaves conspicuously 2-ranked (distichous) with inrolled, often *needle-like blades sharply pointed at the tips* 5
   (*b*) Blades not sharply pointed at the tips 6
5. (*a*) Spikelets *2-5 mm long, nearly black* in colour, 1-flowered, in narrow spike-like *racemes, shed with the single glume*; leaf-blades faintly ribbed with smooth veins on upper surface .... *Zoisia* spp. 79
   (*b*) Spikelets *about 2 mm long, dark grey in colour,* 1-flowered in a short spike-like *panicle*; *shed leaving the* 2 *glumes behind;* leaf-blades coarsely and deeply ribbed on upper surface, the veins with knobby bumps (tuberculate-papillose), and sometimes with scattered hairs on lower surface .... *Sporobolus virginicus*
   (*c*) Spikelets *10-16 mm* long and very flattened, *pale straw coloured,* unisexual (plant dioecious), *many-flowered* in a short *panicle* or *raceme* (± 2.5 cm long); glumes 2, not falling with florets; leaf-blades coarsely and deeply ribbed above but with very tiny bumps on the veins .... *Distichlis distichophylla*
6. (*a*) Spikelet with 1-several *conspicuous bristles* at its base either arranged in an enveloping involucre or singly as modified branches of the panicle 7
   (*b*) Spikelet *without* bristles at its base, but sometimes coarsely hairy on the glumes or stalk 8
7. (*a*) Bristles smooth *long fine hairs,* as long as or slightly longer than the spikelets and mostly at base of the racemes; inflorescence a panicle composed of short, densely packed 1-sided racemes along a main axis; stout annuals up to 1.5 m tall; ligule absent; lemma awned (awn 5-10 mm long) .... *Echinochloa crus-galli*
   (The variety *frumentacea* is a very stout broad-leaved (1-2 cm wide) plant with denser racemes, more turgid spikelets and awnless lemmas.)
   (*b*) Bristles *rough stout* hairs, several to each fertile spikelet, and much longer than spikelet, *persisting* on the axis of the *spike-like* inflorescence after spikelet falls; lemma often transversely wrinkled .... *Setaria* spp. 80
   (*c*) Bristles *rough fine* hairs arranged in an involucre and *falling attached* at base of spikelets .... *Pennisetum* spp. 81
   (Inflorescence of *P. clandestinum* reduced to a cluster of 1-4 subsessile spikelets ± hidden in the uppermost leaf sheath.)
8. (*a*) Inflorescence *like a wind-mill,* with 2 to several spikes or spike-like racemes radiating *from the top of the culm,* the spikelets arranged on *one* side of the branches (secund) 9
   (*b*) Infloresence not like a wind-mill; (if the inflorescence branches secund then the branches *scattered along* the main axis) 10
9. (*a*) Racemes (partial inflorescences) 2; spikelet flattened *dorsally* (from back to front and lemma has 2 keels), ligule *membranous*; plant with long rhizomes and stolons .... *Paspalum distichum*
   (*b*) Racemes 3 or more; spikelet flattened laterally (from side to side and lemma has 1 keel); ligule a *dense row of short hairs* .... *Cynodon dactylon*
10. (*a*) *Glumes falling with the florets*; spikelet with only 1 grain-producing hermaphrodite floret (a second lower floret may be male or abortive, often reduced to an extra empty lemma) 11
    (*b*) *Glumes remaining on the plant* when the florets have fallen; spikelet with 1 to many grain-producing hermaphrodite florets 21
11. (*a*) Spikelet *dorsally compressed* 12
    (*b*) Spikelet *laterally compressed* 19
12. (*a*) Fertile lemma and palea colourless and transparent (hyaline), *thinner* than the glumes 13
    (*b*) Fertile lemma and palea *firmer* than the glumes 15

13. (*a*) Fertile lemma *awned*; spikelets in aggregates of 7-9, each aggregate subtended by a *sheathing bract* or spathe, and composed of 4-6 male spikelets in a whorl surrounding an inner group of 2 stalked male spikelets and 1 sessile bisexual spikelet; inflorescence an interrupted, leafy, *nodding panicle* ..... *Themeda australis*
(*b*) Fertile lemma *awnless*; inflorescence dense and spike-like, spikelets in pairs 14
14. (*a*) Inflorescence a *dense fluffy narrow panicle* with abundant white silky hairs; spikelet pairs unequally stalked; glumes never hooked; plants of sandy or dryish ground ..... *Imperata cylindrica*
(*b*) Inflorescence a *rigid rather brittle 4-rowed spike* with spikelet pairs apparently stalkless; spikelets green and hairless; upper glume curved or sharply *hooked at tip*; plants of damp ground near water ..... *Hemarthria uncinata*
15. (*a*) Inflorescence a panicle of *slender* 1-sided *subdigitate racemes* (mostly at top of culm but 1 or 2 racemes lower down culm); spikelets hairless or only minutely hairy; fertile lemma with flat, thin transparent margins ..... *Digitaria sanguinalis*
(*b*) Panicle not *subdigitate*, a loose panicle or else racemes scattered up culm; fertile lemma with thick inrolled margins 16
16. (*a*) Glumes pointed above and with *a few bristly hairs*; lemma with long awn ..... *Echinochloa crus-galli*
(*b*) Glumes and lemmas *awnless* 17
17. (*a*) Lower glume *absent*, or *minute* and rudimentary; spikelets on lower surface of flattened rachis-branch which is long narrow and hairless; racemes 3-5 scattered along main axis ..... *Paspalum dilatatum*
(*b*) Lower glume *present*, at least 1/3 length of spikelet 18
18. (*a*) Inflorescence a *nodding rather compact panicle* 10-30 cm long; spikelets 4.5-5 mm long; stout hairy annual plant up to 100 cm high ..... *Panicum miliaceum*
(*b*) Inflorescence up to 13 cm long, composed of *several short loose erect racemes* which end in a naked bristle point, spikelets 2.0-3.0 mm long; clumped perennial up to 30 cm high (very occasional introduction) ..... *Paspalidium gracile*
19. (*a*) Glumes *awnless* 20
(*b*) Glumes ending in *conspicuous fine awns* ..... *Polypogon* spp. 83
20. (*a*) Panicle *pyramidal*, ± *loose*, pinkish; whole plant downy; glumes subequal; *spikelet 2-flowered*, the upper floret male and awned, the lower floret bisexual and awnless ..... *Holcus lanatus*
(*b*) Panicle cylindroid and dense, softly hairy; *spikelet 1-flowered*, lemma awned ..... *Alopecurus* spp. 85
21. (*a*) Spikelets *sessile* or with minute stalks less than 0.5 mm long, arranged on *one or opposite* sides of the axes 22
(*b*) Spikelets *stalked* on the branches of loose or spike-like *panicles* (rarely racemes) *OR* if quite sessile then arranged *all round* the main axis 32
22. (*a*) Spikelets in one or more rows along *one* side of the axis only 23
(*b*) Spikelets in two rows on *opposite* sides of the axis 25
23. (*a*) Spikelet *1-flowered*, inflorescence a *solitary flat fleshy spike* ..... *Stenotaphrum secundatum*
(*b*) Spikelet *with 2 or more florets*, inflorescence a raceme or a spike-like panicle but *not a spike* 24
24. (*a*) Inflorescence a *spike-like panicle*; spikelets with or without awns and of *2 sorts*, fertile ones with 2-4 plump lemmas concealed behind sterile spikelets with several narrow empty bracts; annual or perennial 5-100 cm high ..... *Cynosurus* spp. 87
(*b*) Inflorescence a solitary *raceme*; spikelets all alike with more than 3 florets per spikelet; annual 2-30 cm high ..... *Catapodium rigidum*
25. (*a*) Spikelets solitary at each joint of spike or raceme 26
(*b*) Spikelets in 3's at each joint of inflorescence, the lateral two spikelets usually reduced or neuter, each spikelet with 1 (or rarely 2) floret; annuals ..... *Hordeum* spp. 88
26. (*a*) Spikelets 1-flowered, *sunk in hollows* along the fragile rachis 27
(*b*) Spikelets 2- to many-flowered, *not sunk in hollows* 28
27. (*a*) Spikelet with *single glume* (terminal spikelet may have 2 glumes); spikes straight or slightly curved; anthers 2-3 mm long ..... *Monerma cylindrica*
(*b*) Spikelet with *2 glumes*; spikes *very curved* even as much as a half-circle; anthers less than 1 mm long ..... *Parapholis incurva*
28. (*a*) Spikelets on *very short stalks* (0.5-2.0 mm), 2-4 in a short spike-like raceme; lemma 7-nerved, long awned ..... *Brachypodium distachyum*

