

NOXIOUS WEEDS OF TENNESSEE
(For In-Service Use)by
John L. Kazda, Conservation Agronomist

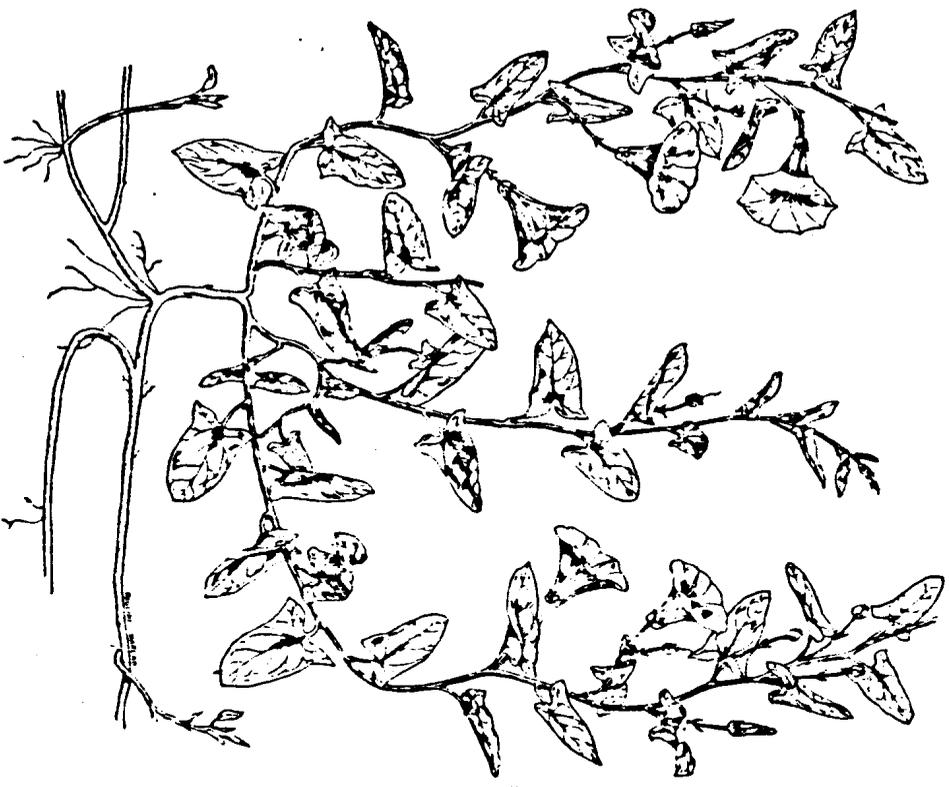
The Tennessee Department of Agriculture maintains a list of Noxious Weeds. These are weeds that must be controlled. Several Statutes and program policies such as the Tennessee Seed Law of 1972 and the Conservation Reserve Program require control of these weeds. The information in this job sheet is designed to help in the identification of noxious weeds.

TENNESSEE NOXIOUS WEED LIST
TENNESSEE DEPARTMENT OF AGRICULTUREName

Field Bindweed (*Convolvus arvensis*)
Hedge Bindweed (*Convolvus sepium*)
Crotalaria (*Crotalaria spectabilis*)
Nut Grass (Purple Nutsedge) (*Cyperus rotundus*)
Johnson Grass (*Sorghum halepense*)
Sorghum Alnum (*Sorghum Alnum*)
Thistle, Canada (*Cirsium arvense*)
Cheat or Chess (*Bromus* spp)
Cocklebur (*Xanthium* spp)
Corncockle (*Agrostemma githago*)
Darnel (*lolium temulentum*)
Dodder (*Cuscuta* spp)
Giant Foxtail (*Setaria faberi*)
Horsenettle (*Solanum carolinense*)
Wild Mustard and Turnips (*Brassica* spp)
Plantain, Buckhorn (*Plantago lanceolata*)
Ox-Eye Daisy (*Chrysanthemum leucanthemum*)
Quack Grass (*Agropyron repens*)
Sorrel, Sheep (Red) (*Rumex acetosella*)
Dock (*Rumex* spp)
Wild Onion (*Allium* spp) (Wild garlic)

Field Bindweed!

Description—Field bindweed resembles the common morning glory. The leaves are smaller, however, and more distinctly arrow-shaped. The bell-shaped flowers, approximately one inch in diameter, are white or pinkish white in color with pink markings at the base. The trailing stems attain a length of 2 to 4 feet, having a twisting habit and climb on nearby objects. It is a deep-rooted perennial with an extensive root system.



Morningglory Family — Convolvulaceae

Field bindweed, *Convolvulus arvensis* L. — A twining, rootstock-producing perennial vine; leaves 3/4-2 in. long, smooth or pubescent; flowers 1 or 2, white or pink, 9/16-3/4 in. long on long axillary stems; sepals elliptic to nearly round, 1/8-3/16 in. long; bracts 3/16-3/4 in. below the flower, 1/24-3/8 in. (1-10 mm.) long. Cultivated fields, gardens, and undisturbed places throughout the State. Flowers June to October. A noxious weed. Another troublesome species is Hedge bindweed, *C. sepium* L. Rootstocks of both species are purgative to swine.

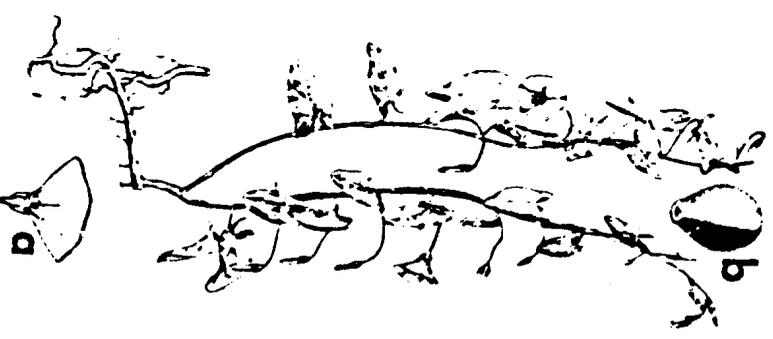


Figure 105. Field bindweed. a) flower, b) seed.

Showy *Crotalaria*

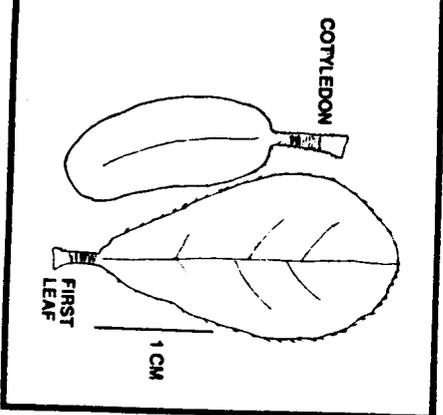
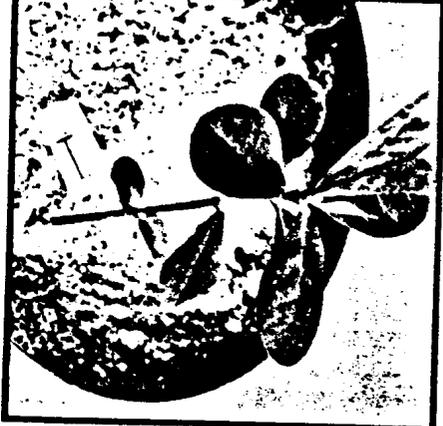
Crotalaria spectabilis Roth
Leguminosae Legume Family



Seedling (Figures 1-3)

Hypocotyl green, becoming maroon basally with maroon splotches near the apex, stout, densely covered throughout with short appressed hairs. (1 and 3) Cotyledon blades bean-shaped, thick, green on the upper surface, light green on the lower surface, midvein evident on the upper surface as a gentle depression and visible on the lower surface as a ridge, no lateral veins evident, usually smooth on both surfaces, occasionally the basal portion of the midvein on the upper surface with short spreading hairs, basal portion of the margin with short spreading hairs, upper surface densely covered with white glands, emitting a slight pealike odor when crushed; petioles short, flattened above, covered with transverse wrinkles and short hairs on both surfaces.

