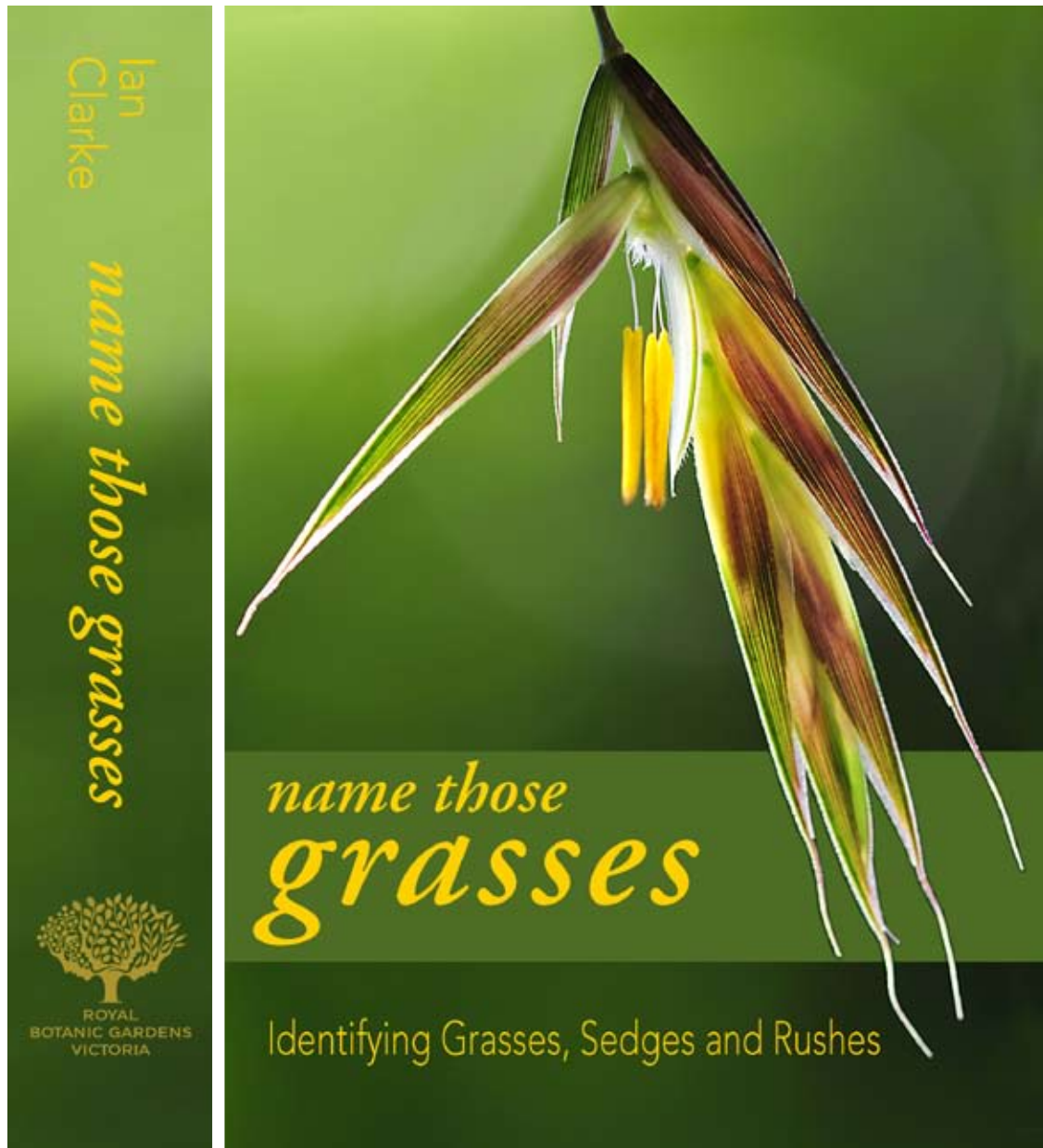


# *Name those grasses*

*Identifying Grasses, Sedges and Rushes*

An extensively illustrated book explaining:

- \* The structure of Grasses and several similar groups.
- \* The descriptive terminology.
- \* The process of identification.



