

CYCLOPEDIA OF AMERICAN HORTICULTURE

COMPRISING SUGGESTIONS FOR CULTIVATION OF HORTICULTURAL PLANTS, DESCRIPTIONS OF THE SPECIES OF FRUITS, VEGETABLES, FLOWERS AND ORNAMENTAL PLANTS SOLD IN THE UNITED STATES AND CANADA, TOGETHER WITH GEOGRAPHICAL AND BIOGRAPHICAL SKETCHES

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elliptic, acuminate, irregularly marked with yellow along the midrib; fls. crimson, in axillary whorls; corolla pubescent. Habitat? B.R. 15:1227. Lowe 45. (B.M. 1870 shows a variety with reddish brown coloring).

GRASS (*Gramineæ*). Annual or perennial herbs (some bamboos woody), mostly tufted or decumbent, rarely climbing, often creeping and rooting at the base. True roots fibrous. Stems (culms) simple or branching, usually hollow (wheat), sometimes solid (maize) between the nodes. Leaves springing from the nodes, alternate, in two vertical rows on the stem; the sheaths closed

perfect or imperfect, destitute of true calyx or corolla. Between each floral glume and flower are usually 2 (rarely 3) minute hyaline scales (lodicules). Stamens 3 (rarely 1, 2 or more than 3); pistil 1: ovary 1-celled, 1-ovuled; styles 2 (rarely 1 or 3), usually plumose: fruit (grain or caryopsis) seed-like, often enclosed by the palea and its floral glume. Seed erect, closely covered by the thin pericarp; embryo small, on one side of the base of the endosperm. Figs. 981-984 show the structure of various Grass flowers.

Perennial Grasses, such as those commonly grown for meadow, pasture or lawn, produce large numbers of sterile shoots that bear leaves from very short stems, but no flowers. There are many widely different plants, which in popular language have the name "grass" attached to them, such as knot-grass, rib-grass, cotton-grass, sea-grass, cel-grass, sedge-grass, scorpion-grass, but these do not belong to the family here under consideration. Neither are the clovers and their allies, or the sedges and rushes, to be called Grasses. No other plants are truly entitled to this name, excepting those answering to the description above given.

The plants most likely to be mistaken for Grasses are the sedges (*Cyperaceæ*), of which there are large numbers in great variety frequently found on wet land. The best popular way to distinguish Grasses from sedges is this: the leaves of sedges are arranged on 3 sides or angles of the stem, while on Grasses they are found on 2 sides, alternate and 2-ranked. In making use of this test, care must be taken to select well grown, erect stems. Most sedges have solid stems and most Grasses have hollow stems. To learn to distinguish plants of the Grass family is easy, but to discriminate between species is difficult.

Among the species most commonly known are timothy, red top, June-grass, orchard-grass, meadow fox-tail, the fescues, oat-grass, sweet-vernal, quack-grass, Bermuda-grass, sugar cane, chess, and the cereals, such as wheat, barley, rye, oats, rice, sorghum, Indian corn. In number of species the Grass family occupies the fifth place with 3,500, while the composite, legumes, orchids and madderworts are larger. In number of individuals, the Grasses excel any other family. Seed plants are arranged in 200 to 220 families, and of all these the true Grasses are of greatest importance to man. In fact, they are of more value as food for man and domestic animals than all other kinds of vegetation combined. None of these families is more widely distributed over the earth's surface, or is found in greater extremes of climate or diversity of soil.

The species are very numerous in tropical regions, where the plants are usually scattered, while in a moist, temperate climate, though the species are less numerous, the number of plants is enormous, often clothing vast areas. Where soil is thin or moisture insufficient, the Grasses grow in bunches more or less isolated. Plants of one section of the family *Panicaceæ* predominate in the tropics and warm temperate regions, while plants of the other section, *Poaceæ*, predominate in temperate and cold regions.

Overstocking dry grazing districts checks the better Grasses, destroying many of them, and encourages the bitter weeds which multiply and occupy the land.

A Grass extends its domain by running rootstocks, by liberating seeds enclosed in the glumes, which are caught by the breeze, by some passing animal, or the nearest stream; the twisting and untwisting of awns bury some of them in cracks, crevices or soft earth. In case a growing stem is thrown down for any reason, several of the lower nodes promptly elongate on the lower side and thus bring the top into an erect position. Each sheath supports and holds erect the tender lower portion of the internode, where it is soft and weak; it also protects the young branches or panicles. Thrifty blades of Grasses suitable for pasture and lawn elongate from the lower end, so that when the tips are cut off the leaves do not cease to elongate, but renew their length. When exposed to sun or dry air, the blades develop a thicker epidermis, and, by shrinking of some of the delicate bulliform cells of the upper epidermis, they diminish their surface as they roll their edges inward or bring them together, like closing an open book. When the plant is in flower the minute and delicate lod-

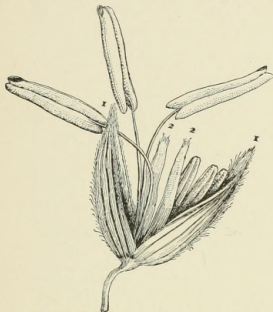


983. Spike of a Grass (rye), containing many flowers.

when young, but usually split down one side in maturing; ligule a thin tongue-like growth at the apex of the sheath; blade entire, parallel-veined, commonly long and narrow; a 2-keeled membranous prophyllum (or leaf) always standing between each branch and the main axis. Spikelets in panicles, racemes or spikes, usually consisting of 2 (rarely 0, 1, or more than 2) chaffy empty glumes at the base of a short axis (rachilla), which supports one or more floral glumes, in the axil of each of which is commonly 1 flower. Flowers

eules become distended just in time to spread the glumes and liberate the stamens.

