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DICOTYLEDONACEAE
**GUIDE TO THE
IDENTIFICATION OF
DICOTYLEDONACEAE WEEDS**



THE O.J. NOER MEMORIAL
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James T. Snow
USGA Green Section

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ProTurf® Guide to the Identification of Dicot Turf Weeds

by Jim Converse

Jim Converse has been looking at turfgrass from all angles for over twenty years. After growing and studying it professionally as a grass farmer and a golf course superintendent, Jim came to Scotts research. He's used his research experience to write, illustrate, and photograph technical information about turf and turf problems for Scotts training manuals and seminars. Not so long ago, Jim changed angles again, to detail that information in words and pictures for golf course superintendents, sod growers, and other turf managers. Thousands of copies of his first field guide, *The ProTurf Guide to the Identification of Grasses*, have been sold to students, universities and professional turfmen in all parts of the country.



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Introduction

For the average turf manager, identification of an unusual weed in turf can be a time-consuming, painstaking effort. It can't be blamed on a lack of good reference material, because there are truly many excellent weed books. But, unfortunately, these books are concerned with all forms of vegetation. This means that the turf manager must often open up a book containing several thousand plants and somehow trace the key to a single turf weed. Many times it can mean hours of frustration.

Within any given locality there are

very few dicot plants that thrive under mowing conditions. It is the purpose of this book to identify as many of these dicots as possible and to make further identification easier for the reader. For reasons of simplicity, plants have been attributed to various parts of the country. This is generally where the weed is most abundant, but does not mean that it cannot occur within another area.

As with the *ProTurf Guide to the Identification of Grasses*, we have taken a number of liberties. In describing the dicots we have reduced technical descrip-

tive words to a very basic level. This is not an intent to misuse established botanical terms, but merely an attempt to take some of the difficulty out of weed identification. It is true, however, that plants growing in turf quite often do not reach enough maturity to allow a true taxonomic evaluation.

Learning to identify weeds need not be difficult. It depends primarily on learning the key features of each plant. We sincerely hope that this guide will lead to a more serious interest.

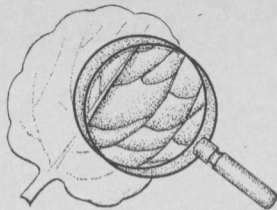
Jim Converse

Dicotyledon

(Dicot)



(1) Dicots (Di meaning two) emerge from the seed with two seedling leaves.



(2) The most distinguishing characteristic of a dicot are veins that form a net-like pattern.

- (3) **Annuals** — Of a single year duration.
Biennials — Of two years duration, generally forming only leaves the first year, and producing flowers and seeds the second year.
Perennials — Of more than two year's duration; recurring year after year.