*Published November 2015 by:*

**Royal Botanic Gardens Victoria, Birdwood Avenue, Melbourne 3004.**

*Available from:*

(initially) Royal Botanic Gardens Victoria shops and website.

**[www.rbg.vic.gov.au](http://www.rbg.vic.gov.au)**

(later) Selected websites and retailers.

*Enquiries:* **[namethosegrasses@gmail.com](mailto:namethosegrasses@gmail.com)**

The Grasses constitute one of the largest families of Flowering Plants, with estimates of numbers suggesting more than 12,000 species. They can scarcely be challenged as the 'most important plant family' to humanity, providing all our cereals as well as forming a substantial component of pastures for grazing livestock.

Accurate identification is an essential prerequisite to any discipline involved with plants. However, the somewhat cryptic nature of Grass flowers, and some superficially similar species (sometimes belonging in other families), has usually seen identification left to the expert.

With clear text, and detailed illustrations and photographs this book describes the structure of Grasses and some similar groups, explains the language used in their description, and describes the process of identification. It will greatly facilitate the successful use of the standard identification manuals available for most parts of the world. The drawings and photographs, covering over 200 species, will assist with recognition of many common plants of roadsides and pastures.

This book will be of value to anyone with an interest or profession that touches on these fascinating and important plants, including those involved in agriculture and crop production, as well as natural resource managers. The clear, labelled illustrations will be particularly useful to teachers of biological science and taxonomic botany. And of course all naturalists and lovers of wild places are invited to share the beauty of this corner of the Natural World.

Ian Clarke has spent more than 40 years working in the botanical field. Initially at The University of Melbourne School of Botany, he collected samples for practical classes in plant taxonomy, as well as maintaining the School's substantial herbarium. He later joined the Royal Botanic Gardens Victoria, working for many years in the National Herbarium's plant identification and information service. He has long held an interest in botanical illustration, and has served on the selection panel for numerous Botanical Art exhibitions organised by the Friends of the Royal Botanic Gardens, Melbourne, Inc. An earlier book, *Name that Flower: the Identification of Flowering Plants*, written with coauthor Helen Lee, has continued in print since first published in 1987 by Melbourne University Press.

### Specifications:

A5, soft bound.

**Pages:** i-viii + 600.

**Figures:** 151 (detailed, labelled, black and white line drawings).

**Plates:** 34 (labelled colour photographs covering 64 pages).

References.

Comprehensive glossary.

Index.

**RRP:** \$48 (Australian Dollars)

**The procedure for plant identification is the same world-wide so the book is globally relevant, however the illustrations and photographs mostly depict species that are common in temperate parts of the world.**

The drawings and photographs, emphasising structural details, illustrate 131 species of Grasses, 38 Sedges, 16 Rushes, 16 Restios, Rope-rushes and allies, and 2 species of Typha (Bulrushes).

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## Sample text pages

### Name those grasses

The great majority of grasses produce spikelets with two readily discernible **glumes**. In many species the upper glume is the larger; the description 'glumes inverse' may be applied to species in which the lower is the larger. Occasionally both glumes are very small as in *Microlaena stipoides* (Weeping Grass, Fig. 65, Pl. 12b), and sometimes reduced to a small stub or ring of tissue, for example in the tribe Oryzeae (Figs. 59–61, although some texts regard glumes as absent in these species). In some cases only one of the glumes is significantly reduced in size (Pl. 9g); occasionally one is absent as in most of the spikelets in species of *Lolium* (Ryegrass, e.g. Fig. 49). The nature of the glumes varies from thin and membranous in *Austrostipa* (Figs. 14, 15) to tough and leathery (*Parapholis*, Fig. 57), to thick and firm (Pl. 24c). It is often the case that when the glumes are thin, the enclosed fertile lemmas (and possibly also the paleas) are thickened as in many members of the tribe Paniceae such as *Setaria* (Figs. 95, 96, Pl. 19e), apparently taking over a role in protecting the flower and fruit. The reverse situation, in which the glumes are much thicker than the thin and almost transparent lemmas and paleas, is also quite common, for example *Sorghum* (Figs. 99, 100) and *Miscanthus* (Pl. 23b, d) and other species in the tribe Andropogoneae.