	(*b*) Spikelets quite *sessile*; if long awned then lemma 5-nerved	29
29.	(*a*) Spikelets flattened with keels (edges of spikelet) fitting into depressions along rachis; glume single and abaxial except for topmost spikelet which has 2 glumes	*Lolium* spp. 92
	(*b*) Spikelets flattened with their flat sides pressing against rachis; glumes 2	30
30.	(*a*) Perennials often with rhizomes; auricles well developed and often *caliper-like* round culm; spikes flattened; grain remaining enclosed in lemma and palea	*Agropyron* spp. 96
	(*b*) Annuals; spikes ± *cylindrical*; grain falling free from enveloping lemma and palea; cultivated cereals	31
31.	(*a*) Spikelet 2-flowered; glumes very *narrow* and strap-shaped; 1-nerved; lemma *narrow*, long awned, stiffly hairy on keel	*Secale cereale*
	(*b*) Spikelet 2-5-flowered; glumes *broad*, 5-7 nerved; lemma *broad*, may be awned, rough along keel	*Triticum aestivum*
32.	(*a*) Spikelets all *sessile*	33
	(*b*) Spikelets *stalked*	34
33.	(*a*) Spikelets in 3's on opposite sides of flattened rachis; spikelets *1-flowered*; glumes *bristle-like* and long awned	*Hordeum* spp. 88
	(*b*) Spikelets single at each rachis joint; spikelets *2-flowered*; glumes *very narrow* and strap-shaped, not awned	*Secale cereale*
34.	(*a*) Panicle *very softly hairy, globose* to oblong-cylindrical; glumes *feathery-hairy*, each tapering into a fine bristle, lemma with bristle-like apical teeth and a long fine dark dorsal awn 8-18 mm long; annual of sandy places	*Lagurus ovatus*
	(*b*) Panicle not as above; glumes *hairless* or only *shortly hairy*	35
35.	(*a*) Spikelets of *one sort* only	36
	(*b*) Spikelets of *2 sorts*—fertile ones hidden behind sterile ones	*Cynosurus* spp. 87
36.	(*a*) Spikelet with *1 bisexual fertile floret* (sometimes a male or neuter floret above, sometimes 1-2 male or neuter lemmas below)	37
	(*b*) Spikelet with *2-several bisexual fertile florets*	58
37.	(*a*) Lemma tip *divided into 2 pairs of teeth* each tooth ending in a fine awn 7-8 mm long; terminal awn between pairs of teeth almost straight 15-25 mm long	*Pentapogon quadrifidus*
	(*b*) Lemma tip *undivided* or slightly bilobed, awnless or with a single awn	38
38.	(*a*) Glumes *2*	39
	(*b*) Glumes *apparently 4*, the two inner being male or empty lemmas subtending a central bisexual fertile floret and appearing like glumes, the real glumes often minute and inconspicuous	53
39.	(*a*) Spikelet with *single bisexual* lemma	40
	(*b*) Spikelet with *2 or 3 lemmas*	52
40.	(*a*) Lemma bearing an *awn* (may be minute in *Deyeuxia*)	41
	(*b*) Lemma *never* awned (glumes may end in awn tip)	49
41.	(*a*) Awn *dorsal* (occasionally subterminal when the awn arises from between 2 distinct lobes at tip of lemma); *glumes 1-nerved*; callus of lemma blunt	42
	(*b*) Awn *terminal*, very long compared with lemma; glumes *3-7 nerved* at least below	47
42.	(*a*) Awn *subterminal*, lemma 2-lobed at tip (minutely so in *Echinopogon*)	43
	(*b*) Awn *dorsal* (on back of lemma), lemma smooth-tipped or slightly toothed but not lobed at tip	44
43.	(*a*) Panicle soft and *plume-like*; awn very slender, wavy	*Dichelachne* spp. 100
	(*b*) Panicle a very dense rounded spiky head; awn rigid and erect	*Echinopogon ovatus*
44.	(*a*) Glumes *swollen, hardened and shining near base* (like a louse egg); plant 10-50 cm high	*Gastridium ventricosum*
	(*b*) Glumes *not swollen* below	45
45.	(*a*) Awn *more than 10 mm* long, wavy; inflorescence a soft plume-like panicle	*Dichelachne* spp. 100
	(*b*) Awn *less than 10 mm* long, *straight* or *kneed*	46
46.	(*a*) Panicle *spreading* with very fine branches; lemma membranous and *thinner than the glumes*, usually very *blunt* at tip when flattened out	*Agrostis* spp. 101
	(*b*) Panicle usually *dense and spike-like*; lemma papery or hardened and *thicker than the glumes*, with more or less *pointed* tip	*Deyeuxia* spp. 112
47.	(*a*) Awn persistent, more than 2 cm long	48
	(*b*) Awn *deciduous*, less than 1 cm long; lemma *ovoid*, retained round grain and becoming hardened and shiny, callus blunt and without a hair tuft; common perennial with fine cane-like stems up to 4 feet (1.2 m) tall usually found on waste ground	*Oryzopsis miliacea*

48. (*a*) Lemma *cigar-shaped*, the *callus sharp-pointed* and with a hairy covering less than half as long as lemma; awn often massive with a twisted column and long fine bristle, kneed at least when dry; inflorescence not deciduous; distributed along dry roadsides and in the lighter parts of dry woodland .... *Stipa* spp. 126
(*b*) Lemma *upside-down-egg-shaped*, broad and flat at top, the callus blunt and with a hair tuft at least half as long as lemma; *inflorescence* deciduous and wind distributed: easily confused with tussock grass in the vegetative state; confined in Tasmania to South Arm and adjacent areas in the S.E. of the State .... *Nassella trichotoma*

49. (*a*) Glumes *awned* and with stout hairs springing out from keel, *less than 5 mm* long; inflorescence a dense cylindrical spike-like panicle 6-15 (rarely up to 30) cm long and 6-10 mm wide. .... *Phleum pratense*
(*b*) Glumes *without awns* 50

50. (*a*) Glumes *more than 10 mm* long; inflorescence a dense spike-like panicle narrowly oblong and tapering upwards, pale coloured, 7-22 cm long, 1-2.5 cm wide; a robust rhizomic grass used for binding coastal sand-dunes .... *Ammophila arenaria*
(*b*) Glumes *less than 5 mm* long 51

51. (*a*) Lemma *hyaline* (colourless and transparent), thinner and shorter than glumes; grain *enclosed* in lemma and palea .... *Agrostis* spp. 102
(*b*) Lemma of similar texture to and as long as or longer than glumes; grain naked and free from lemma and palea .... *Sporobolus* spp. 133

52. (*a*) Glume *winged* down keel; spikelet with 2 (or 1) reduced lemmas not more than half length of upper fertile lemma, awnless .... *Phalaris* spp. 134
(*b*) Glume keeled but *not winged*; spikelet with a lower male floret and an upper bisexual floret, male floret with long twisted kneed awn 10-17 mm long, and bisexual floret with or without a short fine dorsal bristle or awn .... *Arrhenatherum elatius*
(The variety *bulbosum* has bulbous or pear-shaped basal internodes up to 1 cm across, which are very effective means of vegetative propagation.)

53. (*a*) Spikelets *few*, less than 20; outer glumes *very small* and in some cases lower down axis than rest of spikelet 54
(*b*) Spikelets *many* more than 20; outer glumes as long as, or longer than, or nearly equal in length to rest of spikelet 55

54. (*a*) Lemmas *awnless* (may be sharply pointed); stamens 4; inflorescence a short terminal raceme; more or less frail-stemmed scrambling grasses with rough short leaf blades .... *Tetrarrhena* spp. 137
(*b*) Sterile lemmas with unequal slender *scabrid awns*; stamens 4 or 2; inflorescence a loose drooping raceme or a slender sub-racemous panicle; tufty rhizomatous grasses in undisturbed damp situations .... *Microlaena* spp. 139

55. (*a*) Inflorescence a *dense, spike-like erect panicle*; glumes or at least the upper one *longer* than the inner sterile lemmas 56
(*b*) Inflorescence a *loose open* panicle (rarely raceme); glumes *shorter than or not exceeding* the inner sterile lemmas 57

56. (*a*) Glumes *equal*, very flattened, strongly keeled and often winged; non aromatic; sterile lemmas much smaller than fertile lemma *Phalaris* spp. 134
(*b*) Glumes *very unequal*, not winged; aromatic coumarin-scented grass; sterile lemmas hairy and *longer* than fertile lemma, awned, the awn on lower lemma 2-4 mm long and straight, that on 2nd lemma 6-9 mm long and kneed .... *Anthoxanthum odoratum*

57. (*a*) First and second lemmas *enclosing male florets*; palea 1-nerved; aromatic grasses of mountain areas .... *Hierochloë* spp. 140
(*b*) First and second lemmas empty; palea 2-nerved; non-aromatic grass (introduced to South Arm) .... *Ehrharta calycina*

58. (*a*) Spikelets with *2 fertile florets* (rarely 3 in *Avena* and *Trisetum* both of which have kneed dorsal awns attached to upper or central third of lemma) 59
(*b*) Spikelets with *3 or more* fertile florets 63

59. (*a*) Lemma awnless 60
(*b*) Lemma conspicuously *awned* 61

60. (*a*) Ligule *membranous* .... *Koeleria* spp. 141
(*b*) Ligule a *ring of hairs* .... *Sporobolus* spp. 133

61. (*a*) Spikelets *more than 1 cm* long; awns more than 2 cm long; tall annuals with lax panicles .... *Avena* spp. 142
(*b*) Spikelets *less than 7 mm* long 62

62. (*a*) Spikelets *less than 4 mm* long; lemmas sharply *pointed*; small annual grasses up to 40 cm high ..... *Aira* spp. 146
(*b*) Spikelets *4-6 mm* long; lemmas *blunt*; densely tufted perennial to 120 cm high with loose, open panicles ..... *Deschampsia caespitosa*
(*c*) Spikelets *4-6 mm* long; lemmas *acuminate*; alpine perennial with dense spike-like panicles ..... *Trisetum spicatum*

63. (*a*) Lemma with *smooth* tip, not toothed or lobed, either awnless or shortly awned (long awned in *Vulpia* and *Agropyron scabrum*) 64
(*b*) Lemma *3-toothed* at tip or with 2 apical teeth or lobes with an awn arising from between them 74

64. (*a*) Lemma *keeled all down* its back, more or less laterally compressed 65
(*b*) Lemma *rounded* on the back although it may be keeled in the *upper part* only 67
(*c*) Lemma keeled *below* and ± rounded above; spikelets pale yellow, up to 12 mm long in a rigidly erect dense spike-like panicle; leaf-blades very stiff and needle-like, sharply pointed, up to 45 cm long; perennial growing up through beach sands ..... *Festuca littoralis*

65. (*a*) Ligule a *ring of hairs*, spikelets lead-coloured ..... *Eragrostis* spp. 148
(*b*) Ligule membranous 66

66. (*a*) Inflorescence a coarse, knobby, *one-sided panicle* with rough spikelets in several clusters on slender stalks; lemmas minutely or very shortly awned; ligule 2-12 mm long; a dense tufted glabrous (rarely hairy) rather coarse perennial with very broad, sharply folded leaves up to 14 mm wide ..... *Dactylis glomerata*
(*b*) Inflorescence *not one-sided*; lemma *blunt* with colourless transparent margins and tip, *awnless*, often with *long cottony hairs* towards base; ligule less than 5 mm long (except *Poa trivialis* which has a ligule 4-10 mm long) ..... *Poa* spp. 149

67. (*a*) Spikelets erect *or*, if nodding, then awned or with narrow lemmas 68
(*b*) Spikelets *nodding*, plump, in delicate panicles, *awnless*; glumes and lemmas hooded at the apex, very broad; highly decorative annuals ..... *Briza* spp. 157

68. (*a*) Panicle *stiff, upright, one-sided*; spikelet stalks short and thick; lemmas blunt-tipped, awnless; small annual up to 30 cm high ..... *Catapodium rigidum*
(*b*) Panicle *rather lax* with more or less slender spikelet stalks, if one-sided then lemmas long-awned 69

69. (*a*) Glumes *nearly equal*, panicle *regular*; anthers 3 70
(*b*) Glumes *very unequal*, panicle *one-sided*, anther 1, small annuals up to 60 cm high ..... *Vulpia* spp. 158

70. (*a*) Lemma *blunt* tipped, *smooth*, awnless; glumes *blunt* 71
(*b*) Lemma *acute* or acuminate (if not very acute then very scabrid), sometimes awned; glumes *acute* (sharply pointed) 72

71. (*a*) Wet salt marsh plant with *stiff inrolling* leaf-blades; leaf sheath margins *free*; lemma with 5 faint nerves ..... *Puccinellia stricta*
(*b*) Freshwater swamp or mud plants with *lax flat* leaf-blades; leaf sheath margins *fused*; lemma with 5-9 prominent nerves ..... *Glyceria* spp. 160

