

GLOSSARY

- Abortive.* Imperfectly developed.
- Acuminate.* Gradually tapering to a sharp point. Compare acute.
- Acute.* Sharp-pointed, but less tapering than acuminate.
- Aggregate.* Collected together in tufts, groups, or bunches. Applied especially to inflorescences. The racemes are aggregate in several species of *Andropogon*.
- Annual.* Within 1 year. Applied to grasses which do not live more than 1 year.
- Winter annual.* A plant which germinates in the fall, lives over winter, and produces its seed the following spring, after which it dies.
- Anthesis.* The period during which a flower is open. In grasses, when the lemma and palea are expanded and the anthers and stigmas are mature.
- Antorse.* Directed upwards or forwards. Applied especially to scabrous or pubescent stems, sheaths, awns, and so on. Opposed to retrorse.
- Apiculate.* Having a minute pointed tip. Applied especially to fertile lemmas in fruit, such as certain species of *Eriochloa*.
- Appressed.* Lying against an organ. The branches of an inflorescence may be appressed to the main axis or the hairs on a stem may be appressed to the surface.
- Aristate.* Awned; provided with a bristle at the end or at the back or edge of an organ. In grasses applies especially to the awns at the end of the bracts of the spikelet. Compare awn. *Aristulate.* Bearing a short awn.
- Articulate.* Jointed. Joined by a line of demarcation between two parts which at maturity separate by a clean-cut scar. Certain spikelets are articulate with the pedicel; certain awns with the lemma. *Articulation.* The point of union of two articulate organs.
- Ascending.* Sloping upward. Applied to stems which curve upward from the base, to the branches of an inflorescence which slope upward at angle of about 40° to 70°, and to other parts such as blades and hairs. Compare appressed and spreading.
- Attenuate.* Gradually narrowed to a slender apex or base.
- Auricle.* An ear. Applied to earlike lobes at the base of blades and to the small lobes at the summit of the sheath in *Hordeae*.
- Auriculate.* Provided with ears.
- Awn.* A slender bristle at the end or on the back or edge of an organ. In grasses the awn is usually a continuation of the midnerve (sometimes also of the lateral nerves) of the glumes or lemmas, rarely of the palea.
- Axil.* The angle between an organ and its axis. Applied especially to the angle between a leaf and its stem and between a branch or pedicel and its axis. *Axillary.* Growing in an axil.
- Axis.* The main stem of an inflorescence, especially of a panicle. Compare *rachis*.
- Barbed.* Furnished with retrorse projections. Applied to the spines of *Cenchrus*.
- Beak.* A hard point or projection. Applied to seeds and fruits.
- Bearded.* Furnished with long stiff hairs, as the nodes of *Andropogon barbinodis*, the callus of *Stipa spartea*, the throat of the sheath of *Sporobolus cryptandrus*, and the main axils of the panicle of *Eragrostis spectabilis*.
- Bifid.* Two-cleft or two-lobed, applied to the summit of glumes, lemmas, and paleas. The lemmas of *Bromus* are usually bifid at apex.
- Blade.* The part of a leaf above the sheath.
- Bract.* The reduced leaves of the inflorescence and upper part of a shoot. Compare scale.
- Branch.* A lateral stem. Applied to the foliage stems or culms, and to the lateral stems of an inflorescence. *Branchlet.* A branch of the second or higher order. In open much-branched panicles the main branches from the axis are branches of the first order, the branchlets from these are branches of the second order and so on.
- Bristle.* A stiff slender appendage likened to a hog's bristle. An awn is a kind of bristle. In grasses the term is applied to the modified branchlets at the base of the spikelets in *Setaria* and allied genera, and to the prolongation of the rachis in *Panicum*, sect. *Paurochaetium*, and a few other groups.
- Bulb.* A subterranean bud with fleshy scales like the onion. The so-called bulbs of grasses are corms (which see). *Bulbous.* Swollen at base like a bulb or corm. Said of the base of the stem of some species of *Melica*, *Phleum*, *Phalaris*, and so on.
- Bulblets.* Small bulbs or corms. Applied also to the proliferous buds in the inflorescence of certain grasses, as *Poa bulbosa*, proliferous forms of *P. arctica*, *P. alpina*, and others.