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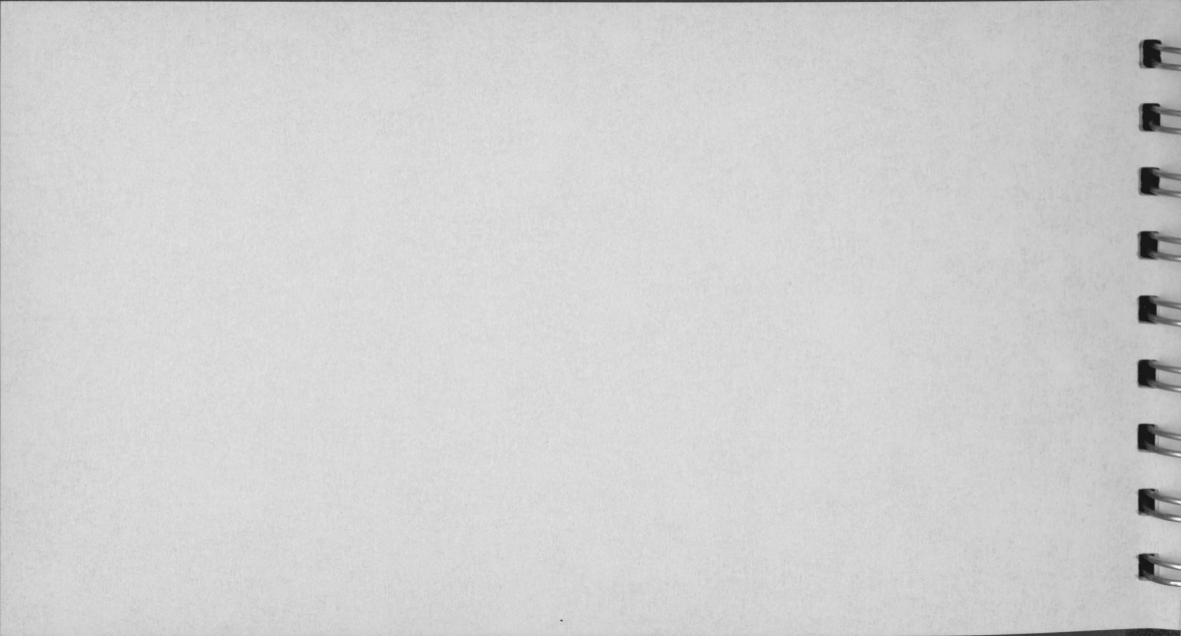


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Key

Plants found in nearly all states and southern Canada

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- Cranesbill — 2
- Curly Dock — 3
- Daisy Fleabane — 4
- Dandelion — 5
- Field Peppergrass — 6
- Horseweed — 7
- Lambsquarters — 8
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Plants found in cool season areas and southern Canada

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Plants found in the Western states and Canada

Rosette Types:

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Cudweed — 80
English Daisy — 81
Mallow — 40

Vining Types:

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Plants found in the Southern states

Rosette Types:

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Vining Types:

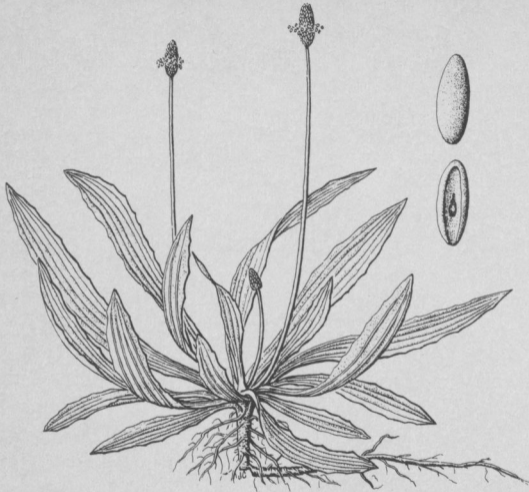
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Buckhorn 1

(*Plantago lanceolata*)

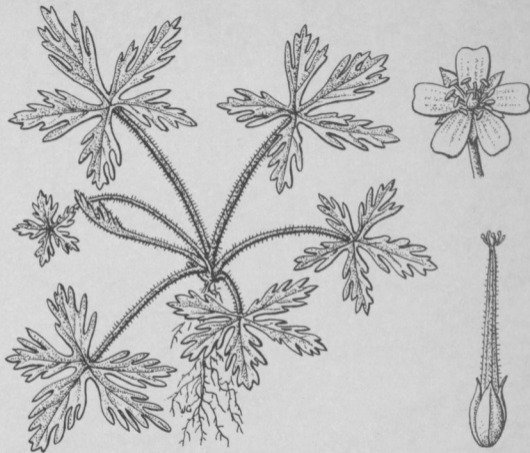


A perennial that closely resembles broad-leaved plantain, buckhorn is found in more poor lawns than any other dicot; with the possible exception of dandelion. Its tall stocks terminate in a cluster of tightly compressed seeds. Although the seedheads are fairly small, several crops may be dropped into the soil during a season. In lawns where reel mowers are used, these spikes avoid mowing and leave unsightly seed stocks for the following season. Leaves are long, narrow and pointed. Ribs, or veins, are extremely prominent, and the leaves often twist or curl. Buckhorn has a taproot with strong lateral roots. Cutting or pulling only results in a new plant springing from any part of the severed root.