Almost universally the glumes are arranged on opposite sides of the base of the spikelet but occasionally both glumes are on one side as in *Hordeum* (Figs. 23, 24) and *Parapholis* (Fig. 57). Another possibility occurs in the common European species *Alopecurus pratensis* (Meadow Foxtail, Pl. 5c) in which the glumes are united by their lower margins.

The number of florets per spikelet varies, commonly from one (in many species) to several (also in many species) to relatively numerous (over 100 reported in *Eragrostis speciosa* of northern Australia). Spikelets which consistently contain only one floret occur in a number of large and/or common genera, providing a useful and distinctive 'spotting character' for these groups. Examples include *Agrostis* (Bent, Fig. 30), *Alopecurus* (Foxtail, Pl. 5), *Austrostipa* (Speargrass, Figs. 14, 15, Pl. 2), *Nassella* (Needlegrass, Figs. 16, 17), *Phleum* (Timothy, Fig. 40), and *Piptatherum* (Rice Millet, Fig. 18).

In descriptions of genera and species, the 'usual' number of florets in each spikelet is often given as a range, for example in the form 'spikelets 2–4-flowered' or 'spikelets up to 10-flowered'. This range generally includes any sterile or rudimentary florets.

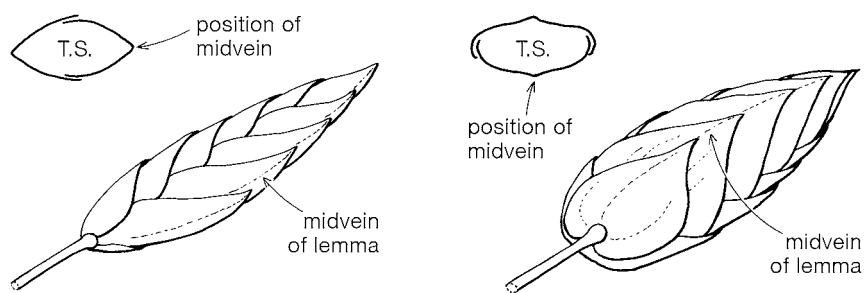
Many species have spikelets that are wholly bisexual, that is, they contain florets with both male and female parts (stamens and gynoecium). Members of the large genus *Poa* (Meadowgrass) could be thought of as 'typical' grasses with their spikelets containing a number of bisexual florets above the two glumes (Figs. 50–54, Pl. 8); usually the number is not

Family POACEAE (Grasses)

**Floral structure summary : Grasses**

- Flowers** Small, usually bisexual, sometimes unisexual or sterile, and together with 2 enclosing bracts (lemma and palea) are known as **florets** (Fig. 6, Pls. 1, 7g, 8c).
- Perianth** Either considered absent or represented by the lodicules, which are small colourless scales, usually 2, usually present at the base of the ovary (e.g. Figs. 6f, 21e, 55e, Pls. 4c, 6e).
- Androecium** **Anthers** usually 3 (Pl. 5c, h), rarely 1–6 or more (Pl. 10e), the stamens almost always free.
- Gynoecium** Ovary superior, with 1 loculus and 1 more or less basal ovule. Styles and stigmas usually 2 (e.g. Figs. 21f, 55e, Pls. 4c, 6e, 8c), sometimes 3 (Fig. 58h).
- One or more **florets** above 2 empty bracts (the **glumes**, usually 2, sometimes 1 or 0) form the **spikelets** (Pls. 1, 2b). Florets and glumes distichous.

definitely fixed. Such spikelets are sometimes referred to as indeterminate. The florets usually diminish in size towards the top of the spikelet, and the upper one(s) may be rudimentary. A common alternative condition is for spikelets to include both bisexual and male or neuter florets. Species in the tribes Paspaleae and Paniceae (Figs. 83–96, Pls. 19, 20) have quite distinctive two-flowered spikelets bearing a male or neuter floret below a bisexual one. These are sometimes referred to as determinate spikelets as the rachilla apparently ends at the upper floret.



**a lateral compression**

spikelets flattened side to side with the midveins along the spikelet 'edges'.