(2 and 3) Leaves alternate; blades green on the upper surface, gray-green on the lower surface, smooth on the upper surface, densely covered with appressed hairs on the lower surface, margins with appressed to ascending hairs, veins visible on the upper surface as shiny green ridges, with a short sharp spiny tip at the apex; petioles short, jointed to the blade, flattened on the upper surface, transversely wrinkled and hairy throughout; bud leaves erect, tightly folded along the midvein, covered with silver hairs on the lower surface. Stem covered with short stout spreading hairs, with vertical ridges formed by downward extensions of the petiole margins.



Mature Plant (Figure 4)

Summer annual, taprooted, herbaceous, 0.5-2.0 m tall. Stem erect, stout, green or purplish, smooth or short-hairy in the young portion becoming smooth with age, waxy, angled. Leaves alternate, simple, large, broadest near the apex and tapering to the base, smooth on the upper surface, densely hairy on the lower surface, with stipules that persist for a short time at the base of the short petioles.

Flowers (Figure 5)

Flowers in racemes at the ends of stems, large, yellow. Fruit a legume, 3-5 cm long, cylindrical, originally green, becoming brown to black at maturity.



Seeds (Figure 6)

Seeds often become loose inside the fruit, 4-6 mm long, kidney-shaped in outline, flattened or lens-shaped in cross section, distinctly basally notched, brown, surface glossy.



Distribution. Found in cultivated fields and occasionally in roadsides, coastal plain and piedmont; NC, SC, GA, VA, ALA, MISS, VA.

Yellow nutsedge
Cyperus esculentus L.

Flathead sedge
Cyperus compressus L.

Purple nutsedge
Cyperus rotundus L.

Cyperaceae Sedge Family

Seedling (Figure 1).

Two or three leaves emerging from the ground simultaneously; blades linear, folded lengthwise, smooth; sheaths tubular, membranaceous, light green, overlapping to form a structure that is remotely triangular in cross section. Bud leaves erect.

There are no reliable characters that distinguish seedlings of these three sedge species.

Mature Plant (Figures 2-6).

Yellow nutsedge: (2) Rhizomatous perennial; tubers at the ends of short rhizomes, globose, with several series of scales or ridges on the surface. Stem slender, smooth, triangular in cross section, occurring singly or in groups of a few. Leaves three-ranked from the base of the plant, yellow-green; blades 2-10 mm wide; ligule lacking; sheath tubular. (3) Flowers in dense yellowish-brown spikelets at the end of the stem; spikelets up to 2.5 mm wide. Achenes three-sided, 1.0-1.5 mm long, elliptic, yellowish brown.

Purple nutsedge: Similar to yellow nutsedge with the following exceptions: (4) Stem and leaves dark green. Leaf blades 2-6 mm wide. Flowers in reddish-brown or purple spikelets. Several tubers along the length of individual rhizomes forming tuber chains. Achenes reddish brown.

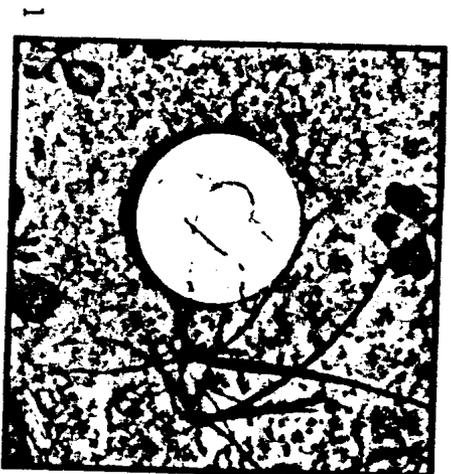
Flathead sedge: Differing from the nutsedges in the following respects: (5) Annual. Stems usually in clusters of many. Leaf blades 2 mm or less wide. (6) Spikelets approximately 3 mm wide, light green with dark-green margins. Root system lacking rhizomes and tubers.

Distribution:

Yellow nutsedge: Found in cultivated and abandoned fields and gardens; throughout the SE.

Purple nutsedge: Found in cultivated fields, gardens, and occasionally in lawns; primarily in the piedmont and coastal plain; NC, SC, GA, FLA, ALA, MISS, TENN.

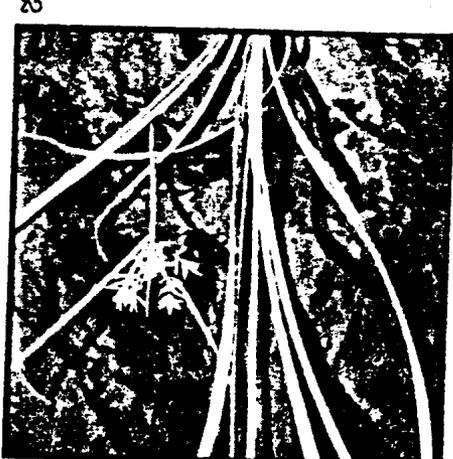
Flathead sedge: Found in sandy cultivated fields and waste areas; piedmont and coastal plain; NC, SC, GA, FLA, ALA, MISS, TENN, VA.



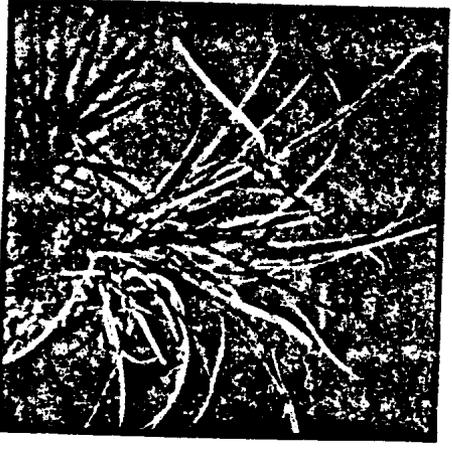
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4