72. (*a*) Ovary with terminal *hairy appendage* and *lateral* styles; leaf sheaths without auricles; plants annual or biennial (except *Bromus unioloides* a perennial) ..... *Bromus* spp. 161
(*b*) Ovary *without* terminal appendage, styles *terminal*; auricles may be present; plants perennial 73

73. (*a*) Tall coarse forest grass 1.5-3 m high in tall wet sclerophyll forest; lemmas slightly laterally compressed; hilum about 1/3 length of grain ..... *Dryopoa dives*
(*b*) Habit and habitat not as above; lemmas *circular in cross-section*; hilum a fine line as long as the grain ..... *Festuca* spp. 168

74. (*a*) Glumes *longer* than lowest lemma, often as long as whole spikelet; lemma 7-nerved or more 75
(*b*) Glumes *shorter* or no longer than lowest lemma 76

75. (*a*) Lemma *deeply 2-lobed* above, with *kneed awn* arising between lobes, more or less hairy (often densely) on the back ..... *Danthonia* spp. 172
(*b*) Lemma *shortly 3-toothed* at tip, awnless; spikelets plump, 6-12 mm long ..... *Sieglingia decumbens*

76. (*a*) Lemma *minutely 3-lobed* at tip, *awnless* ..... *Glyceria* spp. 160
(*b*) Lemma torn or *denticulate* at tip with at least 4 minute lobes or teeth, with *dorsal kneed awn* more than 1 cm long; spikelets with up to 7 florets in loose panicles ..... *Amphibromus* spp. 192

	(*c*) Lemma *not denticulate* (may be slightly bifid at tip); awns less than 1 cm, or if more than 1 cm then straight or curved and *not kneed*	77
77.	(*a*) Lemma *5-nerved* or more, with subterminal awn 2 mm or more long	78
	(*b*) Lemma *3-nerved,* if awned then awn less than 2 mm long	*Koeleria* spp. 141
78.	(*a*) Whole spikelets *less than 5-flowered*; rachilla joints with *long, soft hairs*; awns *bent* and up to 6 mm long	*Trisetum spicatum*
	(*b*) Whole spikelets *more than 5-flowered* (rarely less); rachilla *without* long soft hairs; awns straight or if curved then more than 6 mm long	*Bromus* spp. 161
79.	(*a*) Stems very short *usually less than 2.5 cm* high and not often exceeding 5 cm; spikelet 2-3 mm long; leaf-blades with *short* sharp point; anthers about 1 mm long; rare introduction in lawn grass in Hobart and St Helens areas	*Zoisia matrella*
	(*b*) Stems usually more than 5 cm long; spikelet 3.5-5 mm long; leaf-blades with a *long* sharp point, anthers 1.5-2 mm long; Bass Strait Islands	*Zoisia macrantha*
80.	(*a*) Panicle-bristles with barbs pointing forwards towards tips	*Setaria viridis*
	(*b*) Panicle-bristles with *reflexed* barbs (pointing away from tips)	*Setaria verticillata*
81.	(*a*) Inflorescences *almost completely hidden* within uppermost leaf-sheaths with only the stigmas projecting, reduced to 2-4 spikelets; a coarse matted perennial with *long creeping* rhizomes, stout profusely branched stolons and conspicuously 2-ranked leaves; leaf sheaths smooth or hairy; ligules densely ciliate	*Pennisetum clandestinum*
	(*b*) Inflorescence an obvious panicle	82
82.	(*a*) Panicle *narrow, cylindrical*; involucre bristles *about as long* as spikelet; styles more or less free	*Pennisetum macrourum*
	(*b*) Panicle *ovoid* (egg-shaped); involucre bristles *much longer* than spikelet; styles joined almost to tips; Bass Strait Islands	*Pennisetum villosum*
83.	(*a*) Glume awn *up to 2 mm* long; lemma awn up to 3 mm long; anthers devoid of pollen (male-sterile, intergeneric hybrid); perennial occurring in muddy ditches	*Polypogon littoralis*
	(*b*) Glume awn *6 mm* or more long; annual	84
84.	(*a*) Glumes *slightly* notched, *shortly hairy,* the hairs lying close to the glume surface; glume awn 4-7 mm long, yellowish-green, borne almost at the tip of the glume	*Polypogon monspeliensis*
	(*b*) Glumes *deeply divided* to about the middle into 2 lobes, covered in long hairs which are stiff and spreading at the base, glume awn about 4 mm long, pink or purplish, borne at the base of the glume notch; coastal grass	*Polypogon maritimus*
85.	(*a*) Keels of glumes *fringed with long hairs*; glume margins united *only near base*	86
	(*b*) Keels of glumes *minutely hairy*; glume margins united up to half their length; spikelets 4.5-7 mm long; annual of arable and wasteland	*Alopecurus myosuroides*
86.	(*a*) Culms *spreading* with short stolons rooting at the nodes; panicles *3-7 mm wide*; spikelets 2.5-3.5 mm long; anthers 1.5-2 mm long; occurring in wet open places	*Alopecurus geniculatus*
	(*b*) Culms *erect* 30-120 cm high, panicles 5-10 mm wide; spikelets 4-6 mm long; anthers 2-3.5 mm long; hedge row remnant of old pastures	*Alopecurus pratensis*
87.	(*a*) Compactly tufted rhizomatous *perennial* with unbranched culms; panicles *narrowly oblong,* 4-10 mm wide; fertile spikelets 3-6 mm long; lemma awn up to 1 mm long	*Cynosurus cristatus*
	(*b*) *Annual* often with branched culms; panicle *ovate to oblong,* very bristly, 10-20 mm wide; fertile spikelets 8-14 mm long; lemma awn 6-16 mm long	*Cynosurus echinatus*
88.	(*a*) Spike-axis *tough,* continuous and persistent; cultivated barleys	89
	(*b*) Spike-axis *fragile,* readily breaking up between the spikelet groups; wild grasses	90
89.	(*a*) Spikes with 6 or apparently 4 rows of fertile spikelets; each spikelet of triplet fertile and sessile	*Hordeum vulgare*
	(*b*) Spikes with 2 rows of fertile spikelets; spikelet triplet with two lateral stalked reduced spikelets and a median sessile fertile spikelet	*Hordeum distichon*
90.	(*a*) Glumes hairless	91

(*b*) Glumes of at least the central spikelet *expanded and hairy*, all 3 lemma awns of spikelet triplet *much longer* (up to 5 cm) than the 6 glume awns; lateral spikelet lemmas (even without the awns) *longer and wider* than central lemma ..... *Hordeum leporinum*

(The closely related Eurasian *H. murinum* L. (Wall Barley) differs from *H. leporinum* in having lateral spikelets *no longer or wider* than the central one.)

91. (*a*) Both glumes of lateral spikelets *bristle-like*, not expanded ..... *Hordeum hystrix*
(*b*) Glumes of lateral spikelets *dissimilar*, the one opposite the lemma bristle-like, the one opposite the palea *broadly-winged* on one side (obscured in dry specimens) ..... *Hordeum marinum*

92. (*a*) Glume as *long as* or *exceeding* the uppermost lemma 93
(*b*) Glume much *shorter* than the spikelet 95

93. (*a*) Lemmas *eggshaped to elliptic, swollen* about the grain ..... *Lolium temulentum*
(*b*) Lemmas more or less *lanceolate, never* swollen 94

94. (*a*) Glume *more than 1 cm* long *not quite as long* as spikelet; lemmas awnless; spikelet about 2 cm long and rigidly erect at maturity ..... *Lolium rigidum*
(*b*) Glume *less than 1 cm* long (more or less 7 mm), *longer than* the spikelet; uppermost lemma shortly awned; spikelet about 1.4 cm long ..... *Lolium loliaceum*

95. (*a*) Lemmas *awnless; perennial* with young leaf blades of vegetative shoots *folded* about the midrib ..... *Lolium perenne*
(*b*) Lemmas with fine straight *terminal awns* up to 1 cm long; annual or biennial with leaf blades *rolled* in the young shoots ..... *Lolium multiflorum*

(H 1 Rye-grass is a selection of Short Rotation Rye-grass = *Lolium perenne* x *Lolium multiflorum*. Tasmanian Ryegrass No. 1 is a selection of *Lolium perenne*.)

96. (*a*) Inflorescence *drooping and slender*; lemma awns *2.5-5 cm* long and *curving outwards* in mature inflorescence; 2-12 spikelets about 5 cm long (including awns) usually distant (standing apart) on the rachis; hairless to very hairy perennial up to 1 m high ..... *Agropyron scabrum*
(*b*) Inflorescence *erect* 97

97. (*a*) Inflorescence more or less *hairy*; plants tufted or with very short rhizomes 98
(*b*) Inflorescence *hairless*; plants with *long slender creeping rhizomes* 99

98. (*a*) Stems 30-60 cm high; leaf-blades *lax*; inflorescence up to 13 cm long with well spaced spikelets which become *reflexed* from main axis ..... *Agropyron pectinatum*
(*b*) Stems less than 30 cm high; leaf blades *rigid* not drooping; inflorescence 2.5-5 cm long, short and stout with crowded *erect* spikelets; high alpine ..... *Agropyron velutinum*

99. (*a*) Auricles *present*, caliper-like at base of smooth leaf blades (veins not prominent); upper surface of blade *hairless* or with *short scattered hairs*; spike *slender*, dull green, with a tough persistent rachis; glumes blunt or sharply pointed, *less than 2 mm* wide ..... *Agropyron repens*
(*b*) Auricles *absent*; leaf blades prominently veined and *densely and minutely hairy* on upper surface along the veins; spike *stout*, bluish-grey, with a fragile rachis readily breaking just above each spikelet; glumes blunt tipped, *2-4 mm* wide; sand-dune plant tolerating salt water ..... *Agropyron junceum*

100. The genus *Dichelachne* requires revision but one species is more or less distinct:—
(*a*) Panicle very *dense and spike-like*, pale coloured; glumes *equal* with long drawn out tips; lemma awns 1.5-5 cm long and distinctly lateral, flexuous without distinct column and bristle ..... *Dichelachne crinita*
(*b*) Panicle *loose* although somewhat contracted; glumes *unequal*; awns with distinct column and bristle—a group of species including:—
Dichelachne sciurea—robust plant with fairly dense inflorescences
Dichelachne rara—more slender plant with more spreading delicate inflorescences and fewer spikelets
Dichelachne spp.—2 or 3 as yet undifferentiated but superficially similar to previous 2 spp.
Previous specimens in this group have usually been placed with *D. sciurea*.