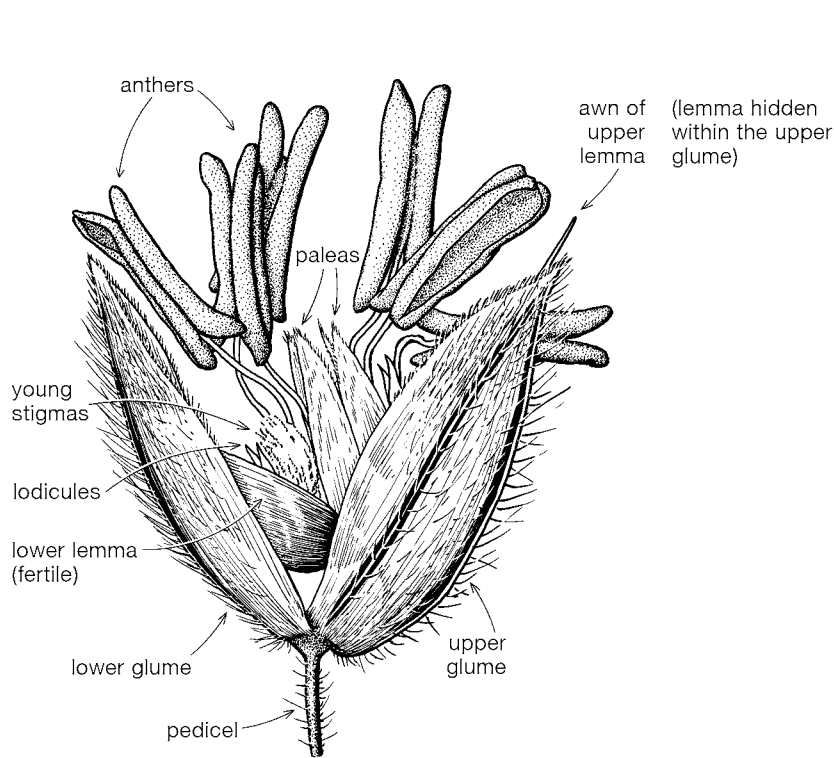
**b dorsal compression**

spikelets flattened front to back, the midveins running along the centre of the 'flat' sides.

Fig. 9 Grass Structure 4: spikelet compression.

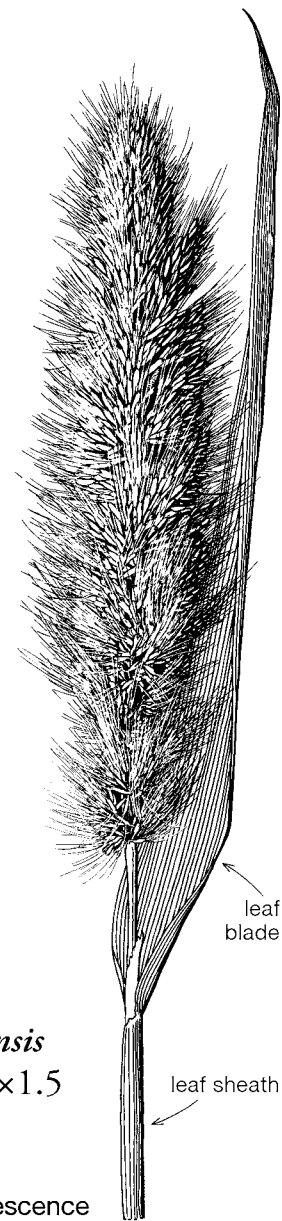
The diagrams illustrate two common conditions, but some species have spikelets more or less cylindrical without obvious compression.