2 Cranesbill

(*Geranium carolinianum*)

This annual or biennial is named for the seed capsule that remains after the plant has flowered. It looks like the head and bill of a wild crane. Cranesbill is also called wild geranium. Although this plant seems to thrive in warmer areas of the country, it grows in almost every state and southern Canada. Leaves are generally cut into five deeply cleft segments and each segment is again variously divided. The flower of cranesbill is an attractive pink to lavender. It has five petals and is found singly or in clusters at the top of the plant. This plant is occasionally confused with larkspur.



Curly Dock 3

(*Rumex crispus*)

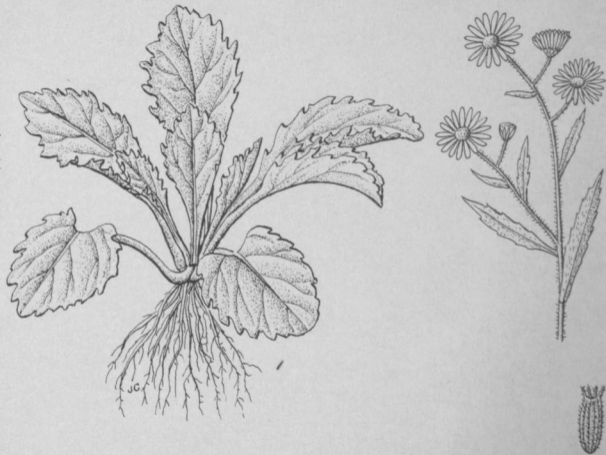


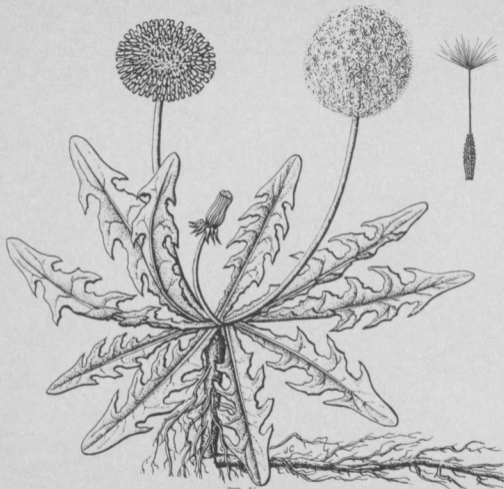
Curly dock is a very tenacious perennial that often persists in turf areas. It has a large, thick taproot that penetrates deep into the soil. Because of this root, curly dock grows most actively when grass is suffering from stress of hot, dry weather. Long, narrow leaves have “curly” or “wavy” edges and form a strong, tough rosette. These leaves are a bright, shiny green in the spring, but as summer and fall approach they become tinged with a reddish-purple. Curly dock seldom produces seed in maintained turf. In waste areas where the plant can grow unchecked, small greenish flowers are produced in clusters at the top of the main stem. These flowers later turn to flattened brown seedpods.

4 Daisy Fleabane

(*Erigeron annuus*)

Except for areas of extreme South and North, daisy fleabane is common in almost all places. It grows particularly well on waste ground and uncultivated areas. Daisy fleabane is a coarse annual or biennial that forms in turf with broad, very deeply toothed leaves. As the plant matures, these blades become long, narrow and pointed. Daisy fleabane produces a simple upright stem that branches at the top to produce many flowers. Each flower is less than one inch across with white outside ray petals and bright yellow discs in the center. Daisy fleabane grows most readily when left undisturbed, but it can persist in turf.