Grasses are not so much employed for ornamenting homes as their merits warrant. By selecting, some can be found suited to every week of the growing season, though many of them are in their prime during June, the month of roses. Wild rice (*Zizania*) is fine for rich soil in the margins of ponds, and masses of reed grass for deep beds of moist muck. For massing or for borders the following and others are stately: *Arundo Do-*



984. Staminate spikelet of a Grass (maize).

Showing two florets, one of which (with three stamens) is expanded. 1, 1, empty glumes; 2, 2, paleas. Enlarged.

nar, *A. conspicua*, maize, pampas grass, *Eulalia*, ribbon grass, *Andropogon formosus*, *A. Halapensis*, *Asperella Hystrix*, *Tripsacum*. For glaucous blue-green, use *Elymus arenarius*, *Festuca glauca* and *Poa casia*. For potting and borders, there are striped varieties of *Dactylis*, *Anthoxanthum*, *Alopecurus*, *Holcus lanatus*, *H. mollis*, *Poa trivialis*, *Phleum pratense*; and others may soon be produced. For table decoration nothing is better than the elegant, airy panicles of large numbers of wild Grasses, such as species of *Poa*, *Koeleria*, *Eatonia*, *Panicum*, *Paspalum*, *Eragrostis*, *Muhlenbergia*, *Bromus*, *Festuca*, *Agrostis*, *Deschampsia*, *Uniola*, *Briza*, *Cinna pendula*. For large halls and exhibitions, what surpasses sheaves of wheat, barley, rice, oats or any of the wild Grasses? For decoration, Grasses should be cut before ripe, dried in the dark in an upright position, and may be used in that condition or dyed or bleached. For paths, nothing is more pleasing than strips of well mown lawn.

Drainage keeps out sedges and encourages the better Grasses; manure and irrigation help the best Grasses to choke and diminish most weeds. Enough has already been done to show that rich rewards are sure for him who patiently and intelligently attempts to improve Grasses for any purpose whatever by selection and crossing. Quack-grass is excellent for holding embankments; *Amphiphila arenaria* for holding drifting sands. The Grass family furnishes its full quota of weeds, among them quack-grass, crab-grass, chess, June-grass, sand-bur, stink-grass.

Turf-forming Grasses are those that spread freely by creeping rootstocks, such as June-grass, quack-grass, Bermuda-grass, Rhode Island bent and red-top, while most others are more or less bunchy. For northern regions not subject to severe droughts, sow Rhode Island bent and June-grass both, or either one alone; for northern regions, which are liable to suffer from dry weather, sow June-grass and plant Bermuda-grass. These two on the same ground supplement each other in different kinds of weather, securing a green carpet during every part of each growing season. W. J. BEAL.