# Sample illustrations



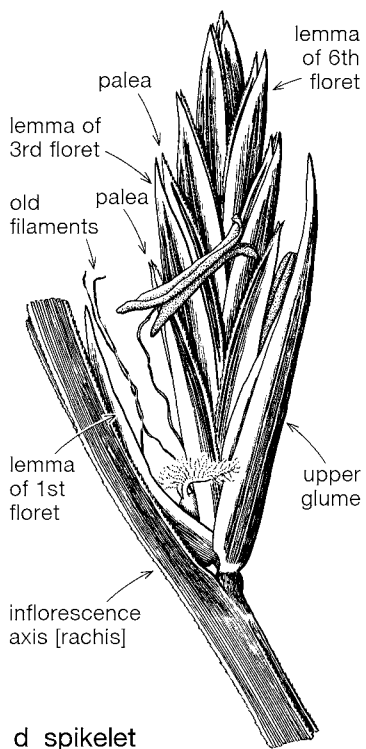
d spikelet at anthesis

Spikelet of *Holcus lanatus* (Fog Grass) ×15



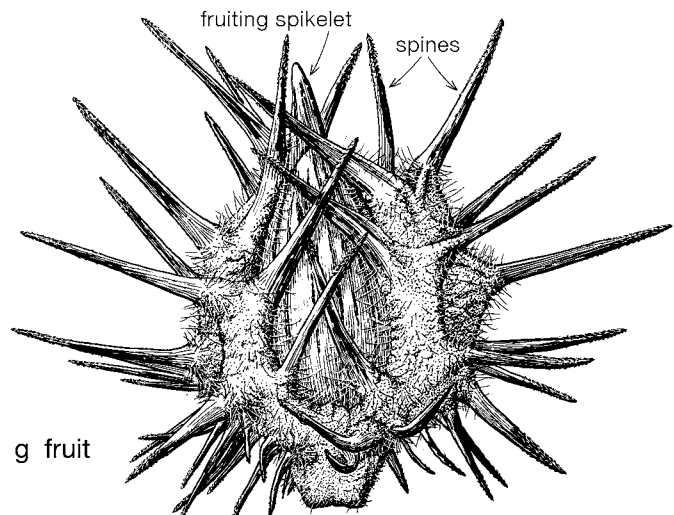
Inflorescence of *Polygomon speliensis* (Annual Beardgrass) ×1.5