101. (*a*) Lemma *awnless,* or if present then minute and delicate 102
(*b*) Lemma *with awn,* awn, 1½-twice length of glumes 109

102. The key to species of *Agrostis* adapted from that of J. C. Willis (1962) and J. W. Vickery (1941) :—
(*a*) Panicle *diffuse* with long verticillate spreading branches, spikelets far apart on hair-like stalks; lemma and palea *more or less equal* in length; a weak grass very rough to the touch and growing in shady places .... *Agrostis rudis*
(*Agrostis aequata* Nees differs only in the smaller less acute or less scabrid glumes and is treated by J. H. Willis as a variant of *A. rudis.*)
(*b*) Panicle *erect,* not widely spreading, or if somewhat spreading then palea absent 103

103. (*a*) *Perennials* with culms 30 cm high or more, mostly with rhizomes and/or stolons; leaf blades *flat* never filiform; palea present or absent 104
(*b*) *Annuals* (or at most biennials) less than 30 cm high with mostly *inrolled or filiform* leaf blades; palea absent (mostly alpine tufted grasses) 107

104. (*a*) Palea *present,* shorter than lemma; panicle often open; plants with long thin rhizomes and/or stolons 105
(*b*) Palea *absent*; panicle loose and wide spreading; sometimes with a short horizontal rhizome; occurring in damp shady places .... *Agrostis hiemalis*

105. (*a*) Plant *without rhizomes,* spreading by stolons only; panicles *contracted* and *usually dense after flowering*; leaf usually bluish-green with a ligule *1-6 mm* long; flowering mid-January to March .... *Agrostis stolonifera*
(*b*) Plant with rhizomes; panicles remaining open, leaf bright or dull green; flowering November to March 106

106. (*a*) Panicle often with olive brown colour; leaf bright green; ligule *0.5-2 mm* long and *shorter than broad;* slender grass 10-70 cm high, flowering late November to March .... *Agrostis tenuis*
(*b*) Panicle often purplish; leaf dull green; ligule *1.5-6 mm* long and at least *as long as broad,* robust grass 30-120 cm high, flowering mid-December to March .... *Agrostis gigantea*

107. (*a*) Inflorescence a *spreading* panicle 108
(*b*) Inflorescence a *contracted* panicle with upright branches; blades almost flat or slightly rolled; ligule pointed above, 2-3 mm long *Agrostis muelleriana*

108. (*a*) Pyramid-shaped panicle carried *well beyond upper leaf sheath,* its branches short (1-3.5 mm towards base); anthers 0.3-0.5 mm; leaf blades thread-like bristles up to 11 mm long and 0.25-1 mm wide .... *Agrostis parviflora*
(*b*) Panicle lax, its lower branches *remaining enclosed in upper sheath* and almost erect; panicle branches *long and hair-like* .... *Agrostis australiensis*

109. (*a*) Lemma *with long hairs* on back 110
(*b*) Lemma *quite smooth* on back or only minutely rough 111

110. (*a*) Panicle *widely spreading* with *drooping branches*; spikelets 2-4 mm long, usually pale green; anthers less than 0.6 mm long .... *Agrostis avenacea*
(*b*) Panicle *not* widely spreading, its branches never drooping; spikelets 3.5-6 mm long, purplish with age; anthers 0.6-1.2 mm long .... *Agrostis aemula*

111. (*a*) Palea *present,* 2/3 length of lemma; leaf blades *flat,* 2-8 mm wide; *ligule 4-8 mm* long; rachilla *extending beyond floret* as a long-haired bristle 1-2 mm long; callus densely hairy; grass of sandy shore lines .... *Agrostis billardieri*
(The vars. *filifolia* and *robusta* are more typically inland grasses with narrower leaves 1-1.5 mm wide). The var. *filifolia* has a more slender, taller habit than the type, while var. *robusta* differs in its tall erect rigid habit up to 60 cm high.)
(*b*) Palea *absent*; leaf blade *thread-like*; ligule *2-3 mm* long; rachilla not extending beyond floret; callus without hairs; grass of damp, high situations .... *Agrostis venusta*

112. The key to species of *Deyeuxia* is adapted from that of J. W. Vickery (1940) and of J. C. Willis (1962)—
(*a*) Upper glume distinctly *shorter* than lemma 113
(*b*) Upper glume *longer* than lemma (only slightly longer in some cases) 114

113. (*a*) Panicle *2-9 cm long* with short, stiff branches; spikelets about 1.5 mm long; lemma *smooth*, about twice as long as glumes, bearing an awn 0.2-0.7 mm long; rachilla ending in a smooth or slightly hairy bristle ..... *Deyeuxia gunniana*
(*b*) Panicle *12-20 cm long*, loose and spreading with almost nodding branches; spikelets 1.5-2.5 mm long; lemma *distinctly rough, less than twice length* of glumes, bearing an awn 0.2-0.4 mm long; rachilla ending in a stiffly hairy bristle about 1 mm long, the hairs 0.2-1.2 mm long ..... *Deyeuxia parviseta*

114. (*a*) Awn *much longer* than lemma 115
(*b*) Awn *not longer* or only just longer than lemma, sometimes *minute* and shed early 122

115. (*a*) Awn arising near base of lemma *in the lower 1/3* of its length; inflorescence a dense spike-like panicle 116
(*b*) Awn arising in *middle 1/3* of lemma 118
(*c*) *Awn arising in upper 1/3* of lemma, 4-6 mm long, rather stiff, *reflexed*; panicle rather loose, sometimes spreading, 8-17 cm x 0.8-2 cm; alpine or subalpine ..... *Deyeuxia brachyathera*

116. (*a*) Lower glume *shorter* than the upper; leaf blade long and pointed, needle-like ..... *Deyeuxia monticola*
(*b*) Lower glume *longer* than the upper; leaf blade never needle-like 117

117. (*a*) Spikelets about *8 mm* long; lemma about *1/2 length of lower glume*, 4-5 mm long ..... *Deyeuxia lawrencei*
(*b*) Spikelets *3-6 mm* long; lemma at least 2/3 length of lower glume and *distinctly 4-toothed at the apex*, grass with very variable habit from slender to robust ..... *Deyeuxia quadriseta*

118. (*a*) Panicle loose, *spreading* at least when anthers mature; spikelets 4.5-5 mm long, borne *towards the ends* of the panicle branches; upper glume slightly *longer* than lower; awn 3-4 mm long; anthers about 2 mm long, maroon coloured with dark orange pollen; growing in sub-alpine woodland ..... *Deyeuxia accedens*
(*b*) Panicle *dense and spike-like*, or if somewhat loose then the spikelets on the lateral branches borne almost from the main axis up 119

119. (*a*) Spikelets usually *under* 5 mm long 120
(*b*) Spikelets usually *over* 5 mm long 121

120. (*a*) Panicle *very short*, less than 4 cm long, usually 1-2 cm long, *dense*; stems stiff and upright from the base; rachilla not usually extending beyond lemma ..... *Deyeuxia minor*
(*b*) Panicle *5-15 cm* long, *loose* although contracted; stems weak, curving from the base upwards; rachilla ending in an almost hairless bristle about 1 mm long ..... *Deyeuxia rodwayi*

121. (*a*) Rachilla ending in a *very short fine hairless bristle* 0.5 mm long; leaves more or less thick and rigid; alpine grass ..... *Deyeuxia carinata*
(*b*) Rachilla ending in a *long-haired bristle* up to 2 mm long; leaves rather thin and pointed; lowland or higher ground ..... *Deyeuxia densa*

122. (*a*) Awn arising from *middle 1/3* of lemma 123
(*b*) Awn arising from *within upper 1/3* of lemma 124

123. (*a*) Rachilla ending in an *almost hairless bristle* about 1 mm long; awn *curved*; plant slender, *stems curving* from the base; mountain-forest grass ..... *Deyeuxia rodwayi*
(*b*) Rachilla ending in a bristle *0.8 mm long with a tuft of short hairs* at the tip; awn *straight*; plant robust with *erect* stems ..... *Deyeuxia benthamiana*

124. (*a*) Lemma *surface smooth*; spikelet about 2.5 mm long; callus densely hairy; rachilla bristle hairy (hairs up to 1.4 mm long) ..... *Deyeuxia parviseta* var. *Boormani*
(*b*) Lemma *surface rough* 125

125. (*a*) Rachilla bristle *hairy*; spikelets 3-3.2 mm long; ligule *pubescent*, 2-3 mm long; anthers about 1.5 mm long ..... *Deyeuxia scaberula*
(*b*) Rachilla bristle *without hairs*; spikelets about 2.5 mm long, ligule *membranous* 2-3 mm long; anthers less than 0.5 mm ..... *Deyeuxia contracta*

126. (*a*) Leaf blades *needle-shaped, sharply pointed* at the tip, about 60 cm long, hairless; lemma 10-15 mm long, covered with whitish hairs about 2mm long; glumes 17-18 mm long; tussock-forming perennial growing in shingle at highwater mark ..... *Stipa teretifolia*
(*b*) Leaf blades *not needle shaped* or sharply pointed at tip 127

127. (*a*) Young leaf blade rolled, ⊙ *in section*, with *one margin* inside 128
(*b*) Young leaf blade rolled, ⊙⊙ *in section* with *two margins* rolled in 129

128. (*a*) Lemma awn *slender* (0.3 mm diameter), and shortly hairy (hairs less than 0.9 mm long), column 1.4-3 cm long, bristle 3-7 cm; lemma densely silky hairy with a *crowning tuft of hairs 2-5 mm* long at base of awn .... *Stipa stuposa*
(*b*) Lemma awn *stouter* (0.5 mm diameter), column more or less 3.5 cm long and shortly hairy (hairs up to 1.5 mm long), bristle about 4.5 cm long; lemma hairs *not* forming a crowning tuft .... *Stipa semibarbata*

129. (*a*) Awn gently *curving*, the column *grading imperceptibly* into the bristle, *plumose* with long silky hairs 2 mm long *extending about 2/3 way along the bristle*; upper surface of blade *densely* hairy with a felt of white hairs 0.2 mm long .... *Stipa mollis*
(*b*) Awn *kneed* with long, straight, more or less hairless, twisted column and once or twice bent bristle 130

130. (*a*) *Bristle* curved like a sickle when dry .... *Stipa variabilis*
(*b*) Bristle *straight* 131

131. (*a*) Lemma hairs *deep copper coloured*; lemma *spindle-shaped* with 2 minute lobes (0.2 mm long) at base of awn; mostly confined to strictly low-lying coastal areas .... *Stipa compacta*
(*b*) Lemma hairs yellowish, creamy or white, *without lobes*, lemma only slightly wider at the middle than at the ends; roadsides and/or open dry woodland 132

132. (*a*) Column of awn *stout* (0.5 mm thick); ligule a *fingernail-shaped membrane* 0.8 mm or more long; panicle usually 1-sided, well above the uppermost leaf sheath .... *Stipa pubescens*
(*b*) Column of awn *more slender* (0.25 mm thick); ligule a *minute truncate membrane* about 0.5 mm long; panicle usually drooping pyramid-shaped (in still air), basal side branches enclosed in uppermost sheath at start of flowering .... *Stipa nervosa*