GRASSES, POPULAR NAMES OF. There are few Grasses which hold commanding positions as specimen plants, although the agricultural values of Grasses are transcendent. Some of the commoner vernacular Grass names are given below, with references to the proper genera: **Animated Oats**, *Avena*. **Artificial G.**, sometimes used for certain forage plants, as sorghum, but also leguminous plants, as clover, lucerne, sainfoin. **Awnless Bromes G.**, *Bromus inermis*. **Beach G.**, *Amphiphila arenaria*. **Bear G.**, unusual name for *Yucca filamentosa*. **Beard G.**, *Andropogon*; also *Polypogon Monspeliensis*. **Bengal G.**, *Setaria Italica*. **Bent G.**, *Agrostis*. **Bermuda G.**, *Capriola Dactylon*. **Blue-eyed G.**, *Sisyrinchium*. **Blue G.**, *Poa*. **Blue Joint G.**, *Calamagrostis Canadensis*. **Bog G.**, *Carex*. **Bristly Foxtail G.**, *Setaria magna*. **Brome G.**, *Bromus*. **Buffalo G.**, *Duchloa dactyloides*. **Canada Blue G.**, *Poa compressa*. **Canary G.**, *Phalaris Canariensis*. **Cat-tail G.**, *Phleum pratense*. **China G.**, *Bahmeria nivea*. **Citronella G.**, *Andropogon Nardus*. **Cotton G.**, *Eriophorum*. **Couch G.**, *Agropyrum repens*. **Crab G.**, *Elyusine* and *Panicum sanguinale*. **Creeping Bent G.**, *Agrostis stolonifera*. **Crested Dog's Tail**, *Cynosurus cristatus*. **Deer G.**, *Rhexia Virginica*. **Dog's Tail G.**, *Cynosurus*. **Eel G.**, *Vallisneria spiralis*. **English Rye G.**, *Lolium perenne*. **Esparto G.**, *Stipa tenacissima*. **Feather G.**, *Stipa pennata*. **Feather Sedge G.**, *Andropogon saccharoides*. **Fescue G.**, *Festuca*. **Finger-comb G.**, *Dactyloctenium*. **Finger G.**, *Chloris*. **Fowl Meadow G.**, *Poa serotina*. **Fly Away G.**, *Agrostis scabra*. **Four-leaved G.**, *Paris quadrifolia*. **Foxtail G.**, *Alopecurus pratensis*. **Golden Top G.**, *Lamarckia aurea*. **Guinea G.**, *Panicum jumentorum*; also erroneously used for *Andropogon Halapensis*. **Hair G.**, *Agrostis scabra*. **Hare's Tail G.**, *Lagurus ovatus*. **Hassock G.**, *Deschampsia cespitosa*. **Herd's Grass** in New England is timothy (*Phleum pratense*); in Pennsylvania, Florin (*Agrostis vulgaris*). **Holy G.**, *Hierochloa borealis*. **Hungarian G.**, *Setaria Italica*. **Italian Rye G.**, *Lolium italicum*. **Japanese Lawn G.**, *Zoysia pumilus*. **Job's Tears G.**, *Coix*. **Johnson G.**, *Andropogon Halapensis*. **June G.**, *Poa pratensis*. **Kentucky Blue G.**, *Poa pratensis*. **Large Quaking G.**, *Briza maxima*. **Little Quaking G.**, *Briza minor*. **Love G.**, *Eragrostis elegans*. **Lyme G.** of upholstery is *Deschampsia cespitosa*. **Marram G.**, *Amphiphila arenaria*. **Meadow Foxtail G.**, *Alopecurus pratensis*. **Myrtle G.**, *Acorus Calamus*. **Oat G.**, *Arrhenatherum avenaceum*; also various species of *Avena*. **Orchard G.**, *Dactylis glomerata*. **Palm-leaved G.**, *Panicum sulcatum*. **Pampas G.**, *Gynerium*. **Pepper G.**, *Lepidium*; also *Pilularia globulifera*. **Plume G.**, *Erianthus Ravenna*. **Pony G.**, *Calamagrostis stricta*. **Purple Bent G.**, *Calamovilfa brevifolia*. **Quack, Quick, or Quitch G.**, *Agropyrum repens*. **Quaking G.**, *Briza*. **Rattlesnake G.**, *Briza maxima*. **Ray G.**, *Lolium perenne*. **Red Top G.**, *Agrostis vulgaris*. **Reed G.**, *Arundo*, *Bamboo*. **Reed Bent G.**, *Calamagrostis*. **Reed Canary G.**, *Phalaris arundinacea*. **Rescue G.**, *Bromus unioloides*. **Rhode Island Bent G.**, *Agrostis canina*. **Ribbon G.**, *Phalaris arundinacea*, var. *variegata*. **Rough Bent G.**, *Agrostis scabra*. **Roughish Meadow G.**, *Poa trivialis*. **Rough-Stalked Meadow G.**, *Poa trivialis*. **Rye G.**, *Lolium perenne*. **Sand G.**, *Calamovilfa longifolia*. **Scurvy G.**, *Cochlearia officinalis*. **Scutch G.**, *Capriola Dactylon*. **Seacoast Bent G.**, *Agrostis coarctata*. **Seneca G.**, *Hierochloa borealis*. **Sesame G.**, *Tripsacum*. **Sheep's Fescue G.**, *Festuca ovina*. **Silk G.**, *Agrostis scabra*. **Silver Beard G.**, *Andropogon argenteus*. **Sour G.**, local name for *Rumex Acetosella*. **Squirrel-tail G.**, *Hordeum*. **Star G.**, *Callitriche*; also locally for *Hyposis* and *Aletris*. **Striped G.**, *Phalaris arundinacea*, var. *variegata*. **Sweet-scented Vernal G.**, *Anthoxanthum odoratum*. **Tall Meadow Oat G.**, *Arrhenatherum elatius*. **Tickle G.**, *Agrostis scabra*. **Tear G.**, *Coix*. **Lachryma-Jobi**. **Texas Blue G.**, *Poa arachnifera*. **Timothy**, *Phleum*. **Tufted Hair G.**, *Deschampsia cespitosa*. **Vanilla G.**, *Hierochloa borealis*. **Viper's G.**, *Scorzonera*. **White Bent G.**, *Agrostis alba*. **Whitew G.**, *Draba*, especially *D. verna* and *Saxifraga tridactylites*. **Wood Meadow G.**, *Poa nemoralis*. **Woolly Beard G.**, *Erianthus*. **Worm G.**, *Spigelia*; also *Sedum album*. **Yellow-eyed G.**, *Xyris*. **Zebra G.**, *Miscanthus Sinensis*.