c inflorescence



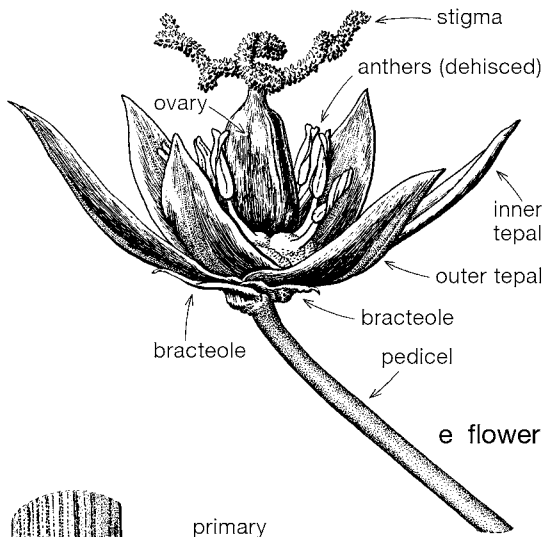
d spikelet

Spikelet of *Lolium perenne* (Perennial Ryegrass) ×6

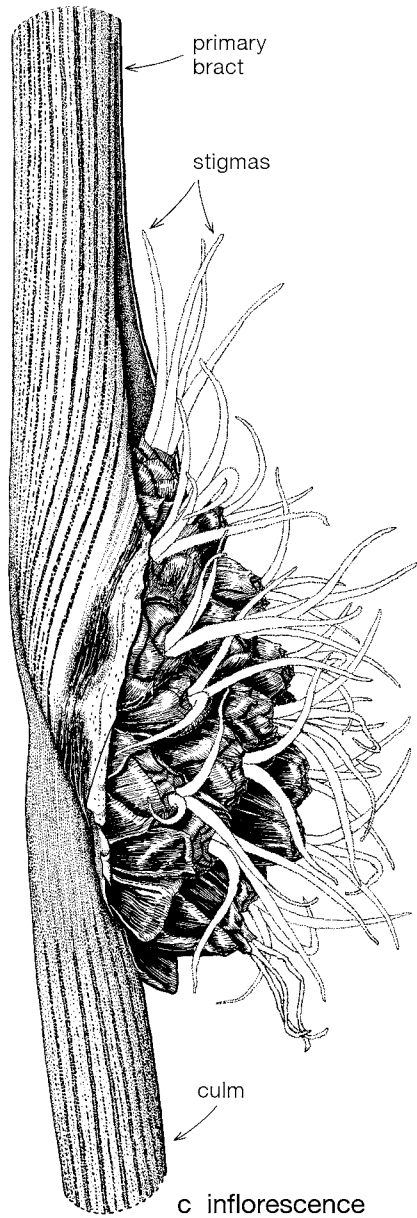


g fruit

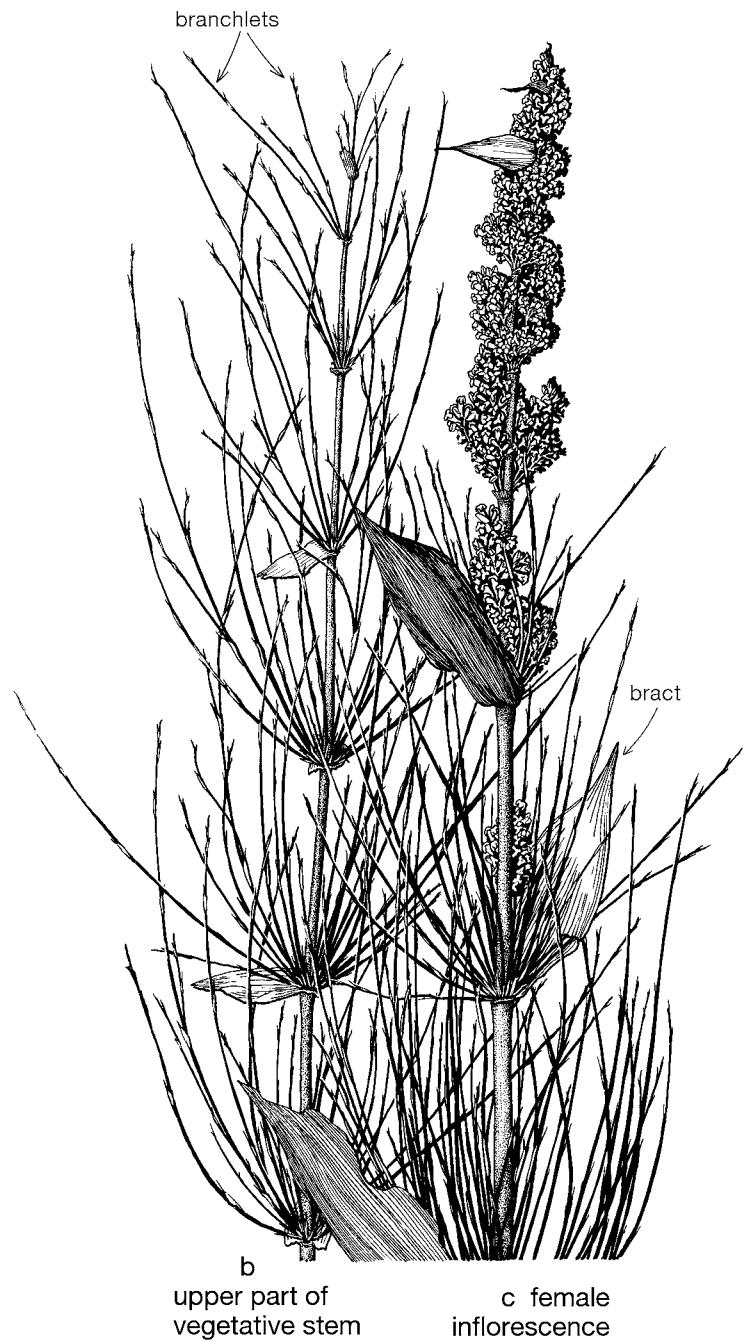
Fruit of *Cenchrus longispinus* (Spiny Burrgrass) ×7