- Callus.* The indurate downward extension of the mature lemma in *Stipa*, *Aristida*, and some other genera. Morphologically, such a callus is a part of the rachilla. In *Heteropogon* and other *Andropogoneae* the callus is an oblique part of the rachis which extends downward from the spikelet. In *Chrysopogon* the callus is a part of the peduncle. The term callus is also applied to the thickened lower joint and first glume of *Eriochloa* (callus, a thickened part). *Callus hairs.* The hairs at the base of the floret of *Calamagrostis* and some other genera.
- Canescent.* Gray-pubescent or hairy.

- Capillary*. Very slender or hairlike.
- Capitate*. In a globular cluster or head.
- Carinate*. Keeled. Said of glumes, lemmas, and other parts when flattened laterally, with a sharp keel.
- Cartilaginous*. Hard and tough but elastic, like cartilage.
- Caryopsis*. The grain or fruit of grasses. The seed coat is grown fast to the pericarp as in the grain of wheat or corn. In a few grasses the seed is free within the pericarp, as in *Sporobolus* and *Eleusine*.
- Cespitose*. Tufted; several or many stems in a close tuft.
- Chartaceous*. Having the texture of writing paper.
- Ciliate*. Fringed with hairs on the margin (like an eyelash). *Ciliolate*. Minutely ciliate.
- Circinate*. Coiled from the top downward.
- Clavate*. Club-shaped; gradually thickened upward, and more or less circular in cross section.
- Cleistogamous*. Applied to flowers or florets when fertilized without opening. *Cleistogene*. A cleistogamous flower, such as found in *Triplasis* and *Danthonia*.
- Collar*. The area on the outer side of a leaf at the junction of sheath and blade.
- Column*. The lower undivided part of the awns of certain species of *Aristida*; the lower twisted segment of the awn in *Andropogoneae*.
- Compact*. Said of closely flowered inflorescences. Compare dense.
- Compressed*. Flattened laterally, as the compressed spikelets of *Uniola latifolia* and the compressed sheaths of *Andropogon virginicus*. If the organ is also sharply keeled, it is said to be compressed-keeled.
- Conduplicate*. Folded together lengthwise with the upper surface within, as in the blades of many grasses.
- Continuous*. Said of the rachis or other organ which does not disarticulate. The opposite of articulate or disarticulating.
- Contracted*. Said of inflorescences that are narrow or dense, the branches short or appressed. The opposite of open or spreading.
- Convex*. Rounded on the surface. Said especially of glumes and lemmas that are rounded on the back instead of keeled.
- Convolute*. Rolled longitudinally. Said mostly of blades, one edge being inside and the other outside.
- Cordate*. Heart-shaped. Said mostly of the base of blades. *Cordate-clasping*. Heart-shaped at base with the lobes overlapping around the stem.
- Coriaceous*. Leathery in texture.
- Corm*. The hard swollen base of a stem. In *Melica* the corm is a single enlarged lower internode. In *Panicum bulbosum* several internodes are involved. Compare *bulb*.
- Crown*. The persistent base of a tufted perennial herbaceous grass. Also the hard ring or zone at the summit of some species of *Stipa*. The "pappuslike crown" of dissected teeth is mentioned under *Pappophorum*.
- Culm*. The jointed stem of grasses.
- Cuneate*. Wedge-shaped with the narrow part below.
- Cuspidate*. Tipped with a sharp short rigid point.
- Deciduous*. Falling away, as the awn of *Oryzopsis*, the spikelets of some species with articulate pedicels, and the blades of some bamboos. The opposite of persistent.
- Decumbent*. Curved upward from a horizontal or inclined base. Said of stems or culms.
- Decurrent*. Extending down an organ below the insertion. Said especially of ligules decurrent on the margins of the sheath.
- Dehiscence*. Spontaneous opening of an organ, as the opening of anthers to let out the pollen.
- Dense*. Said of inflorescences in which the spikelets are crowded. The opposite of open or loose. Compare *compact*.
- Depauperate*. Reduced or undeveloped. Said especially of impoverished or dwarfed plants below the average size.