Dandelion 5

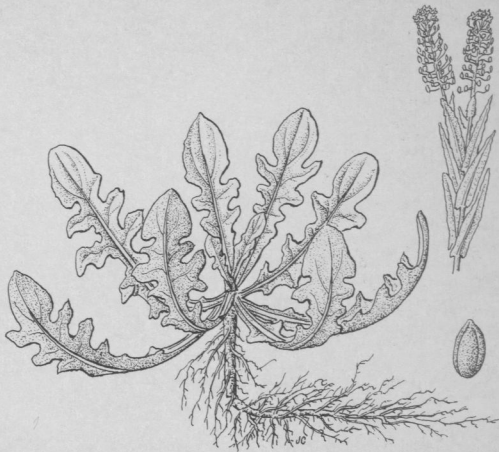
(*Taraxacum officinale*)

Contrary to popular belief, dandelion is not an annual, but a very hardy perennial. Its strong taproot penetrates the soil from two to three feet and the above-ground rosette remains the year round. Dandelion, with its yellow blossom, grows over a large area of the United States and it's probably the most easily recognized of all turf weeds. Its long, narrow leaves are variously lobed or serrated. The tips or points of these lobes are usually opposite each other and point back toward the center of the rosette. Yellow blossoms soon mature into round, white puffballs full of seeds. These seeds are carried many miles by the wind and a single plant can serve as a continuous source of infestation.

6 Field Peppergrass

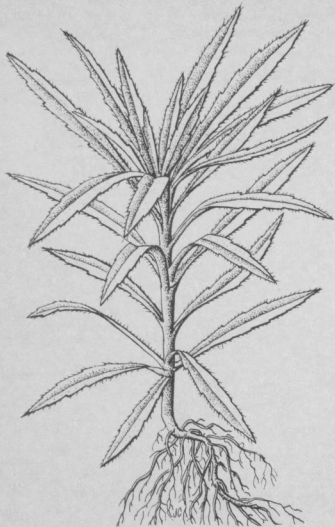
(*Lepidium campestre*)

Field peppergrass is most often found in meadows and wastelands, but will persist in turf. It acts as an annual in Southern regions and a biennial in the North. Basal leaves are elongated, broad at the tip and deeply cut with rounded notches. They are covered with soft hairs which make them gray-green in appearance. When allowed to mature, leaves become spear-shaped and clasping on the upright stems. Flowers are inconspicuous, with four tiny white petals. Many spoon-shaped seed pods are formed after the flowers have bloomed. Field peppergrass is another member of the mustard family.



Horseweed 7

(*Erigeron canadensis*)

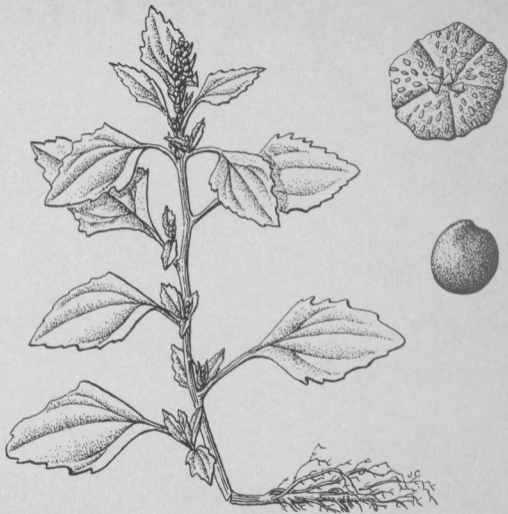


In turf, this annual, or biennial, may grow from several inches to nearly a foot in height. Along roadsides and in pastures it is not uncommon to see horseweed towering from six to eight feet. It grows upright, with narrow, hairy leaves that vary in length from one to five inches. These leaves are pointed, sometimes toothed along the margins and scattered along a tough, woody stem. Horseweed seldom produces great numbers of plants within a given turf area, but those that are present become obvious and unsightly. The small ray-type flowers, borne so abundantly in waste places, will not mature in turf.