133. (*a*) Coarse *densely tufted* grass; leaf blades *more than 8 cm long*, very tough but drooping; growing in sandy coastal areas .... *Sporobolus capensis*
(*b*) Low creeping grass, leaf blades markedly 2-ranked and *less than 5 cm long*; growing in saline mud of inland and coastal flats .... *Sporobolus virginicus*

134. (*a*) *Perennial* with rhizomes or bulbous basal stem swellings 135
(*b*) Tufted *annual* 136

135. (*a*) Glumes almost if not quite wingless; panicle lanceolate to oblong, lobed, 5-25 cm long, 1-4 cm wide; sterile lemmas 2, *more or less equal, silky-hairy*, up to 1/2 length of fertile lemma; marsh plant with stout reed-like culms growing by or in ponds and slow moving water, and spreading by creeping rhizomes .... *Phalaris arundinacea*
(*b*) Glumes with *broadly winged keels*; panicle *long-cylindrical* 8-15 cm long, 1-2 cm wide; sterile lemmas 2, *unequal*, the longer 1/3 length of fertile lemma, the shorter 1/3 length of the longer; anthers deep orange-yellow, 3 mm long; plant with short rhizomes and *bulb-like swellings* at the base of mature culms .... *Phalaris tuberosa*

136. (*a*) Panicle *shortly cylindrical to oblong*, 1-5.5 cm long, 0.8-1.6 cm wide; *sterile lemma 1*; anthers lemon-yellow, 1 mm long; annual (often confused with *P. tuberosa*, but may be most easily distinguished on the anther character and the number of sterile lemmas) .... *Phalaris minor*
(*b*) Panicle *ovate*, 1.5-6 cm long, 1.2-2.2 cm wide; *sterile lemmas 2*, 3-4.5 mm long .... *Phalaris canariensis*
(*Phalaris coerulescens* Desf. is a perennial species similar to *P. tuberosa*, and may be distinguished by the *purple colouration* on the spikelets and the *absence of both sterile florets*. Strain trials have been carried out at Cressy Agricultural Research farm.)

137. (*a*) True glumes *more or less 1 mm* long 138
(*b*) True glumes *2-3 mm* long; *upper sterile lemma 4 mm* long; scrambling *wiry* rough-stemmed grass with flat, rough leaves .... *Tetrarrhena juncea*

138. (*a*) Sterile lemmas *acuminate*, the *upper 7 mm* long (including minute awn 0.5 mm long); weak slender grass .... *Tetrarrhena acuminata*
(*b*) Sterile lemmas ± *mucronate*, the *upper 4 mm* long (including mucro 0.1 mm long if present); weak mat-forming grass .... *Tetrarrhena distichophylla*

(An apparently undescribed, small tufted alpine grass intermediate in character between *T. acuminata* and *T. distichophylla* occurs in short turf round small lakes in the vicinity of Hartz Mountain.)

139. (*a*) A tuft of hairs present on a naked length of rachilla between the true glumes and the lower sterile lemma; inflorescence a *nodding* raceme or slender panicle ..... *Microlaena stipoides*
(*b*) True glumes *close to and overlapping* the base of the sterile lemmas; spikelets about 10 mm long in ± erect narrow panicles 5-10 cm long ..... *Microlaena tasmanica*
(*c*) As for (*b*) but spikelets about 5 mm long; panicles 3-5 cm long ..... *Microlaena tasmanica* var. *sub-alpina*

140. (*a*) True (outer) glumes *5-7 mm long, as long as* the spikelet; lemma awned; culms about 90 cm tall ..... *Hierochloë redolens*
(*b*) True glumes *4 mm long,* nearly as long as the spikelet; lemmae awned; culms about 30 cm tall ..... *Hierochloë fraseri*
(*c*) True glumes *2.5 mm* long, *much shorter* than the spikelet; lemmae *without* awns; culms 60-90 cm tall ..... *Hierochloë rariflora*

141. (*a*) Small ± ascending *annual,* about 25 cm high ..... *Koeleria phleoides*
(*b*) Compactly tufted *perennial* 10-60 cm high, sometimes with slender wiry rhizomes ..... *Koeleria cristata*

142. (*a*) Lemma *practically hairless,* spikelets *not shattering* at maturity 143
(*b*) Lemma *copiously hairy,* spikelets *breaking up at* maturity above the glumes and/or between the lemmas 144

143. (*a*) Apex of lemma with *2 fine bristles* 3-9 mm long; dorsal awn 20-35 mm long ..... *Avena strigosa*
(*b*) Apex of lemma *slightly 2-toothed,* without bristles; awned or awnless. awn when present almost straight, only slightly twisted ..... *Avena sativa*

144. (*a*) Lemma apex with *2 fine bristles* 3-7 mm long ..... *Avena alba*
(*b*) Lemma apex *shortly toothed* 145

145. (*a*) Rounded scar *at base of each lemma,* 2-3 flowered, all lemmas with kneed awn, and densely bearded round the scar; spikelets 18-25 (rarely 30) mm long ..... *Avena fatua*
(*b*) Scar at base of *lowest lemma only,* 2-3 flowered, 3rd lemma awnless; spikelets 23-32 mm long ..... *Avena ludoviciana*
(Some confusion exists between this species (Winter Wild Oat) and the larger-spikeleted *A. sterilis* L. (Animated Oats) which has been found growing on the University of Tasmania campus!)

146. (*a*) Panicle dense, *spike-like,* lemmas *almost equalling* the glumes, *both awned* with the awn of the lower lemma shorter than that of the upper ..... *Aira praecox*
(*b*) Panicle *open,* lemmas shorter than the glumes 147

147. (*a*) Lower floret with *awn as long as that of upper floret* ..... *Aira caryophyllea*
(*b*) Lower floret *awnless* or nearly so ..... *Aira elegans*

148. (*a*) *Perennial* with fine drooping leaves; spikelets *up to 15-flowered,* about 2 mm wide; lemma pointed, 2 mm long ..... *Eragrostis brownii*
(*b*) *Smelly annual*; spikelets up to 30-flowered, about 3 mm wide; lemma blunt-tipped, about 2.5 mm long ..... *Eragrostis cilianensis*

149. (*a*) *Annual* or short lived perennial without stolons, rhizomes or bulbous basal swellings; inflorescence branches *smooth*; ligules 2-5 mm long; spikelets 3-10 mm long ..... *Poa annua*
(*b*) Perennials, tussocky or with stolons, rhizomes or bulbous swellings 150

150. (*a*) *Tufted bulbous-based* turf species 5-40 cm high; spikelets *variegated* with green, gold, purple and white ..... *Poa bulbosa*
(*b*) Plant *not* bulbous based 151

151. (*a*) Plant narrow leaved and tussocky, without stolons or rhizomes 152
(*b*) Plant spreading by rhizomes or stolons 153

152. (*a*) Coastal grass with involute leaves *30-90 cm* long and inflorescences *not carried above the leaves*; panicle more or less *dense,* 10-30 cm long, with *branches in whorls of 3-5* ..... *Poa poiformis*
(*b*) Plants not confined to coastal areas; inflorescences *carried well clear* of the leaves; panicle becoming *loose* with most branches *paired*; the common large bulky tussock of lowlands and uplands ..... *Poa labillardieri*
(*P. labillardieri* has been lumped with at least 3 species including a commonly viviparous small alpine under the epithet *Poa australis* agg.; the whole tussock grass taxonomy awaits critical elucidation.)

153. (*a*) *Weak slender* grass of damp shaded places, with variably stoloniferous culms; blades *less than 1 mm* wide, smooth, inrolled almost hairlike; spikelets 2-4 mm long with 2-4 (rarely 5) florets — *Poa tenera*
(*b*) Plants not so, with ± flat leaf blades 154

154. (*a*) Plants with *long or short rhizomes*; ligules not more than 3 mm long 155
(*b*) Plants 20-100 cm high with *creeping leafy stolons*; ligules pointed, *4-10 mm* long; blades abruptly and sharply pointed, 3-20 cm long, 1.5-6 mm wide, an occasional relic of old pastures .... — *Poa trivialis*

155. (*a*) *Alpine* plant 30-45 cm high with broad *plump spikelets*, the glumes 4-5 mm long; leaf blades almost as long as the culm, ligule 2-3 mm long .... — *Poa saxicola*
(*b*) *Lowland* plant with *flattened* spikelets, spreading by long creeping rhizomes 156

156. (*a*) Leaf blades up to *30 cm* long, not rigid; culms *circular* in section; panicle branches *rough with minute hooks*; very variable with creeping *slender* rhizomes .... — *Poa pratensis*
(*b*) Leaf blades *2-12 cm* long, rigid; culms *flattened* in section; stiff perennial spreading by *wiry* rhizomes .... — *Poa compressa*

157. (*a*) Spikelets 7-20 flowered, *14-25 mm long* and *8-15 mm wide, few* in number; annual .... — *Briza maxima*
(*b*) Spikelets 4-12 flowered, *3-7 mm long and wide, many* per inflorescence .... — *Briza minor*
(*Briza media* is a European *rhizomatous perennial* species not so far recorded for Tasmania.)

158. (*a*) Lower glume *0·5-2 mm* long, upper glume 3-7 mm long; panicle base ± enclosed in upper leaf sheath 159
(*b*) Lower glume *2-5 mm* long, *at least half the length of the upper glume*; panicle carried well beyond uppermost leaf sheath .... — *Vulpia bromoides*

159. (*a*) *Apical* third of the lemma margin (at least the uppermost) with *parallel hairs* .... — *Vulpia megalura*
(*b*) Lemma margins *hairless* .... — *Vulpia myuros*

160. (*a*) Plants reed-like with *stout robust culms* 1-2 m high; leaf-blades broad (7-20 mm) *spikelets very numerous* (more than 100 per panicle), oblong, 5-10 mm long with 4-8 florets; lemmas *very blunt, 3-4 mm* long .... — *Glyceria maxima*
(*b*) Plants with *slender rather weak culms* 1/2-1 m high; leaf blades narrow (3-4 mm) and pointed; spikelets *few*, linear, *10-25 mm* long with 6-20 florets; lemmas *pointed* 6-10 mm long .... — *Glyceria australis*
(*c*) Plants usually loosely tufted with *erect, ascending, or prostrate* culms 10-45 cm high; leaf blades 1.5-8 mm wide; spikelets few, *13-25 mm* long with 8-15 florets; *lemmas 3-toothed or 3-lobed* at tip .... — *Glyceria declinata*

161. (*a*) Lower glume with *1 or 3 nerves*, annuals with ultimately *divergent* florets 162
(*b*) Lower glume with *5 or 7 nerves*, annuals or perennials with *contracted* florets 164

162. (*a*) Panicle *very loose* or spreading, branches (lower ones at least) longer than 2 cm 163
(*b*) Panicle *dense* and usually purple tinted, brush-like, the branches rarely longer than 2 cm; spikelets including awns 3.5-6 cm .... — *Bromus madritensis*