- Diffuse*. Open and much-branched. Said of panicles.
- Digitate*. Several members arising from the summit of a support. Said especially of racemes or spikes from the summit of a peduncle, as in *Digitaria* and *Cynodon*.
- Dioecious*. Unisexual, the two kinds of flowers on separate plants, as in *Buchloë*.
- Disarticulating*. Separating at maturity. Compare *articulate*.
- Distichous*. Conspicuously two-ranked, as the leaves of *Distichlis* and *Zea*.
- Divaricate*. Widely and stiffly divergent as the branches of certain open panicles (e.g., *Oryzopsis hymenoides*).
- Dorsal*. Relating to the back of an organ.
- Dorsiventral*. With a distinct upper and lower surface. Said of shoots bearing broad flat blades in a horizontal position, the blades turned into the same plane.
- Drooping*. Erect to spreading at base but inclining downward above, as the branches of a panicle.
- Ellipsoid*. An elliptic solid. Said of the shape of panicles, spikelets, and fruits.
- Elliptic*. Shaped like an ellipse. Said of blades and other flat surfaces.
- Elongate*. Narrow, the length many times the width or thickness.
- Emarginate*. Notched at the apex.
- Equitant*. Astride. Said of approximate compressed-keeled sheaths or blades at the base of a culm that infold each other like the leaves of *Iris*.
- Erose*. Irregularly notched at apex as if gnawed. Said of glumes and lemmas.
- Excurrent*. Running beyond. The midnerve is excurrent from the lemma as an awn in many grasses.
- Exserted*. Protruding. The awns of some

- species of *Calamagrostis* are exerted, protruding beyond the spikelet.
- Falcate.** Scimitar-shaped, curved sidewise and flat, tapering upward. Said of certain asymmetric blades.
- Fascicle.** A little bundle or cluster. Said of clustered leaves, branches of a panicle, and spikes or racemes on an axis.
- Ferruginous.** Rust-colored.
- Fertile.** Capable of producing fruit, having pistils. A fertile floret may be pistillate or perfect.
- Fibrillose.** Furnished with fibers. Said especially of the old basal sheaths of some grasses.
- Filiform.** Threadlike.
- Fimbriate.** Fringed, the hairs longer or coarser as compared with ciliate.
- Flabellate.** Fan-shaped. Said of the lemmas of *Neostapfia* and the inflorescence of *Miscanthus sinensis*.
- Flexuous.** Bent alternately in opposite directions.
- Floret.** The lemma and palea with included flower (stamens and pistil). Florets may be perfect, staminate, pistillate, neuter, sterile, and so on.
- Folded.** Conduplicate. Said chiefly of blades.
- Fruit.** The ripened pistil. In grasses the fruit is usually a caryopsis. The term fruit is also applied to the caryopsis and parts that may enclose it permanently at maturity. In *Panicum* the indurate fertile lemma and palea with the enclosed caryopsis is the fruit. In *Cenchrus* it is the entire bur.
- Fuscous.** Dusky, brownish gray.
- Fusiform.** Spindle-shaped. A solid that is terete in the middle and tapering toward each end.
- Genuiculate.** Bent abruptly. Said of awns and of the lower nodes of the culm.
- Gibbous.** Swollen on one side, as the second glume of *Sacciolepis*.
- Glabrous.** Without hairs of any sort.
- Gland.** A protuberance or depression, usually minute, that secretes, or appears to secrete, a fluid. **Glandular.** Supplied with glands. The glands may be depressed as in *Eragrostis cilianensis* and *Heteropogon melanocarpus*.
- Glaucous.** Covered with a waxy coating that gives a blue-green color as in the leaf of the cabbage, and the bloom of the grape.
- Glomerate.** Collected in heads.
- Glumes.** The pair of bracts at the base of a spikelet.
- Gregarious.** Growing in groups or masses.
- Herbaceous.** Having the characters of an herb; opposed to woody; thin in texture and green in color, as the herbaceous lemmas of *Poa*.
- Hirsute.** Pubescent with straight rather stiff hairs. *Hirsutulous*, *hirtellous*. Minutely hirsute.