2



5



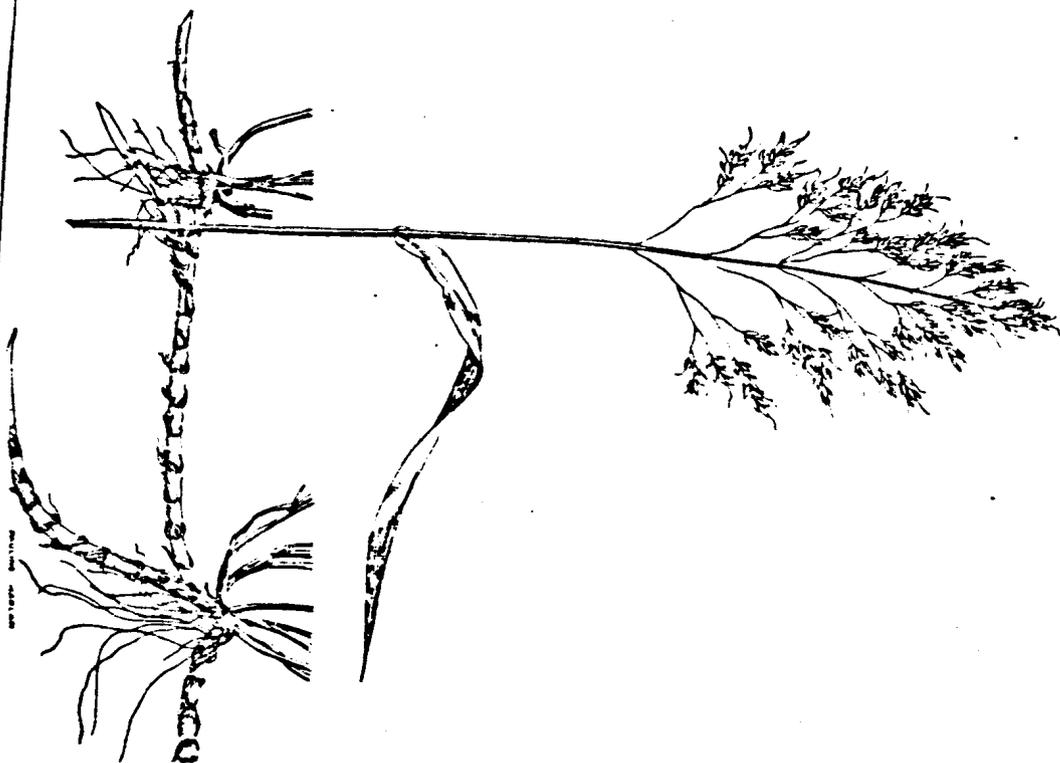
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6

Johnsongrass¹

Description—Johnsongrass often grows to a height of 10 feet. The leaves resemble the leaves of a small corn plant. The seed heads are branched and have a reddish brown color when mature. It is similar in appearance to sudan grass but is a perennial producing numerous heavy underground rootstalks. When first introduced into a field, it appears in bunches or small circular patches.



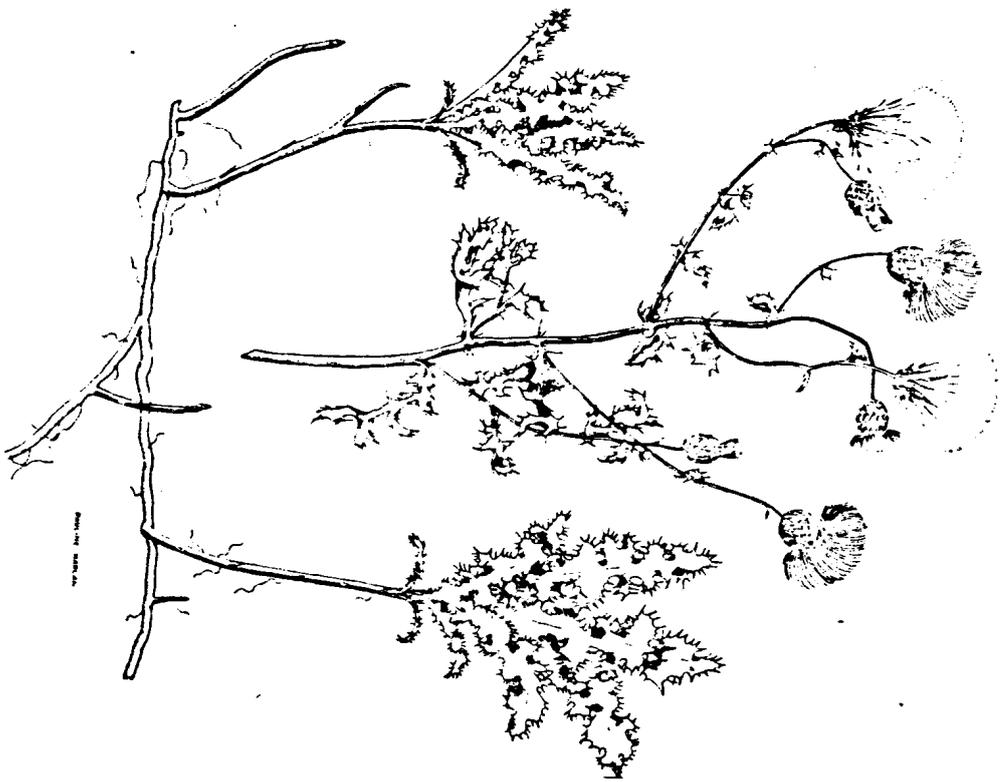
Sorghum halepense.

SORGHUM ALMUM

Description.—Tall, robust, rather closely resembling Johnsongrass in many ways. Coarser, larger stems, often wider leaves, and generally grows taller than Johnsongrass. Heads longer, lax, more spreading, with more branches at whorl. Rhizomes stout, short, and turn up close to crown. No difficulty experienced in killing it out by plowing. Seed shatters very readily. Although seed somewhat larger than that of Johnsongrass, difficult to identify it in intermediate range. Some crossing could be expected to occur with Johnsongrass. Sorghum Aluum accessions exhibit wide range in plant type; some lots more uniform than others. Prussic acid potential equivalent, for most part, to that of Johnsongrass.

Canada Thistle!

Description—Canada thistle is a perennial with spiny leaves. It varies in height from 2 to 6 feet. The flowers are purple, changing to a silvery white upon maturity. Because it spreads by creeping rootstalks, it usually grows in patches. The seeds are oblong, light brown in color and equipped with a downy parachute that causes the seeds to be scattered by the wind. A newer type of Canada thistle is spreading in the state. The leaves of this type are broad with very few spines and the under side of the leaf is gray in color.



CHEAT

Japanese brome, *Bromus japonicus* Thunb. — A tufted winter or spring annual; sheaths and blades soft-hairy; spikelets $\frac{3}{4}$ -1 in. long; fields and pastures throughout the State. Flowers in May and June.