Flower of *Juncus pauciflorus*  
(Looseflower Rush) ×15

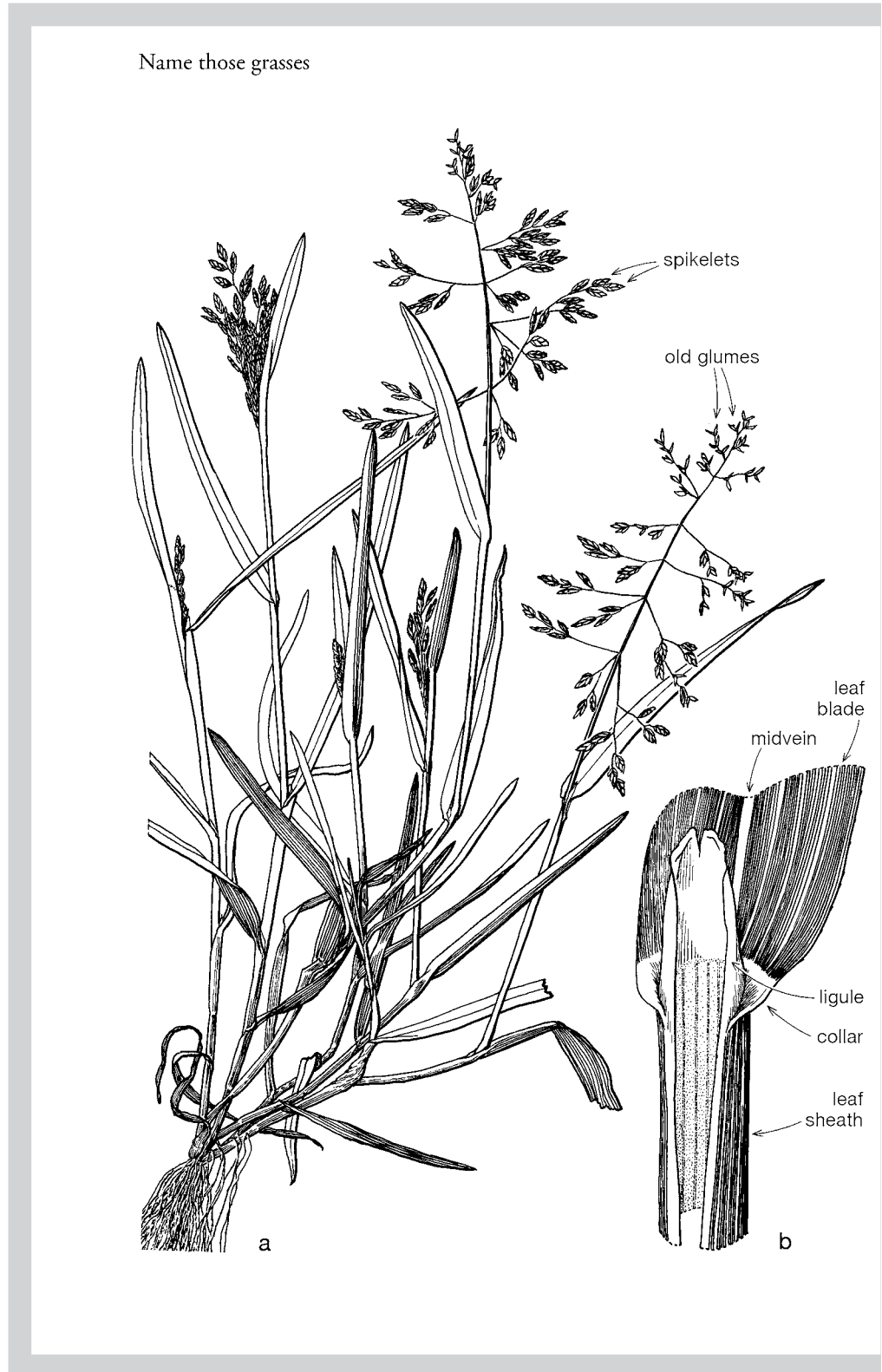


Inflorescence of  
*Chorizandra cymbaria*  
(Heron Bristle-rush) ×6



Vegetative culm and  
inflorescence of *Elegia capensis*  
(Horsetail Restio) ×0.6