8 Lambsquarters

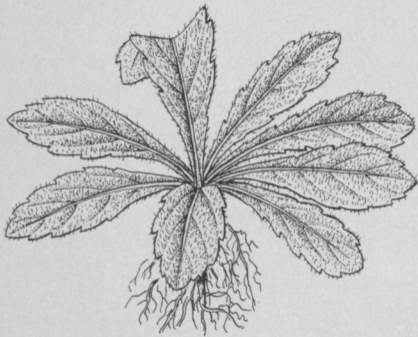
(*Chenopodium album*)

Very few annuals have as many varying growth habits as lambsquarters. Along roadsides it may reach a sprawling three or four feet in height, while in lawns seed production starts at only a few inches. Leaves are wide at the base, irregularly toothed along the margins and taper to a blunt or rounded tip. On the upper branches, they are long and narrow. Seeds are formed in spike-like clusters at the top of the plant and in the axils of the leaves. The most distinctive characteristic of lambsquarters is the white, mealy appearance of the pale green leaves.



Peppergrass 9

(*Lepidium virginicum*)

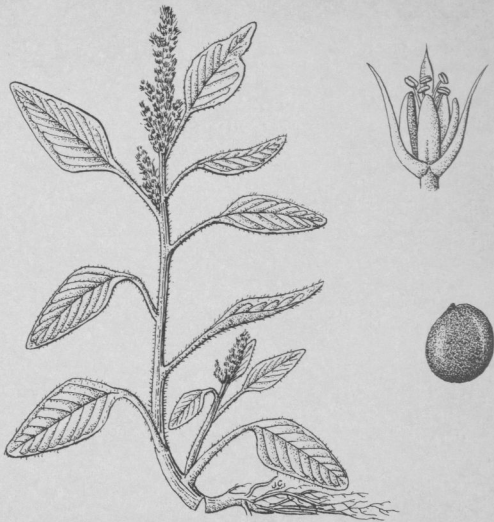


Since peppergrass is an annual, or winter annual, it is one of the first weeds to start growing actively in the spring. It thrives in turf, open fields and waste areas. Leaves are bright green, with toothed margins and blunt or rounded tips. Each leaf has a long stem that unites at the base to form a strong rosette. As warm weather approaches, peppergrass sends up a main stem that branches out at the top. Rosette leaves gradually disappear and are replaced by arrow-shaped leaves that clasp the stems of branching parts. Peppergrass has a typical “mustard” flower, with four white petals. As the flowers mature, spoon-shaped seedpods form. These seedpods have a strong “peppery” taste and give this member of the mustard family its name.

10 Pigweed

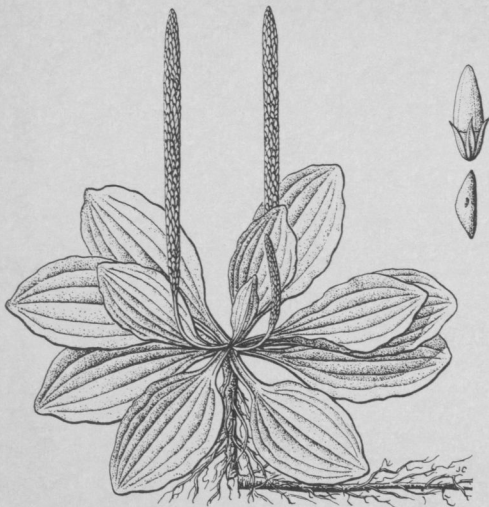
(*Amaranthus retroflexus*)

Pigweed is an annual that has escaped from farm fields to become a lawn problem. It starts to flower very shortly after germination and deposits thousands of seeds during a single season. Pigweed does not survive in good dense turf and becomes most evident during the stress of hot, dry weather. Leaves are spear-shaped, dull green and covered with dense coarse hair. Red or light green stripes run along the length of the tall main stem. Seeds are in bushy spikes at the top of the plant and in the axils of the leaves. Although pigweed is primarily an upright grower, it will lie near the ground with constant mowing.