- Hispid.** Pubescent with stiff or rigid hairs. *Hispidulous*. Diminutive of hispid.
- Hyaline.** Thin and translucent or transparent.
- Imbricate.** Overlapping, as the lemmas in many spikelets.
- Implicate.** Tangled, as the branches of the panicle of *Panicum implicatum*.
- Indurate.** Hard. Compare chartaceous and coriaceous.
- Inflated.** Puffed up, bladderly.
- Inflexed.** Turned in at the margins. Said especially of the margin of the glumes or lemmas in some species.
- Inflorescence.** The flowering part of a plant.
- Innovation.** The basal shoot of a perennial grass.
- Internerves.** The spaces between the nerves. Said of glumes and lemmas.
- Internode.** The part of a stem between two successive nodes.
- Interrupted.** The continuity broken. Said especially of dense inflorescences whose continuity is broken by gaps.
- Involucre.** A circle of bracts below a flower or flower cluster. In grasses applied to the cluster of bristles or sterile branchlets below the spikelets in *Pennisetum* and a few other genera, and to the bony head of *Coix*.
- Involute.** Rolled inward from the edges, the upper surface within. Said of blades.
- Joint.** The node of a grass culm. The internode of an articulate rachis.
- Keel.** The sharp fold at the back of a compressed sheath, blade, glume, or lemma. The palea and sometimes the glumes and lemmas may be two-keeled. Keel is used because of the similarity to the keel of a boat.
- Lacerate.** Torn at the edge or irregularly cleft, as in some ligules.
- Lanate.** Woolly, clothed with long tangled hairs.
- Lanceolate.** Rather narrow (surface), tapering to both ends, the broadest part below the middle.
- Laterally** (compressed). Flattened from the sides, as certain spikelets, glumes, and lemmas.
- Lax.** Loose. Said of a soft or open inflorescence and of soft or drooping foliage.
- Leaf.** The lateral organ of a stem, in grasses consisting of sheath and blade.
- Lemma.** The bract of a spikelet above the pair of glumes.
- Ligule.** The thin appendage or ring of hairs on the inside of a leaf at the junction of sheath and blade.
- Linear.** Long and narrow with parallel sides. Said of surfaces, such as a blade. Said also of spikelets and other organs, having in mind the shape of a longitudinal section.
- Lobe.** A segment of an organ, usually rounded or obtuse. Applied especially to the divisions of a cleft lemma.
- Loose.** Open. Said of panicles. The opposite of dense or compact.
- Membranaceous.** Thin, like a membrane.

- Monocious*. Unisexual, the two kinds of flowers on the same plant, as in *Zea* and *Zizania*.
- Mucro*. A minute awn or excurrent midnerve of an organ. *Mucronate*. Provided with a mucro.
- Navicular*. Boat-shaped. Shaped like the bow of a canoe. Applied especially to the tip of blades.
- Nerve*. The vascular veins (mostly longitudinal) of the blades, glumes, and lemmas.
- Neuter*. Without stamens or pistils. Said of florets or spikelets.
- Nodding*. Inclined somewhat from the vertical. Said of panicles.
- Node*. The joint of a culm.
- Nodulose*. Roughened by minute knots.
- Ob-*. A prefix meaning inversely, as obovate.
- Oblong*. Longer than wide, with parallel sides, but not so long as linear. Applied also to panicles and other parts, having in mind a longitudinal section.
- Obsolete*. Almost wanting. Applied to organs usually present.
- Obtuse*. Rounded at the apex. Contrasted with acute.
- Open*. Loose. Said of panicles. Opposite of dense or compact.
- Oval*. Broadly elliptic.
- Ovate*. The shape of the longitudinal section of an egg, broadest below the middle.
- Ovoid*. An egg-shaped solid.
- Palea*. The inner bract of a floret.
- Panicle*. An inflorescence with a main axis and subdivided branches. It may be compact and spike-like (*Phleum pratense*) or open (*Avena sativa*).
- Papery*. See chartaceous.
- Papilla*. A minute nipple-shaped projection.
- Papillose*. Bearing papillae. *Papillose-pilose*. Bearing stiff hairs arising from papillae.