163. (*a*) Spikelets including awns *7-9 cm* long; awns 3.5-6.0 cm long .... — *Bromus diandrus*
(*b*) Spikelets including awns 2.5-6 cm long; awns 1-3 cm long .... — *Bromus sterilis*

164. (*a*) Panicle *open* and spreading; lemma sharply keeled and *strongly flattened*; awn *much shorter* than lemma; annual to perennial 165
(*b*) Panicle *dense*; lemma *rounded on back*; awn *as long as or longer* than lemma; downy annual 166

165. (*a*) Spikelets *covered in fine appressed hairs*, up to *5 mm wide*; awns 5-7 mm long; panicle *erect* .... — *Bromus cebadilla*
(*b*) Spikelets *hairless* or minutely rough, *5-10 mm wide*; awns 4 mm or less; panicle *drooping* at maturity .... — *Bromus unioloides*

166. (*a*) Spikelet *more than 2 cm* long; glumes acuminate; awns bent, more than 1 cm long, *spreading outwards* and curling round spikelets in old age, inserted 4-5 mm below notched lemma tip .... — *Bromus macrostachys*
(*b*) Spikelets *less than 2 cm* long; glumes broadly acute to blunt; awns *erect*, less than 1 cm long 167

167. (*a*) Lemmas *8-11 mm* long, mostly *hairy* .... — *Bromus mollis*
(*b*) Lemmas *6.5-8 mm* long, *hairless* .... — *Bromus thominii*

168. (*a*) *Flat-leaved,* robust perennials with blades 3-20 mm wide 169
(*b*) *Rolled-leaved,* tufted perennials with blades about 1 mm wide 171

169. (*a*) Callus bearing *a tuft of hairs*; leaf blades *finely* ribbed (6-7 ribs per mm), more or less scabrid, seldom more than 15 cm long; spikelets 9-18 mm long; grass growing in open damp woodland with *very loose somewhat nodding panicle* about 30 cm long carried high above the foliage .... *Festuca hookeriana*
(*b*) Callus *hairless,* panicle *erect or slightly contracted* 170

170. (*a*) Leaf blades *almost smooth,* usually *more than 15 cm* long; grain *tightly enclosed* by the hardened lemma and palea .... *Festuca arundinacea*
(*b*) Leaf blades *roughly hairy* on top surface, *up to 8 cm* long; grain *free* from lemma and palea .... *Festuca plebeia*

171. (*a*) Leaf blades *rough* to touch; panicle bluish-green; lemma 6-8 mm long; anthers *4-5 mm*; sub-alpine and lower-growing grass up to 90 cm high .... *Festuca asperula*
(*b*) Leaf blades *bristle-like and smooth*; panicle green-purplish; lemma 4-6 mm; anthers *2-3 mm*; lawn grass rarely over 60 cm high, *with creeping rhizomes* .... *Festuca rubra*
(The var. *commutata* Gaud. (syn. var. *fallax* Hackel) is Chewing's Fescue which differs from the typical *F. rubra* in the absence of creeping rhizomes.)

172. The key to the species of *Danthonia* is adapted from that of J. W. Vickery (1965). N.B.: The body of the lemma is measured to include the callus and up to the bottom of the sinus between the 2 lemma lobes:—
(*a*) Lemma body with *upper row of hairs* plus *many hairs scattered over the back* 173
(*b*) Lemma body with *tufts, or rows of tufts* of hairs, and smooth between the tufts, OR tufts of hairs *reduced or absent* 179

173. (*a*) Lemma body *longer* than lateral lobes which may be broad, acute or blunt, *not* or minutely awned; plants 10-40 cm high; panicle short (1.5-4 cm long and 1.5-2.5 cm wide) 174
(*b*) Lemma body *shorter* than or *equal* to lateral lobes 175

174. (*a*) Glumes broad; lemma broad; palea broadest above mid-point (2.3 mm wide) and narrowing below; inflorescence almost egg-shaped .... *Danthonia carphoides*
(*b*) Glumes and lemma narrower (3 mm wide); palea broadest towards middle (1-1.5 mm) *not* above the middle .... *Danthonia carphoides* var. *angustior*

175. (*a*) Lemma-back with scattered hairs *more than 1 mm long* grading into a *band of longer hairs* (4-5 mm long) above; panicle 8-15 cm long; anthers yellow .... *Danthonia procera*
(*b*) As for (*a*) but panicle 3-3.5 cm long; glumes *very dark maroon* .... undescribed *Danthonia* sp.
(*c*) Lemma-back with uniform scattered hairs *0.5 mm long* or less and much shorter than those in upper row 176

176. (*a*) Lateral lobes extended into *2 thin bristles* 4-6 mm long; hairs on lemma sparsely scattered or in 2 distinct rows .... *Danthonia setacea*
(*b*) Lateral lobes *shortly awned* (bristles 4 mm or less) or *awnless* 177

177. (*a*) Upper row of hairs *extending beyond awnless* or minutely awned lateral lobes; culms about 3-noded; leaves not flexuous 178
(*b*) Upper row of hairs *falling short of* lateral lobe bristles by 2-4 mm; culms 5-many noded; leaves long (up to 35 cm) and threadlike *Danthonia longifolia*

178. (*a*) Sheaths *almost or completely hairless*; ligule hairs short (0.5 mm); blades rolling and firm .... *Danthonia semiannularis*
(*b*) Sheaths *markedly hairy* (hairs about 3 mm long) with a long tuft of hairs at each side of ligule; blades soft and flat near ligule end *Danthonia semiannularis* var. *gracillis*

179. (*a*) Hair tufts *absent* or only partially developed with only dorsal or marginal tufts present, and *not in a complete row* across back of lemma 180
(*b*) Hair tufts in a *complete row* across back of lemma just below sinus 185

180. (*a*) Lemma body *shorter* than lateral lobes including long or short awns 181
(*b*) Lemma body *longer* than or almost as short as lateral lobes including bristles if present 184

181. (*a*) *Lateral hair tufts only* present; leaves bristly, hairless and smooth; small alpine perennial with panicle 2.5-8 cm long, and 5-6 flowered spikelets .... *Danthonia nudiflora*

(*b*) *Lower hair tuft present* with or without upper hair tufts; leaves not rigid, often hairy 182

182. (*a*) Central awn extending about 5 mm beyond lemma lobe bristles; *panicle 4-5 cm long,* contracted, upright and compact .... *Danthonia pilosa*

(*b*) *Panicle 5-15 cm* long slender, *not compact* 183

183. (*a*) Panicle *erect,* florets *exceeding* glumes; spikelets 7-10 flowered, ligule a ring of very short hairs (0.25 mm) .... *Danthonia racemosa*

(*b*) Panicle *drooping;* florets *included within glumes*; spikelets 4-6 flowered; ligule usually a minute jagged rim, sometimes a row of very short hairs .... *Danthonia penicillata*

184. (*a*) Panicle *3-6 cm* long; leaves soft and fine; complete lemma 4.5-7 mm long; spikelets *often reflexed* at flowering, lowland species .... *Danthonia dimidiata*

(*b*) Panicle *2-3 cm* long; leaves needle-like; complete lemma 3-4 mm long; small alpine perennial with usually 4-flowered spikelets *Danthonia nivicola*

185. (*a*) Lemma with *a second row of hair tufts* just above callus 186

(*b*) Lemma *without* a second row of hair tufts although marginal hair tufts may be present; inflorescence with a few spikelets (about 6) *Danthonia laevis*

186. (*a*) Lemma body *1.25-3 mm* long 187

(*b*) Lemma body *3 mm or more* long 189

187. (*a*) Lateral lobes plus bristles *less than 6 mm* long 188

(*b*) Lateral lobes plus bristles *6-10 mm* long .... *Danthonia setacea*

188. (*a*) Lemma body *2.5-3 mm* long; lemma lobes 2-4 mm long; twisted column of awn longer than or about equal to lemma lobes (+ short bristle), *lowland* species with 4-20 spikelets per panicle, and 4-6 florets per spikelet .... *Danthonia dimidiata*

(*b*) Lemma body *less than 2.5 mm* long; lemma lobes 1-2 mm long, without bristles or mucronate; *sub-alpine plant* with very small panicles with 4-6 spikelets and 3-5 florets per spikelet .... *Danthonia pauciflora*

189. (*a*) Bristles about 2 mm long (rarely up to 4 mm), *much shorter* than rest of lateral lobes 190

(*b*) Bristles *4 mm long* or more, *equal in length* to rest of lateral lobe 191

190. (*a*) Lemma body *about 3.5 mm long*; palea extending *just above* sinus base; anthers *dark orange-yellow*; plants 30-90 cm high .... *Danthonia purpurascens*

(*b*) Lemma body *4-5 mm* long; palea 7-8 mm long, extending *well beyond* sinus base; anthers *yellow*; plants 70-120 cm high .... *Danthonia procera*

191. (*a*) Palea *4.5-5 mm* long with a *long drawn out, narrow,* bifid, membranous tip much exeeding sinus base; panicle branches smooth, minutely rough or minutely hairy .... *Danthonia caespitosa*

(*b*) Palea *broadly egg-shaped* with minutely bifid apex only *shortly extending beyond base of sinus*; panicle branches downy or silky hairy .... *Danthonia eriantha*

192. (*a*) Glumes *almost equal,* the upper less than 6 mm long; spikelets 4-7 flowered 193

(*b*) Glumes very *unequal,* the upper 6-8 mm long; spikelets 2-4 flowered, lemma ending in *2 long (2-3 mm) and 2 short bristle-teeth* .... *Amphibromus archeri*

193. (*a*) Lemma ending in *4 equal teeth*; panicle narrow and dense; awn reddish-brown arising from *upper 1/3 of lemma* .... *Amphibromus recurvatus*

(*b*) Lemma *irregularly toothed*; panicle *very loose*; awn pale-brown arising from *just above the middle* of lemma .... *Amphibromus neesii*

A KEY TO 70 GRASSES FOUND IN TASMANIA USING VEGETATIVE CHARACTERS

1. (*a*)	Ligule present (may be very small)		2
(*b*)	Ligule absent	*Echinochloa crus-galli* var. *frumentacea*	Japanese millet
2. (*a*)	Blade very hard, bristle-like with a very sharp tip (pungent pointed); littoral species (growing on the beach)		3
(*b*)	Blade not as above		4
3. (*a*)	Auricles present	*Festuca littoralis*	Coast fescue
(*b*)	Auricles absent	*Stipa teretifolia*	Coast speargrass
4. (*a*)	Leaf bud *folded* V or ♀ in cross section		5
(*b*)	Leaf bud *rolled* ⟃ in cross section		31
5. (*a*)	Auricles present		6
(*b*)	Auricles absent		8
6. (*a*)	Blade wide (2 mm wide and more), lower surface glossy		7