Plantain 11

(*Plantago Rugelii*)

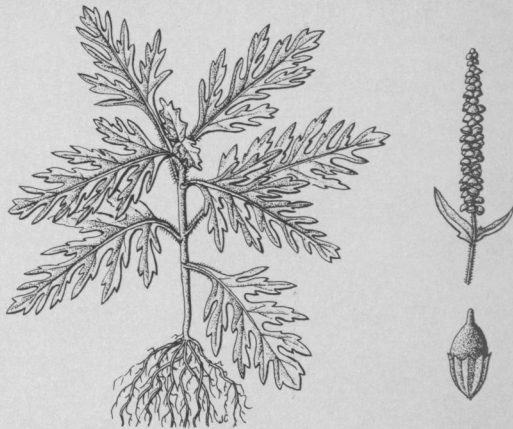


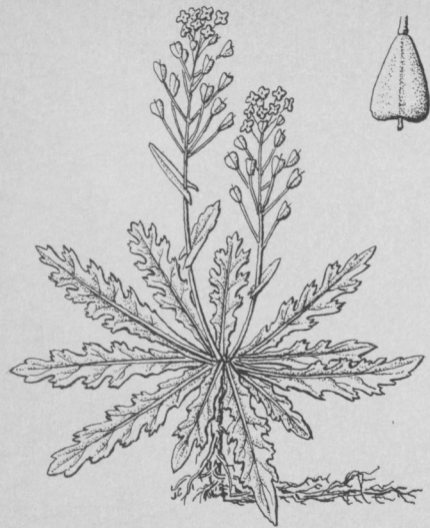
This perennial is found growing on practically all soils and is often mistaken for an annual. Leaves are large, rounded, have wavy edges and are from three to six inches in length. The entire rosette lies flat on the ground, and has a tendency to suffocate desirable grasses. Seeds are compressed along more than half the length of five to ten inch stalks. There are two species of broad-leaved plantain, and they are very similar in appearance. Rugel's Plantain has a purplish cast to the stems, and leaves are shiny green. Common Plantain has a short, pale green stem, and leaves are covered with short hairs that make it rough to the touch. Both species are correctly referred to as either plantain, or broad-leaved plantain.

12 Ragweed

(*Ambrosia artemisiifolia*)

Although this shallow-rooted annual can become unsightly in turf, it is probably most disliked for its pungent, offensive odor. This odor, which is caused by flower pollen, is particularly disturbing to sufferers of "hay fever". Ragweed reaches maturity in late summer, when unwatered turf becomes dry and parched. Leaves are flat and fernlike in appearance, somewhat resembling the outline of an evergreen tree. Male and female flowers are produced on different parts of the plant. Female flowers are found in the axils of the leaves, while male flowers grow in clusters at the tops of the uppermost branches.





Shepherd's Purse 13

(*Capsella Bursa-pastoris*)

Very few plants are as widely distributed as this annual or winter annual. It is found in practically all cultivated areas on nearly every continent. It can recur year after year on thin turf and often becomes a problem in new seedings. Like other members of the mustard family, shepherd's purse forms a rosette of deeply lobed basal leaves. These leaves are often confused with those of dandelion. As the plant matures, flowering branches are formed. Leaves on these branches clasp, or wrap around the stem. Shepherd's purse produces tiny flowers with four white petals. As the flowers mature, heart-shaped seed capsules are formed. These capsules, containing many seeds, resemble purses worn by shepherds in ancient Biblical times.