- Pappus*. In grasses mentioned under *Pappophorum*, referring to the awns as forming a pappuslike crown, similar to the pappus in certain species of *Compositae*.
- Pectinate*. Comblike. Used especially with some species of *Bouteloua* where the spikelets are set close together, parallel and divergent from the rachis like the teeth of a comb.
- Pedicel*. The stalk of a spikelet. *Pedicellate*. Having a pedicel. Opposed to sessile.
- Peduncle*. The stalk or stem of an inflorescence. *Peduncled*. Having a peduncle.
- Pendent*. Hanging down.
- Perennial*. Lasting more than 1 year. Applied to grasses in which the underground parts last more than 1 year; and to woody culms to distinguish them from those which die to the ground (herbaceous) even though the underground parts are perennial.
- Perfect*. Applied to flowers having both stamens and pistil.
- Pericarp*. The ripened walls of the ovary when it becomes a fruit.
- Persistent*. Remaining attached, either after other parts have been shed, or for a considerable period. The paleas of certain species of *Eragrostis* persist after the fall of the lemmas. Also used as the opposite of deciduous.
- Petiole*. The stalk of a leaf blade. Used with the leaves of many bamboos and with some other broadleaved species in which the blade contracts into a petiole. *Petiolate*. Having a petiole.
- Pilose*. Pubescent with soft straight hairs.
- Pistillate*. Applied to flowers bearing pistils only and to an inflorescence or a plant with pistillate flowers.
- Pitted*. Marked with small depressions or pits. Applied to the fruit (fertile lemma) of certain species of *Olyra*. Also applied to the pinhole depression in the glume of certain species of *Andropogoneae*.
- Plicate*. Folded in plaits lengthwise as the blades of *Setaria* sect. *Ptycophyllum*.
- Plumbeous*. Lead-colored, greenish drab, as the spikelets of *Eragrostis ciliaris*.
- Plumose*. Feathered, having fine hairs on each side. Said chiefly of awns and slender teeth.
- Proliferous*. Bearing vegetative buds or bulblets in the inflorescence. Compare *bulblets*.
- Pruinose*. Having a waxy powdery secretion on the surface. Having a more pronounced bloom than when glaucous.
- Puberulent*. Diminutive of pubescent. Minutely pubescent.
- Pubescent*. Covered with hairs. Applied especially when the hairs are short and soft. *Pubescence*. A hairy covering.
- Pulvinus*. The swelling at the base of the branches of some panicles which cause them to spread.
- Pustulose*. Blistery, furnished with pustules or irregularly raised pimples, as in the spikelets of *Panicum angustifolium*. Not as definitely roughened as papillose.
- Pyramidal*. Pyramid-shaped. Applied sometimes to panicles that are actually conical.
- Pyriiform*. Pear-shaped. Obovoid with attenuate base. Applied to the shape of spikelets.
- Raceme*. An inflorescence in which the spikelets are pediceled on a rachis. *Racemose*. In racemes.
- Rachilla*. A small rachis. Applied especially to the axis of a spikelet.
- Rachis*. The axis of a spike or raceme.
- Reticulate*. In a network. Applied especially to the cross-veining on some spikelets, as *Panicum fasciculatum*.
- Retrorse*. Pointing backward, as the hairs on the sheaths of certain species of *Bromus*.
- Revolvate*. Turned or rolled backward from both edges. Said chiefly of blades.
- Rhizome*. An underground stem; rootstock. The rhizomes of grasses are usually slender and creeping. They bear scales at the nodes, the scales sometimes remote and inconspicuous (*Poa pratensis*), sometimes imbricate and prominent (*Spartina*).

- Rhizomatous*. Having rhizomes or appearing like rhizomes, as the base of a decumbent stem.
- Rosette*. A cluster of spreading or radiating basal leaves, as in the overwintering stage of *Panicum*, sect. *Dichantherium*.
- Rudiment*. An imperfectly developed organ or part. *Rudimentary*. Underdeveloped. Applied also to one or more rudimentary florets at the summit of the spikelet of some genera, as *Melica*, *Bouteloua*, *Chloris*.
- Rugose*. Wrinkled. Said especially of the fruit of some species of *Panicum* and allied groups.