	(*b*) Blade narrow (1 mm wide or less), lower surface dull with minute forward pointing teeth or barbs, *very rough* when rubbed from tip backwards	*Nassella trichotoma*	Serrated tussock
7.	(*a*) Sheaths usually split right down, with overlapping margins; perennial; ligule usually 1 mm or less (up to 2 mm)	*Lolium perenne*	Perennial ryegrass
	(*b*) Young sheaths not split right down (oldest may be); self-regenerating annual; ligule 2 mm long or more	*Lolium rigidum*	Wimmera ryegrass
8.	(*a*) No hairs present in position of auricles		9
	(*b*) Hairs present in position of auricles		23
9.	(*a*) Ligule a membrane		10
	(*b*) Ligule a fringe of hairs	*Pennisetum clandestinum*	Kikuku grass
10.	(*a*) Ligule very small (0.5 mm-1.5mm)		11
	(*b*) Ligule prominent (2 mm-8 mm)		17
11.	(*a*) Leaf sheath split right down		12
	(*b*) Leaf sheath not split to base		15
12.	(*a*) Blades rough if lightly rubbed		13
	(*b*) Blades not rough to touch		14
13.	(*a*) Sheaths hairless; blades involute, shiny, 1-3 feet long	*Poa poiformis*	Blue Tussock grass
	(*b*) Sheaths hairless, blades ± flat, dull, about 6 inches long	*Dichelachne crinita*	Long hair plume grass
	(*c*) Sheaths hairy, blades involute, finely hairy	*Stipa pubescens*	Tall speargrass
14.	(*a*) Rhizomes present	*Poa pratensis*	Kentucky blue grass
	(*b*) Rhizomes absent; yellow colour at base of lowest living sheaths	*Cynosurus cristatus*	Crested dog's tail
15.	(*a*) Blades 1 mm wide or less, bristle-like; plants without rhizomes		16
	(*b*) Blades >2 mm wide with hooded (boat-shaped) tip, plants with rhizomes	*Poa pratensis*	Kentucky blue grass
16.	(*a*) Blades and sheaths with many fine short hairs	*Poa australis*	Tussock grass
	(*b*) Blades and sheaths quite hairless	*Festuca rubra* Sub. sp. *commutata*	Chewing's fescue
17.	(*a*) Leaf sides parallel with boat-shaped tip		18
	(*b*) Leaf sides taper to tip		21
18.	(*a*) Rhizomes present	*Glyceria maxima*	Water meadow grass
	(*b*) Rhizomes absent		19
19.	(*a*) Red colour present on sheaths especially lower ones	*Glyceria australis*	Australian sweet-grass
	(*b*) Sheaths green		20
20.	(*a*) Plant with stolons; sheaths with prominent cross veins	*Glyceria declinata*	Glaucous Sweet-grass
	(*b*) Plant without stolons; no cross veining on sheaths	*Poa annua*	Annual poa
21.	(*a*) A densely tufted fleshy perennial with very broad (2-12 mm) strongly folded and keeled blades and sheaths; lower leaf sheaths sometimes hairy (coarsely); ligules up to 12 mm long	*Dactylis glomerata*	Cocksfoot
	(*b*) Annual with leaf blades not wider than 3 mm		22
22.	(*a*) Leaf blades up to 3 mm wide, open	*Dichelachne crinita*	Longhair plume grass
	(*b*) Leaf blades about 0.3 mm wide, inrolled	*Aira caryophyllea*	Silvery hair grass
23.	(*a*) Leaf blades broad (when flattened if rolled) (>2 mm wide)		24
	(*b*) Leaf blades narrow (<2 mm wide)		27
24.	(*a*) Plant without stolons, ligule membranous		25
	(*b*) Plant with stolons, ligule a fringe of hairs		26
25.	(*a*) Sheath margins fringed with distant hairs	*Stipa variabilis*	Spear grass
	(*b*) Sheath margins not fringed	*Stipa nervosa*	Spear grass
26.	(*a*) Leaves with few long hairs, blade T.S. V-shaped, under surface fairly dull, upper surface rough when rubbed downwards	*Stenotaphrum secundatum*	Buffalo grass

	(*b*) Leaves without hairs, under surface glossy, leaf smooth	*Hemarthria uncinata*	Mat grass
27.	(*a*) Plant with rhizomes and/or stolons, leaves distichous		28
	(*b*) Plant without rhizomes or stolons, leaves not distichous		29
28.	(*a*) Leaf blades stiff with inrolled margins and shining under-surface	*Distichlis distichophylla*	Australian Salt grass
	(*b*) Leaf blades not stiff, open and flat, with dull under-surface	*Cynodon dactylon*	Couch
29.	(*a*) Leaves rough if lightly rubbed; ligule fringed with hairs	*Stipa mollis*	Speargrass
	(*b*) Leaves not rough		30
30.	(*a*) Leaf blades open and flat, older leaves and culms with deep maroon colouring; margins of young blades and lowest leaf sheaths with scattered long white hairs, older leaves hairless	*Themeda australis*	Kangaroo grass
	(*b*) Leaf blades very narrow, usually inrolled and folded, grey-green colour, hairy, sometimes with maroon colouring	*Danthonia* spp.	Wallaby grasses
31.	(*a*) Ligule a prominent membrane (2 mm+)		32
	(*b*) Ligule minute (membrane <1 mm) or absent or replaced by a fringe of hairs		54
32.	(*a*) Blades and sheaths hairless		33
	(*b*) Blades and/or sheaths with hairs		46
33.	(*a*) Leaf margins serrate (use lens)		36
	(*b*) Leaf margins smooth, not serrate		34
34.	(*a*) Annual, culms slender, up to 2 feet high	*Briza* spp.	Quaking grass
	(*b*) Perennial		35
35.	(*a*) Leaf stiff, upper surface white and deeply ridged, usually rolled, at least above; rhizomatous plant growing in sand dunes	*Ammophila arenaria*	Marram grass
	(*b*) Leaf not stiff, plant not or only very shortly rhizomatous, stem bases swollen; forage grass	*Phalaris tuberosa*	Toowoomba Canary grass
36.	(*a*) Surface(s) of blade apart from margin smooth to the touch		37
	(*b*) Surface(s) of blade rough		40
37.	(*a*) Plant with stolons only (not rhizomes)	*Agrostis stolonifera*	Creeping bent.
	(*b*) Plant without stolons, tufted or with very short rhizomes		38
38.	(*a*) Upper surface of leaf fairly smooth, culms stout, basal 1-3 internodes very short, usually swollen or bulbous	*Phleum pratense*	Timothy grass
	(*b*) Upper leaf surface deeply ridged, stem bases not swollen		39
39.	(*a*) Tufted annual usually growing in sand near the sea, basal leaves light brown	*Agrostis billardieri*	Coastal blown grass
	(*b*) Tufted perennial associated with pastures, basal leaves turning dark brown	*Alopecurus pratensis*	Meadow foxtail
40.	(*a*) Auricles present		41
	(*b*) Auricles absent		42
41.	(*a*) Blade flat, shining beneath and curving gently	*Festuca arundinacea*	Tall fescue
	(*b*) Blade often inrolled, stiff and straight, not shining	*Deyeuxia quadriseta*	Reed Bent grass
42.	(*a*) Annual species		43
	(*b*) Perennial species		45
43.	(*a*) Blade deeply ridged on upper side, culms slender usually <2 feet high		44
	(*b*) Blade fairly smooth on upper side, culms stout, up to 5 feet high	*Avena fatua*	Wild oats
44.	(*a*) Leaf blade narrow (1-2 (3) mm wide) often rolled along its length	*Agrostis aemula*	Blown grass
	(*b*) Leaf blade (at least middle ones) wide (4-6 mm wide) flat	*Phalaris minor*	Lesser Canary grass

45. (*a*)	Robust plant spreading extensively by creeping rhizomes; often with prominent cross-veins on blades and sheaths; growing in damp situations	*Phalaris arundinacea*	Reed Canary grass
(*b*)	Plant tufted, without rhizomes, culms stiff and reed-like; under-surface of blade glossy, top surface rough, blades becoming harsh and often maroon coloured from the tip down	*Oryzopsis miliacea*	Rice millet
46. (*a*)	Annual species		47
(*b*)	Perennial with tufted habit, or rhizomes or stolons		48
47. (*a*)	Sheath not split to base; ligule 3-6 mm long, jagged	*Bromus diandrus*	Great brome
(*b*)	Sheath split right down to base, upper sheaths somewhat inflated; ligule up to 3 mm long, hairy	*Lagurus ovatus*	Hairstail grass
48. (*a*)	Plant tufted without stolons, rhizomes or bulbils		52
(*b*)	Plant with stolons, rhizomes or bulbils		49
49. (*a*)	Plant forming dense thick growth with strings of bulbils at bases of culms	*Arrenatherum elatius* var. *bulbosum*	Bulbous oat grass
(*b*)	Plant spreading by means of rhizomes or stolons; without bulbils		50
50. (*a*)	Plant with rhizomes and long stolons forming a dense low mat, blades hairless, sheaths with hairs	*Paspalum distichum*	Water couch
(*b*)	Plant with rhizomes only, tall robust grass, blades and sheaths with hairs		51
51. (*a*)	Under-surface of leaf blades highly glossy	*Hierochloë redolens*	Sweet holy grass
(*b*)	Under-surface of leaf blades dull	*Paspalum dilatatum*	Paspalum
52. (*a*)	Sheath not split right down to base, leaves rough if lightly rubbed	*Bromus unioloides*	Prairie grass
(*b*)	Sheath split right down		53
53. (*a*)	Sheaths and blades densely hairy (pubescent) soft and downy to touch, lower sheaths with pink veins on white background, innermost leaf-sheath *pubescent to base*	*Holcus lanatus*	Yorkshire fog
(*b*)	Sheaths loosely to densely bearded at the top, otherwise smooth or loosely hairy; veins green; blades loosely hairy or hairless, rough or smooth	*Anthoxanthum odoratum*	Sweet vernal
54. (*a*)	Ligule a fringe of hairs (v. short membrane (<0.1 mm) in addition may be present in *Sporobolus*)		55
(*b*)	Ligule a minute membrane (0.5 mm-1 mm, may or may not be fringed with hairs); or absent		60
55. (*a*)	Plant with rhizomes		58
(*b*)	Plant without rhizomes (stolons present or habit tufted)		56
56. (*a*)	Plant very hairy and silvery in appearance with very long sprawling stolons, growing on sand dunes	*Spinifex hirsutus*	Hairy Spinifex
(*b*)	Plant not so		57
57. (*a*)	Leaves stiff and sharply pointed, harsh, often inrolled in dry conditions, with little tuft of white hairs in position of auricles, perennial	*Sporobolus capensis*	Paramatta grass
(*b*)	Leaf blades broad (4-10 mm wide) finely pointed, hairless, sheaths hairy on margins; annual sp.	*Setaria* spp. (*S. viridis* and *S. verticillata*)	Pigeon grass