Cheat, *Bromus secalinus* L. — A tufted winter annual; upper sheaths without pubescence, strongly veined; blades pubescent above; flower head up to 8 in. long, the

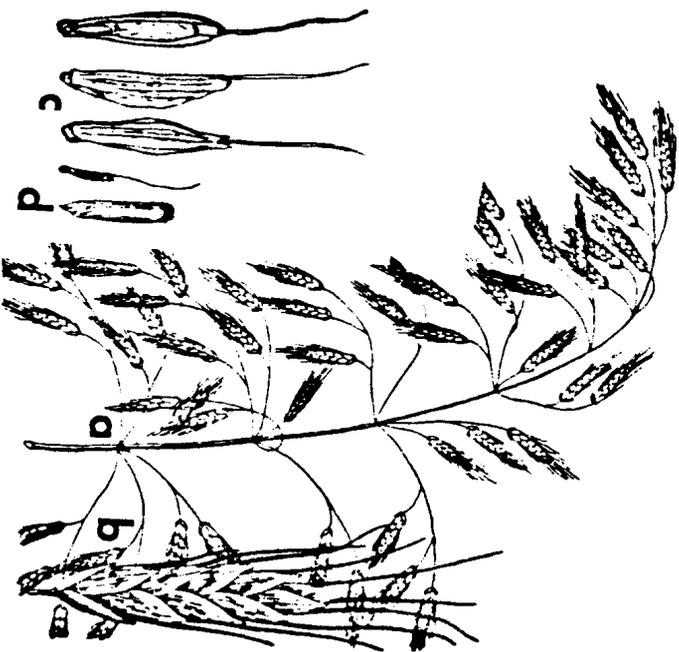


Figure 9. Japanese brome: a) inflorescence $\times \frac{1}{2}$, b) spikelet, c) various views of floret enlarged and natural size, d) enlarged grain. (Gleason in part.)

lemmas without pubescence, $\frac{9}{32}$ - $\frac{11}{32}$ in. (7-9 mm.) long, obscurely 9-veined, their beards $\frac{3}{8}$ - $\frac{1}{2}$ in. long and twisted or widely inclining away from each other; palea distinctly shorter than its lemma.

Undisturbed areas in full sun and upland small grain and hay

branches inclined upward or spreading unequally; lemmas indistinctly 7-veined, $\frac{3}{16}$ - $\frac{5}{16}$ in. long, beard straight or bent twice, $\frac{1}{32}$ - $\frac{1}{4}$ in. (1-6 mm.) long; palea equal to or longer than the lemma, its fringed tip slightly projecting in maturity.

In small grain fields throughout the State, especially in flowers in May.

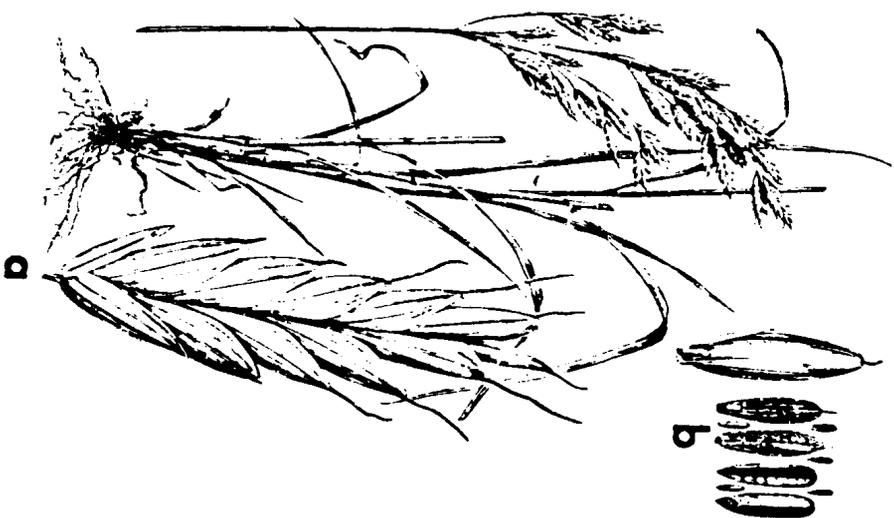
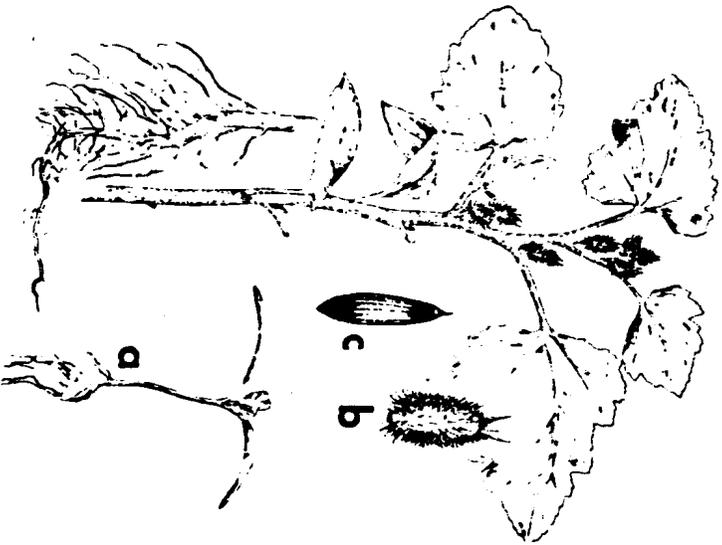


Figure 10. Cheat $\times \frac{1}{4}$. a) spikelet, b) florets and grain enlarged and natural size. (Hitchcock & Chase in part.)

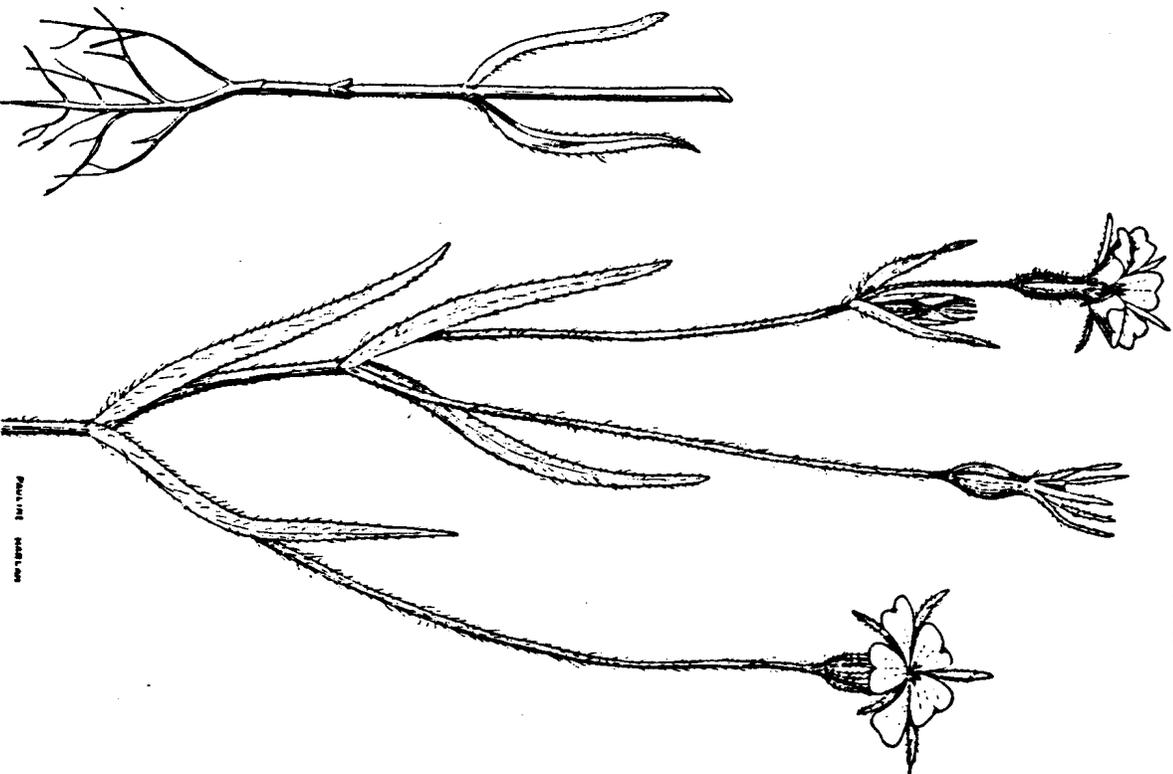
Cocklebur — *Xanthium pensylvanicum* Wallr. — A coarse, summer annual with rough branched stem up to 40 in. tall; leaves rough, the leaf stalks minutely soft-pubescent; fruiting burs pale brown or turning in age, dull or barely lustrous, nearly smooth to densely pubescent; bur covered with many spines on one face; spines glandular-hairy below.