# Sample Figure





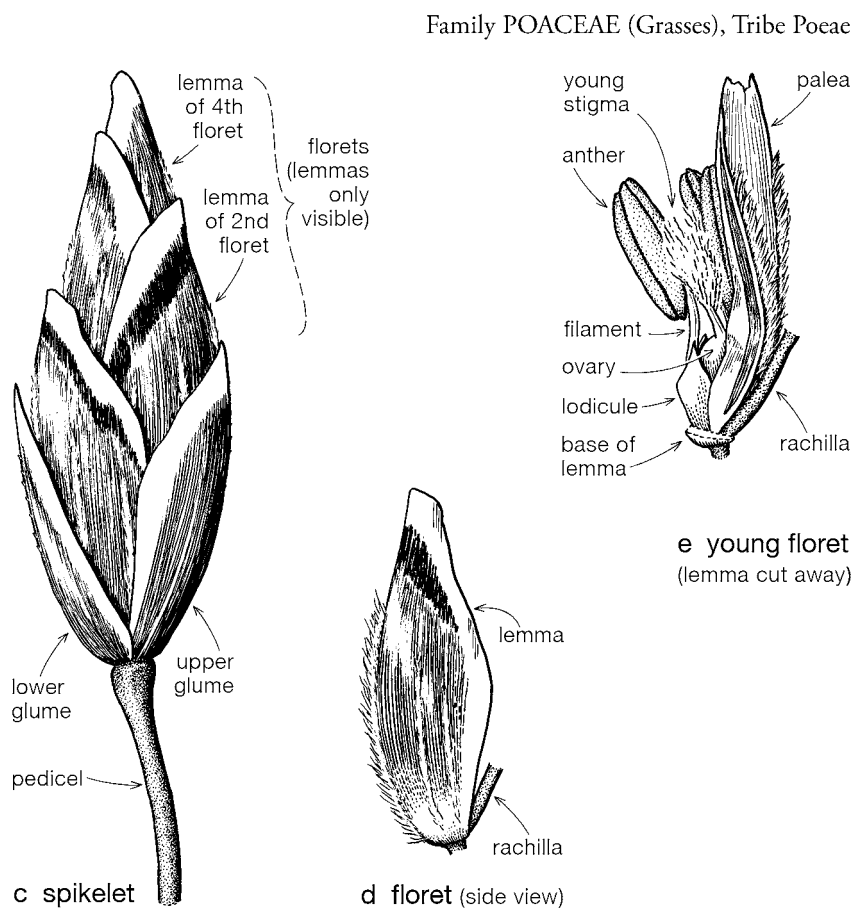


Fig. 50 *Poa annua* (Annual Meadowgrass, Annual Bluegrass, Winter Grass) Very variable, often bright green annual (or short-lived perennial) to c. 30 cm tall but often less, usually loosely tufted with culms leaning or upright; leaf blade apex abruptly pointed or hooded (often called boat-shaped); ligule membranous; inflorescence an open panicle, the branches single or paired from each node or sometimes the lower in threes; spikelets mostly 3–6-flowered, often tinged purplish; compression lateral; articulation above the glumes; lower glume usually 1-nerved, the upper 3-nerved; lemmas 5-nerved, keeled, usually hairy along the keel and lateral veins; palea usually hairy on the keels; anthers 3, pale yellow; stigmas colourless. Native to Europe and temperate Asia, but very widely naturalised elsewhere, and a common weed of cultivation and lawns, and waste land in damper areas. Flowering mostly late winter to summer but plants can be found in flower almost any time of year as various forms respond to regional conditions. (a  $\times 0.7$ , b  $\times 7$ , c–e  $\times 15$ . 3530.)

## Sample Plate



Family POACEAE (Grasses),  
Tribe Poeae/Aveneae

a

Pl. 4a-c *Avena sterilis* (Sterile Oat, Winter Wild Oat, Animated Oat) Rather robust annual to c. 1.5 m or more tall but often less; culms usually loosely tufted; ligule membranous; inflorescence an open panicle; spikelets 2-5-flowered, soon conspicuously nodding; compression becoming lateral (spikelets initially more or less terete); articulation above the glumes, the florets falling together as a unit; glumes up to c. 4 cm long, 9-11-nerved; lemmas 7-nerved, the lower two lemmas each with a robust dorsal awn consisting of a dark column and finer bristle; anthers 3, 5 mm long; caryopsis held within the firm lemma and palea. Native to the Mediterranean region extending to SW and C Asia but now widely introduced elsewhere, at times a common weed of wasteland, roadsides and margins of farmland. Flowering mostly in spring. Cf. Figs. 35, 36. (3910.)

Pl. 4d *Avena barbata* (Bearded Oat, Slender Oat) is similar but generally a more slender plant, with smaller spikelets (the glumes up to c. 3 cm long), the florets falling separately, the lemmas with two fine terminal bristles as well as the dorsal awn. With similar original distribution, this is now a widely naturalised weed of waysides and crops. (3884.)