58. (*a*) Robust deep-rooting perennial with soft fleshy rhizomes forming dense patches growing in muddy tidal saltmarshes and mudflats, e.g., Tamar River; sheaths have cross veins	*Spartina townsendii*	Townsend's Cord grass
(*b*) Plant not so		59
59. (*a*) Blades and sheaths without hairs except for tuft of silky hairs in position of auricles and at nodes; blades broad (4-6 mm) and very stiff, narrowing to fine point; rhizomes fairly stout	*Imperata cylindrica*	Blady grass
(*b*) Blades and usually sheaths hairy; blades soft, open and flat, narrow, rather short (1-3 inches), often curving out from more or less wiry stems; rhizomes very thin and wiry	*Microlaena stipoides*	Weeping grass
60. (*a*) Auricles present (obvious claw-like outgrowths at blade-sheath junction)		61
(*b*) Auricles absent		65
61. (*a*) Under-surface of blade with high gloss, upper-surface much ridged		62
(*b*) Under-surface of blade dull, not shining		63
62. (*a*) Leaves very stiff and harsh, unless young, with rough cutting edges; coarse tufted perennial forming tussocks especially on wet ground	*Festuca arundinacea*	Tall fescue
(*b*) Leaves not stiff and harsh, blades smooth to the touch	*Lolium multiflorum*	Italian ryegrass and Short rotation rye grass
63. (*a*) Plant spreading by means of rhizomes; blades rough when lightly rubbed downwards	*Agropyron repens*	English Couch
(*b*) Plant without rhizomes		64
64. (*a*) Blades narrow (about 2 mm wide) rough, deeply ridged on upper-surface, and stiff	*Agropyron scabrum*	Common wheat grass
(*b*) Blades wide (about 5 mm wide), fairly smooth on upper-surface, soft to touch, not stiff	*Hordeum leporinum*	Barley grass
65. (*a*) Sheath split right down to base		66
(*b*) Sheath split only part way down to base, blades and sheaths softly hairy, small annual or biennial species with loosely tufted or solitary culms, innermost leaf-sheath pubescent to about *halfway to base*	*Bromus mollis*	Soft brome
66. (*a*) Perennial with broad leaves, blades about 9 inches long, often rolling		71
(*b*) Leaf blades much shorter		67
67. (*a*) Perennial spreading by rhizomes, stolons may be present	*Agrostis tenuis*	Brown top bent.
(*b*) Annual species without rhizomes or stolons		68
68. (*a*) Mature plant mostly purple-coloured, blades and sheaths very hairy	*Digitaria sanguinalis*	Summer grass
(*b*) Plant not mostly purple		69
69. (*a*) Blades rough, hairless; sheaths with or without hairs	*Dichelachne sciurea*	Short hair plume
(*b*) Blades very narrow and bristle-like, not rough, with short hairs, sheaths hairless	*Vulpia* spp.	Squirrel tail fescue, etc.
70. (*a*) Blades and sheaths hairless except for tuft of silky hairs in position of auricles and at nodes; plant with fairly stout rhizomes	*Imperata cylindrica*	Blady grass
(*b*) Sheaths hairy		71
71. (*a*) Blades hairless, undersides glossy		72
(*b*) Blades densely hairy; appearing silvery	*Stipa stuposa*	Spear grass
72. (*a*) Blades smooth on upper surface, often red colour on plant near ground level	*Stipa compacta*	Spear grass
(*b*) Blades rough on upper surface, sheaths silvery pubescent	*Stipa semibarbata*	Spear grass

GLOSSARY

abaxial: side away from axis
acuminate: tapering to a point in hollow curves
acute: tapering to a sharp point in straight lines
adaxial: side towards the axis
aristate: awned
ascending: sloping upwards; applied to stems which curve from the base upwards
auricles: small claw- or ear-like outgrowths at junction of blade and sheath of some grasses
auriculate: having auricles
barbed: bearing backward pointing teeth
bidentate: with two points or teeth at tip
bulbil: a little bulb; swollen base of the stem
callus: hardened basal projection at the base of the floret or spikelet usually incorporating the scar of attachment
capitate: head-like
capillary: hair-like
chartaceous: of papery texture
coriaceous: of leathery texture
culm: jointed stem of grasses
denticulate: with very small teeth pointing outwards
digitate: several members borne at top of support, e.g., racemes at top of peduncle or flowering stalk as in *Cynodon dactylon*
sub-digitate: one or two of members borne slightly lower down penduncle
dioecious: male flower on one plant, female flower on another
distant: separate from each other
distichous: conspicuously 2-ranked
dorsal compression: (of spikelet or floret) flattened from back to front, i.e., middle of lemma brought close to its margins so that two keels are formed
exserted: projecting beyond enclosing structure
filiform: thread-like
flexuous: wavy
floret: lemma and palea with the enclosed flower; florets may be bisexual and perfect, or unisexual and male or female, or reduced to the lemma
glabrous: without hairs
glaucous: bluish-green, often because of a covering of wax or thick white skin; covered with a bloom like a plum
glume: two (usually) empty bracts at the base of the spikelet, called the lower and upper glumes
grain: caryopsis or naked seed of grasses
hilum: scar of attachment of ovule to ovary wall (in grasses)
hoary: grey with a covering of fine soft hairs (pubescence)
hyaline: transparent
indurated: hard
inflorescence: flowering head
involucre: a whorl of bracts
involute: with the margins rolled inwards
keel: sharp fold or ridge at the back of a compressed sheath, blade, glume, lemma or palea
lanceolate: lance-shaped; widest in the lowest-third and gradually narrowed upwards, 3 times as broad as long; if longer or wider would be described as narrowly or broadly lanceolate
lateral compression: (of spikelet or floret) flattened from side to side so that structure has one keel down the middle
lemma: lower of two bracts enclosing the flower (lodicules, stamens, ovary), = flowering glume or valve
linear: long and narrow, with parallel sides, ratio of length to breadth = 12 or more to 1
littoral: growing on the beach; *sublittoral* growing near the beach, e.g., on dune slacks
mucro: a sharp terminal point, a minute awn, *mucronate*—having a mucro
nerve: vein: slender rib marking position of strengthening tissue in leaves, glumes, lemmas and paleas
oblong: with parallel sides, longer than wide in the ratio of about 2 to 1; if longer or wider is described as narrowly or broadly oblong
obovate: ovate outline inverted
obtuse: blunt; applied to the tip of a leaf or bract
ovate: egg-shaped in outline, about twice as long as broad, tapering to the tip; also, narrowly and broadly ovate when longer or wider
ovoid: egg-shaped solid
palea: upper of two bracts enclosing the lodicules stamens and ovary = valvule or upper palea
pallid: pale, light coloured
panicle: a compound raceme with spikelets on branches (stalk or pedicel) of branches of the inflorescence
papillose: covered in papillae or little bumps
pectinate: comb-like
pedicel: the spikelet-stalk
pubescent: downy, covered with fine soft hairs
pungent-pointed: with very sharp hard point
raceme: inflorescence with spikelets on stalks on the unbranched main axis
rachilla (or *rhachilla*): main axis of spikelet
rachis (or *rhachis*): main axis of inflorescence
recessed: sitting in a hollow
reflexed: bent or turned backwards or downwards
retrorse: directed backwards or downwards
rhizome: underground stem, bearing scale-like leaves
scabrous: rough to the touch
scabrid and *scaberulous*: minutely scabrous
secund: all directed to one side
serrate: saw-toothed
serrulate: minutely serrate
seta: bristle
setaceous: bristle-like
sinus: gap between two apical lobes
spike: unbranched inflorescence with sessile spikelets
spikelet: unit of the grass inflorescence, usually composed of two glumes and one or more flowers each borne between a lemma and a palea
spike-like: resembling a spike, as in very dense racemes and panicles with very short lateral branches
stolon: a runner or creeping stem (above ground) rooting at the nodes and giving rise to vegetative shoots and culms
subterminal: just below the tip
subulate: awl-shaped, cylindrical in section and ending in a point
terete: circular in cross-section

terminal: at the tip
truncate: ending abruptly as if cut off
tuberculate: with knobby projections
vein: see nerve
whorl: several at a node

ACKNOWLEDGMENTS

I am much indebted to J. H. Willis of the National Herbarium, Melbourne and Dr J. W. Vickery of the National Herbarium, Sydney for most kindly and patient assistance with identification of specimens. The production of this contribution would have been impossible without reference to their most useful and reliable publications. The work has been supported by Research Funds from the University of Tasmania and I must thank Professor G. C. Wade and Dr J. J. Yates of the Faculty of Agricultural Science for their constant encouragement and advice during the period of its preparation. To my husband Dr John A. Townrow, Senior Lecturer in the Botany Department, I owe a debt of deep gratitude for the real sharing of family commitments with untiring moral support, freeing me for part-time work in the University.

REFERENCES

BLACK, J. M., 1960—*Flora of South Australia. Part* 1, 2nd Ed. Govt Printer, Adelaide.

GARDNER, C. A., 1952—*Flora of Western Australia. Vol.* 1, *Part* 1. *Gramineae.* Govt Printer, Perth.

HITCHCOCK, A. S., 1950—*Manual of the Grasses of the United States* 2nd Ed. Revised AGNES CHASE. U.S.D.A. Miss. Publ. 200.

HUBBARD, C. E., 1954—*Grasses. A Guide to their Structure, Identification, Uses, and Distribution in the British Isles* Pelican Books, A295.

HUGHES, D. K., 1921—A Revision of the Australian Species of *Stipa. Kew Bull.* 1921.

RODWAY, L., 1903—*The Tasmanian Flora* Govt Printer, Hobart.

VICKERY, J. W., 1939—Revision of the Indigenous Species of *Festuca* Linn. in Australia. *Contrib. N.S.W. Nat. Herb.* (1939) 1: 5-15.

———————, 1940—A Revision of the Australian Species of *Deyeuxia* Clar. ex Beauv., with Notes on the Status of the Genera *Calamagrostis* and *Deyeuxia. Contrib. N.S.W. Nat. Herb.* (1940) 1: 43-82.

———————, 1941—A Revision of the Australian Species of *Agrostis* Linn. *Contrib. N.S.W. Nat. Herb.* (1941) 1: 101-120.

———————, 1956—A Revision of the Australian Species of *Danthonia* DC. *Contrib. N.S.W. Nat. Herb.* (1956) 2: 249-325.

———————, 1963—*Dryopoa,* a New Grass Genus Allied to *Poa. Contrib. N.S.W. Nat. Herb.* (1963) 3: 195-197.

WILLIS, J. H., 1962—*A Handbook to Plants in Victoria. Vol.* I. *Ferns, Conifers and Monocotyledons.* U.P. Melbourne.