Cultivated fields and fence rows throughout the State. Flowers August to October. Other weedy species are *X. spinosum* L.; *X. chinense* Mill.; *X. indicum* Morrett; *Poison-burs* in seedling stage.



166. Cocklebur. a) seedling. b) bur. c) seed. (Missouri Bulletin 433.)

Corncockle!
Description—Corncockle is a slender, annual plant growing to a height of from 1 to 3 feet. Stems and leaves are densely covered with silky hairs. The flowers, which form at the top of the branches, are pinkish purple with five petals. Seeds of corncockle are black, triangular and about one-half the size of a wheat kernel.



1 *Agrostemma githago*.

Spikelets several-flowered, solitary, placed edgewise to the continuous rachis, one edge fitting to the alternate concavities, the rachilla disarticulating above the glumes and between the florets; first glume wanting (except on the terminal spikelet and rarely in 1 or 2 spikelets in a spike), the second outwardly, strongly 3- to 5-nerved, equaling or exceeding the second floret; lemmas rounded on the back, 5- to 7-nerved, obtuse, acute, or awned. Annuals or perennials, with flat blades and slender, usually flat spikes. Type species, *Lolium perenne*. *Lolium*, an old Latin name for darnel.

Lolium perenne, perennial or English ryegrass, was the first meadow grass to be cultivated in Europe as a distinct segregated species, the meadows and pastures formerly being native species. This and *L. multiflorum*, Italian ryegrass, are probably the most important of the European forage grasses. Both species are used in the United States to a limited extent for meadow, pasture, and lawn. They are of importance in the South for winter forage. In the Eastern States the ryegrasses are often sown in mixtures for parks or public grounds, where a vigorous early growth is required. The young plants can be distinguished from bluegrass by the glossy dark-green foliage. *L. temulentum*, darnel, is occasionally found as a weed in grainfields and waste places. It is in bad repute, because of the presence in the grain of a narcotic poison, said to be due to a fungus. Darnel is supposed to be the plant referred to as the tarax sown by the enemy in the parable of Scripture.

- Glume shorter than the spikelet.
 Lemmas nearly or quite awnless; culms subcompressed 1. *L. PERENNE*.
 Lemmas at least the upper, awned; culms cylindrical 2. *L. MULTIFLORUM*.
 Glume as long as or longer than the spikelet. Annuals.
 Spike flat; spikelets much wider than the rachis.
 Florets plump, 6 to 8 mm. long 3. *L. TEMULENTUM*.
 Florets dorsally compressed, 9 to 10 mm. long 4. *L. PERSICUM*.
 Spike subcylindric; spikelets scarcely wider than the rachis 5. *L. SUBULATUM*.

3. *Lolium temulentum* L. DARNEL.

(Fig. 371.) Annual; culms 60 to 90 cm. tall; blades mostly 3 to 6 mm. wide; spike strict, 15 to 25 cm. long; glume about 2.5 cm. long, as long as or longer than the 5- to 7-flowered spikelet, firm, pointed; florets plump, the lemmas as much as 8 mm. long,

obtuse, awned, the awn 6 to 12 mm. long. ☉ —(Grainfields and waste places, occasional throughout the eastern United States and rather common on the Pacific coast; introduced from Europe. *LOLIUM TEMULENTUM* var. *LEPTOCHAETON* A. Br. Lemmas awnless. ☉ —Washington to California, occasional on the Atlantic coast, Maine to Texas; introduced in Europe.

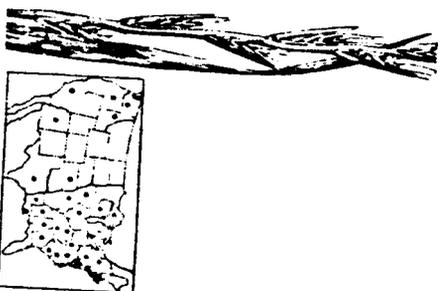
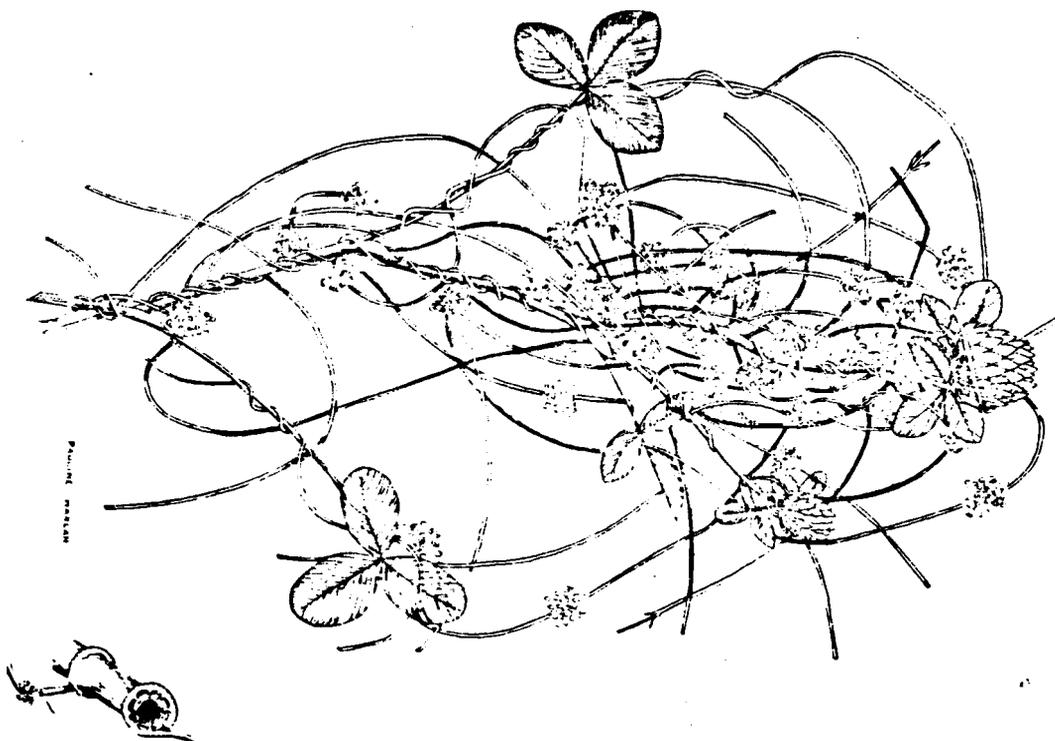


FIGURE 371.—*Lolium temulentum*, X 1/2. (Elliott 771, Oreg.)

Description—Dodder is a parasitic plant on clover, alfalfa and lespedeza. The tender vines have a twining habit of growth, are yellow in color, with small, white, or greenish white flowers forming in clusters. Dodder does not have leaves or roots. Stems are rounded, brown in color and rough. Seedlings, produced from germinating seeds in the soil, attach themselves to the crop plants by means of minute suckers through which they rob the plants of food and water.