- Saccate*. Bag or sac-shaped, as the second glume of *Sacciolepis*.
- Scabrous*. Rough to the touch. Covered with minute points, teeth, or very short stiff hairs. *Scaberulous*. Minutely scabrous.
- Scale*. The reduced leaves at the base of a shoot. Said especially of the reduced or rudimentary leaves on a rhizome.
- Scarious*. Thin, dry, and membranaceous, not green.
- Secondary*. Subordinate; below or less than primary. Said of branches arising from primary branches.
- Secund*. One-sided or arranged along one side.
- Self-pollinated*. Pollinated in the bud or by pollen from the same flower. The opposite of cross-pollinated.
- Serrate*. Saw-toothed; having sharp teeth. *Serrulate*. Minutely serrate.
- Sessile*. Without a pedicel or stalk. The opposite of pediceled. Said of blades, spikelets, and other organs.
- Setaceous*. Bristlelike. Said especially of slender teeth attenuate to an awn.
- Sheath*. The lower part of a leaf that encloses the stem.
- Sinuuous*. Wavy.
- Smooth*. Not rough to the touch. Compare glabrous, without hairs but which may be rough to the touch.
- Spatha*. A sheathing bract of the inflorescence found especially in the Andropogoneae.
- Spike*. An unbranched inflorescence in which the spikelets are sessile on a rachis. *Spike-like*. A dense panicle in which the pedicels and branches are short and hidden by the spikelets as in *Phleum*.
- Spikelet*. The unit of the inflorescence in grasses, consisting of two glumes and one or more florets.
- Spreading*. Having an outward direction. Said especially of the branches of a panicle when they lie between ascending and the horizontal direction (right angles).
- Squarrose*. Spreading or recurved at the tip. Said of the tips of lemmas.
- Stamen*. The part of the flower that bears the pollen. *Staminate*. Containing stamens only. Also applied to an inflorescence or a plant with staminate flowers.
- Sterile*. Without pistils. A sterile floret may be staminate or neuter. It may even lack a palea, and consist of nothing but a lemma.
- Stipe*. A minute stalk to an organ. Applied especially to a pistil. Also sometimes to the prolongation of a rachilla as in *Calamagrostis*. *Stipitate*. Having a stipe.
- Stolon*. A modified propagating stem above ground creeping and rooting or curved over and rooting at the tip. *Stoloniferous*. Bearing stolons.
- Stramineous*. Straw-colored, pale yellow.
- Striate*. Marked with fine parallel lines or minute ridges.
- Strict*. Stiffly upright.
- Strigose*. Rough with short stiff hairs; harshly pubescent.
- Sub-*. A prefix to denote somewhat, slightly, or in a less degree; as subacute, somewhat acute.
- Subtend*. To be below, as a bract subtends a branch in its axil.
- Sulcate*. Awl-shaped.
- Succulent*. Fleshy or juicy.
- Sulcate*. Grooved or furrowed. Said chiefly of stems, sheaths, and slender blades.
- Tawny*. Pale brown or dirty yellow.
- Teeth*. Pointed lobes or divisions.
- Terete*. Cylindric and slender, as the usual unflattened stems or culms of grasses.
- Tessellate*. The surface marked with square or oblong depressions.
- Triad*. A group of 3, applied to the central and 2 lateral spikelets in *Hordeum* and to ultimate racemes in *Sorghum*.
- Trifid*. Divided into three parts as the awns of *Aristida*.
- Truncate*. Ending abruptly, as if cut off horizontally.
- Tuberculate*. Furnished with small projections.
- Turgid*. Swollen, as the pulvini of a panicle during anthesis.
- Unilateral*. One-sided or turned to one side.
- Unisexual*. Said of flowers containing only stamens or only pistils.
- Verticillate*. In verticils or whorls.
- Villous*. Pubescent with long soft hairs.
- Virgate*. Straight and erect; wand-shaped.
- Web*. The cluster of slender soft hairs at the base of the floret in certain species of *Poa*.
- Whorl*. A cluster of several branches around the axis of an inflorescence.
- Wing*. A thin projection or border; for example, the thin borders on the rachis of certain species of *Digitaria* and *Paspalum*.