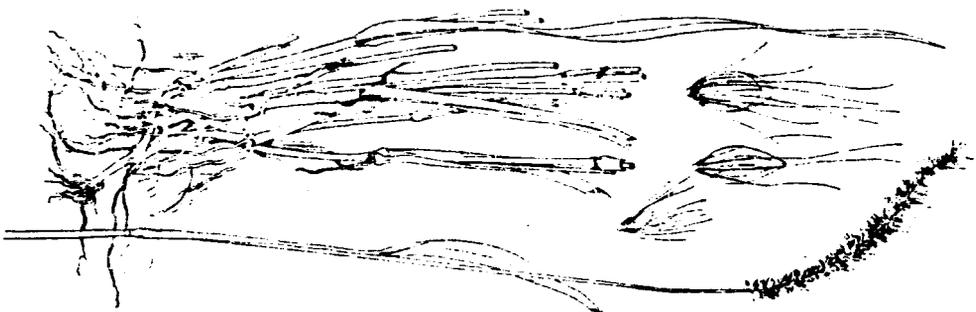
Dodder!



1 *Cuscuta* spp.

Giant Foxtail

Description—Giant foxtail resembles the common green or yellow foxtail except for height and length of seedhead. The plant often grows to a height of 6 feet producing spike-like seed heads approximately 6 inches in length. The heads are usually nodding. It is an annual, starting growth from seeds that may germinate at any time from April until frost in the fall.



1 *Setaria faberii*.

Horsenettle

Description—Horsenettle is a spiny plant with potato-like flowers. The spines are found on the stems and on both sides of the midrib of the lobed, hairy leaves. It is a perennial with creeping rootstalks from which shoots arise at short intervals. The average height of the mature plant is about 18 inches. Fleshy fruits, resembling a small tomato, are formed in clusters. They are yellow in color and contain numerous, flattened, yellow, tomato-like seeds.



1 *Solanum carolinense*.

Mustard!

Description—Mustard is an annual with bright yellow, small, four-petaled flowers. It is a tall, erect, somewhat branched plant often growing to a height of 4 feet. The lower leaves have petioles while the upper leaves grow close to the stem. It should not be confused with bitter winterress, a more compact plant which blossoms in early spring. The seeds are small, round, dark brown and are produced in long narrow pods.



1 *Brassica arvensis* or *Brassica kaber*.

Buckhorn Plantain!

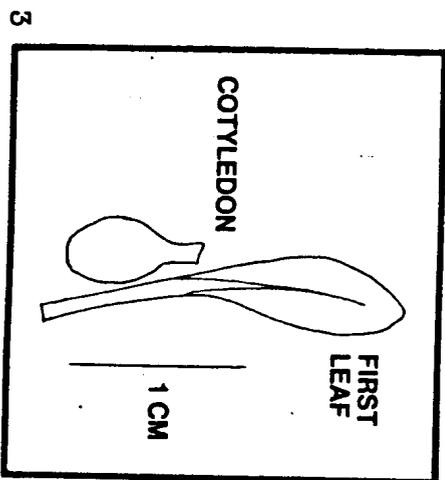
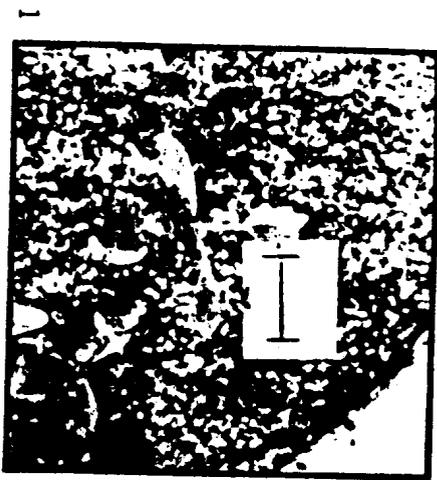
Description—Buckhorn plantain has long, slender, smooth leaves forming a rosette at the base of the plant. Stems are slender and leafless with a short, thick, cylindrical seedhead. The height of the plant ranges from 6 to 18 inches. The seeds are shiny, brown, boat-shaped and have a waxy appearance. Because of their size, they are difficult to separate from clover seed.



1 *Plantago lanceolata*.

Oxeye daisy

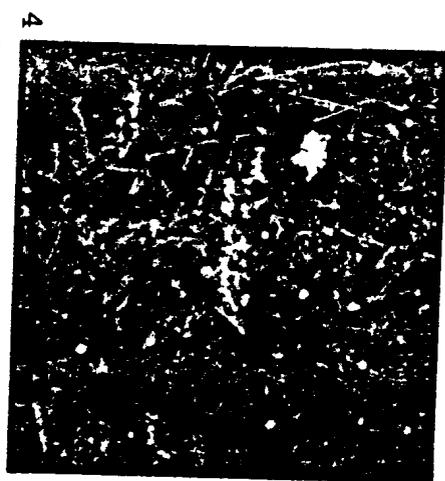
Chrysanthemum leucanthemum L.
Compositae Composite Family



Seedling (Figures 1-3)

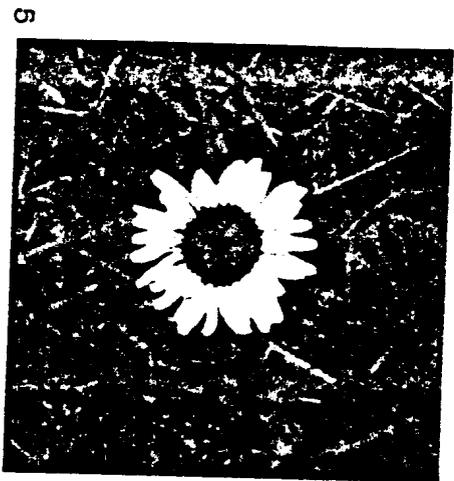
Hypocotyl green, smooth, not apparent above ground after the third leaf developmental stage. (1 and 2) Cotyledons green, smooth, lacking evident veins, petiole bases united by a cup-shaped ridge across the shoot axis. (1 and 3) First two leaves developmentally opposite and entire, subsequent leaves developmentally alternate and toothed, teeth with short apical sharp points; blades green on the upper surface, light green on the lower surface, smooth, veins evident on both surfaces as shiny ridges; petioles flattened above, smooth; bud leaves erect, rolled loosely longitudinally, covered on the lower surface with short trichomes that soon fall off. Stem not elongating in the seedling.

Distribution. Found in abandoned fields and pastures and along roadsides; throughout NC, SC, GA, TENN, KY, VA.



Mature Plant (Figure 4)

Perennial short rhizomatous, herbaceous, 0.3-1.0 m tall. Stem erect, smooth, sparingly branched near the apex. Leaves of the basal rosette deeply pinnately dissected and toothed; stem leaves alternate, coarsely toothed, lacking a distinct petiole; all leaves smooth.



Flowers (Figure 5)

Flowers in heads that are arranged singly at the ends of the branches, 4-6 cm broad; ray flowers white, 20 to 30 per head, 1.5-2.5 cm long; disc flowers yellow.

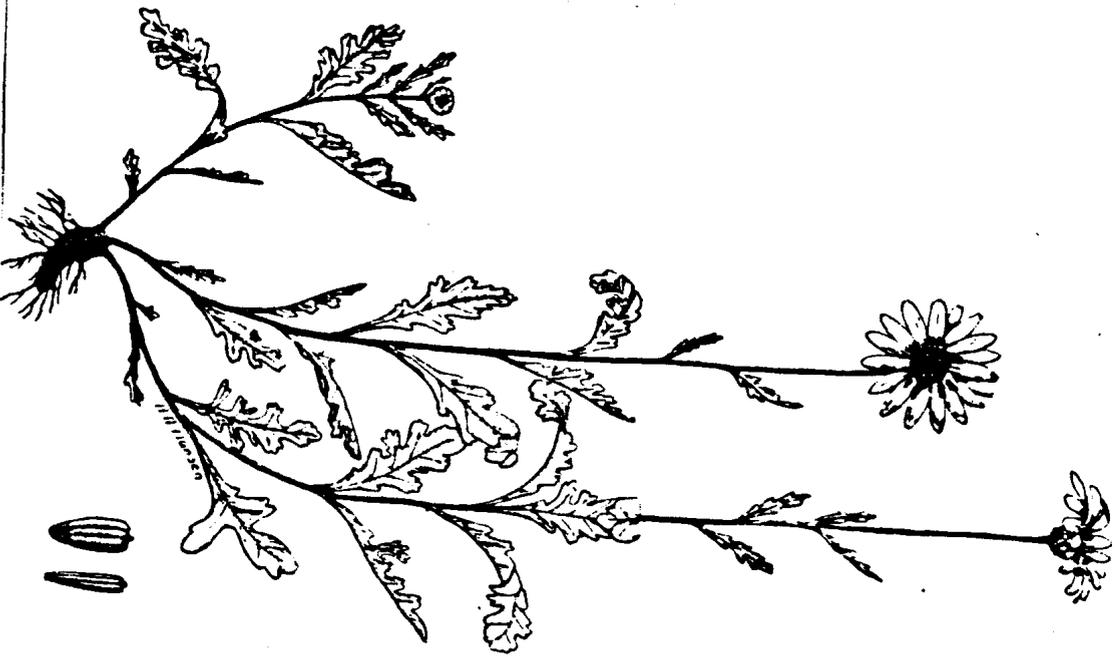


Seeds (Figure 6)

Seeds enclosed within achenes. Achene 1.5-2.0 mm long, narrowly oboval, apically truncate, dark brown to black with white longitudinal ribs, dark-brown to black area usually covered with white spots, bearing a tubercle at the apex.

Oxeye Daisy¹

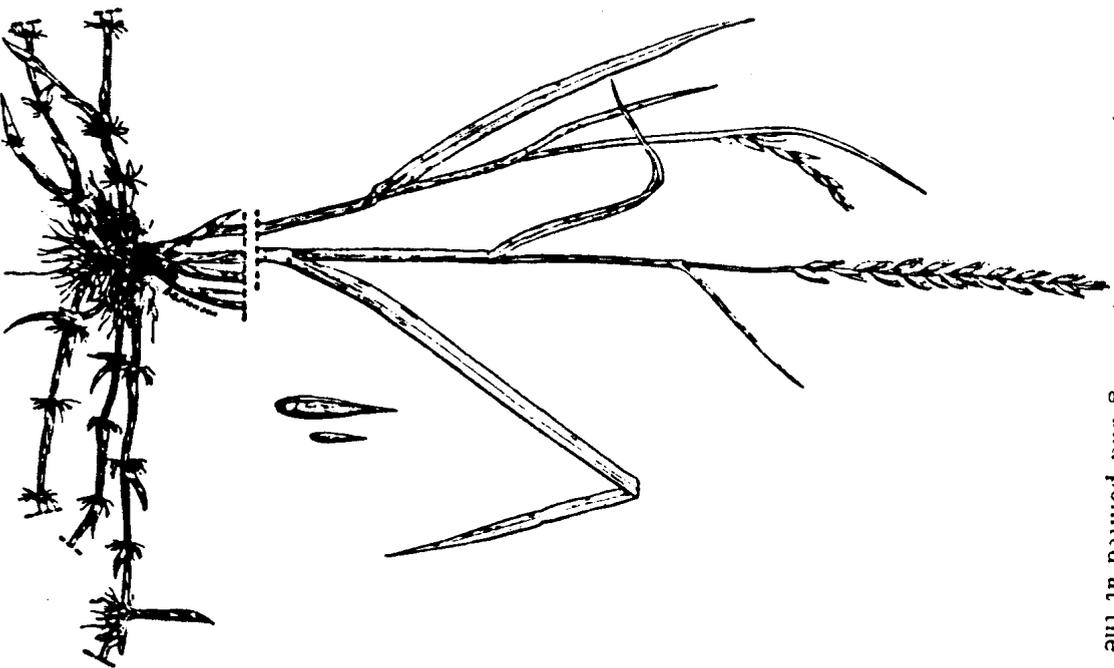
Description—Oxeye daisy can be distinguished from other similar, common weeds by the flowers. They occur singly on the ends of the flower stalks, are round, yellow centered, about a half inch in diameter and have 20 to 30 pure white marginal petals. The average height of plants is about 20 inches. Seeds are small, oblong, striped, with white lines and ribs.



¹ *Chrysanthemum leucanthemum*.

Quackgrass¹

Description—Quackgrass is difficult to identify because of its resemblance to other grasses. The leaves are broader than those of Kentucky bluegrass. The tips of the leaves are broken. Seed stalks usually are 18 to 24 inches in height with slender compact seedheads. The root stalks are tough and wiry and usually form a dense sod difficult to plow. Seeds are straw colored, oblong and pointed at the tip.



¹ *Agropyron repens*.

Sorrel, Sheep (Red)

Dock

Red sorrel, *Rumex Acetosella* L.
—A perennial by slender rootstocks up to 20 in. tall; leaves up to ½ in. broad; flower head reddish to yellowish, erect, dioecious, the female flowers with seeds protruding, the calyx falling away; seed 3-angled, about 1/32 in. (1 mm.) long.

An indicator of acid soils and low fertility. Pastures, hay fields, and lawns throughout the State. Flowers June to frost. Said to be *poisonous* if eaten in large amounts.

Curly dock, *Rumex crispus* L.— Perennial by a large yellow taproot, erect, unbranched, up to 60 in. tall; leaves crisped, large; valves of fruit thin, broadly egg-shaped, 5/32-3/16 in. (4-5 mm.) long and about as wide, squared or heart-

shaped at base; grains plump, nearly spherical.

Old fields, cultivated ground, hay fields, and pastures throughout the State. Flowers from June to September. Said to be *poisonous* if eaten in large amounts.

Broadleaf dock, *Rumex obtusifolius* L. — Perennial by a large yellow taproot; stem erect, up to 60 in. tall; basal leaves usually red-veined, up to 6 in. wide and 12 in. long; valves of fruit triangular-egg-shaped, 1/8-3/16 in. long with big teeth.

Waste places and neglected pastures throughout the state. Flowers from June to September. Said to be *poisonous* if eaten in large amounts.

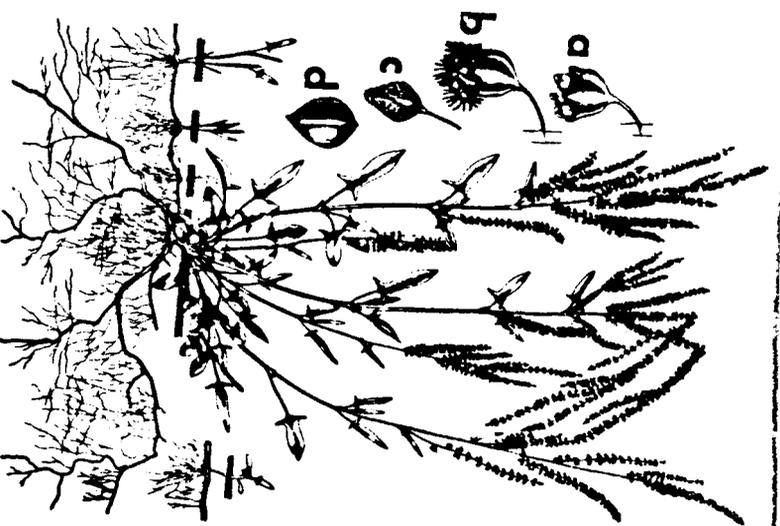


Figure 41. Red sorrel. a) enlarged male flower, b) female flower, c) matured female flower, d) seed. (State of Ohio Department of Agriculture Bulletin 1942.)

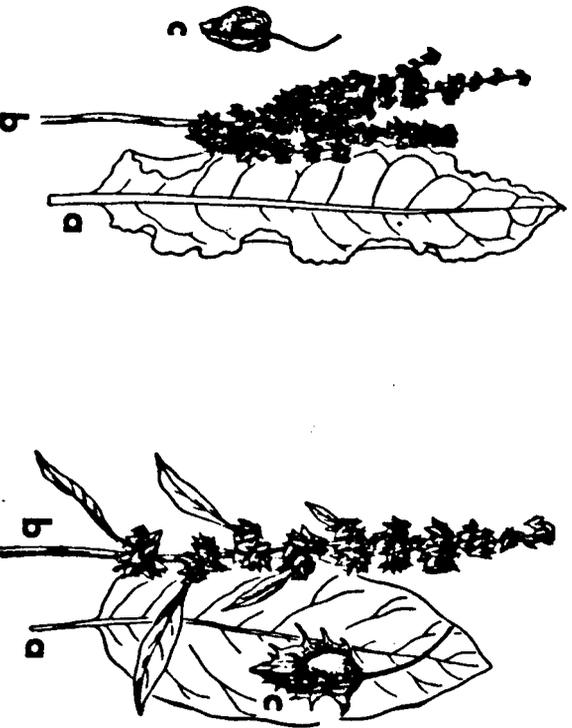


Figure 42. Curly dock. a) leaf, b) inflorescence, c) fruit. (Glisson.)

Figure 43. Broadleaf dock. a) leaf, b) inflorescence, c) fruit. (Glisson.)

21. WILD ONION (Garlic). *Allium canadense* L. Fig. 17.

Description. A perennial developing from a whitish bulb which is covered on the outside by a thin net-like fibrous coating, often with only 2 grass-like leaves arising from the bulb. Leaves not hollow. Flowers borne in cluster at the top of the stem and frequently developing into small green bulbs. Found throughout the state, usually in small prairies and pastures.

22. FIELD GARLIC. *Allium vineale* L. Fig. 17.

Description. A perennial having very much the same appearance as wild onion, but differing chiefly as follows: Basal bulb is covered on the outside with a thin whitish, papery coat. At maturity the bulb is covered with small yellowish bulbs which readily split apart. Mostly 2-3 leaves, hollow and round, borne on the stem as well as at the base of the plant. Flowers are greenish-pink, often becoming small greenish bulbs. Has the same distribution as wild onion.

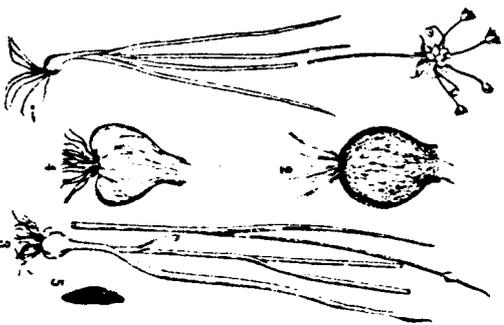
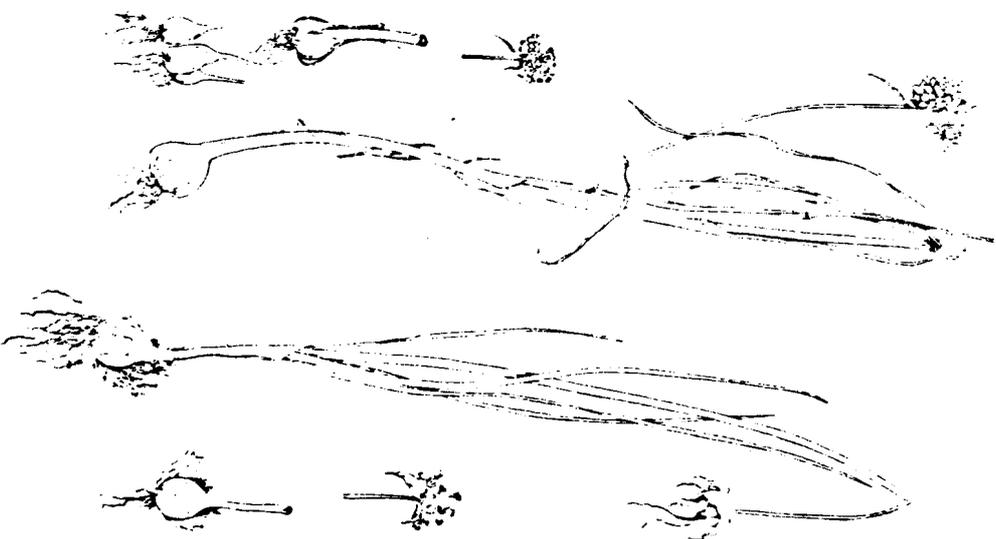


Fig. 17. Wild Onion (*Allium canadense*). 1, portions of whole plant, showing habit. 2, bulb covered with fibrous coat. Field Garlic (*Allium vineale*). 3, lower and upper portions of the plant. 4, bulb and bulblets covered with papery coat. 5, seed.

Wild Garlic

Description - Wild Garlic is an onion-like plant with round, dark green leaves. It makes most of its growth during fall, winter and early spring. It reproduces from underground bulbs and aerial bulblets that form in clusters at the top of the plants. The aerial bulblets are oval in shape, a straw color and about the size of a wheat kernel. Wild onion, although another species, is similar to wild garlic except that the leaves are flat.



1 *Allium vineale*.

References

Identifying Seedling and Mature Weeds Common in the Southeastern United States
The North Carolina Agricultural Research Service and The North Carolina
Agricultural Extension Service

Tennessee Weeds, Bulletin 393
The University of Tennessee Agricultural Experiment Station

Noxious Weeds of Indiana
Purdue University Agricultural Extension Service

Weeds
Clemson University Agricultural Extension Service

Grass Varieties in the United States
Agricultural Research Service USDA

Manual of the Grasses of the United States
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