14 Sow Thistle

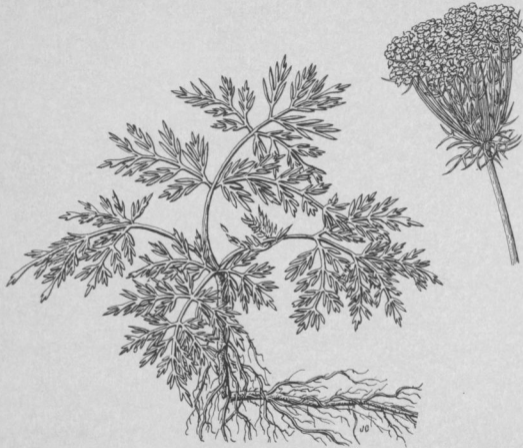
(*Sonchus oleraceus*)

Sow thistle is a weak, succulent annual that forms a coarse, leafy rosette. Although somewhat similar to the Thistle family, it is not a true member. Basal or rosette leaves of sow thistle are deeply lobed and have soft prickly spines along the margins. Upper leaves are not lobed and clasp the main stem. Yellow flowers are formed in clusters at the top of the plant. Each flower, composed of many tiny ray flowers, bears a striking resemblance to those of dandelion. Sow thistle is not a difficult weed to eradicate, but is extremely unsightly in turf.



Wild Carrot 15

(*Daucus Carota*)

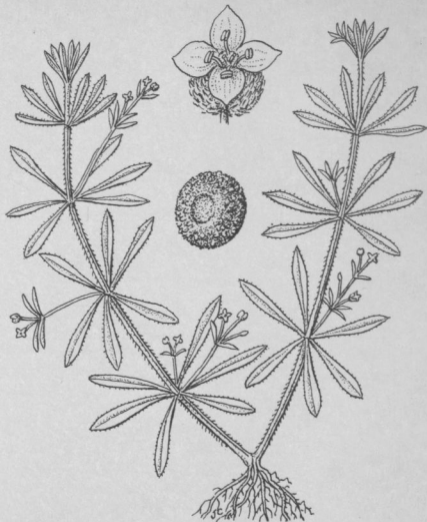


Although wild carrot has a long, tough taproot, the only true similarity to domestic carrot is its finely branched, “lace-like” foliage. Wild carrot is a biennial and forms a flat, many-branched rosette during its first year. As with all biennials, it will form upright stems, branches and flowering parts the second year. Unlike other biennials, however, wild carrot has the ability to avoid the mower and produce a cluster of flowers that lie flat on the ground. The broad white flowers of wild carrot are often a more familiar sight along roadsides and in weedy fields. Wild carrot, also known as Queen Anne’s lace, is a member of the parsley family. It is occasionally confused with yarrow, a fine-leaved, rhizoming plant that produces dense patches.

16 Bedstraw

(Galium Aparine)

In turf, bedstraw generally thrives in taller areas such as golf course roughs, where mowing may be infrequent. It is a pest as a weed and once encountered it is seldom forgotten. Bedstraw is an annual with long, narrow, rough leaves. Four to eight leaves are arranged in a circle at intervals around the stem. Stems are square, with a row of bristles pointing downward on each corner. These bristles snag clothing and the fur of animals. Flowers may be white, yellow, or purple. They are borne on long stems from leaf clusters. Beneath each tiny flower is a bur-like seed pod that is divided into two parts.



Bindweed 17

(*Convolvulus arvensis*)

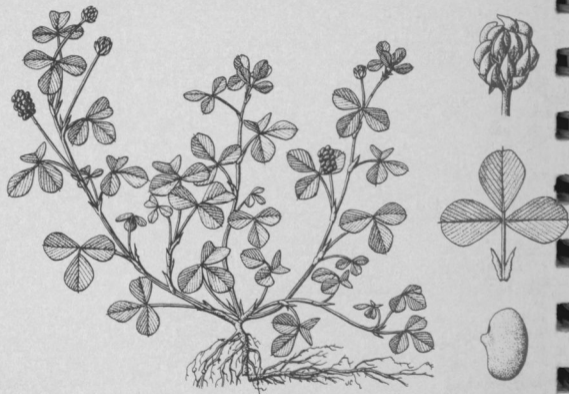


This creeping perennial is considered to be primarily a pest of agriculture. It has been known to choke out many acres of corn, wheat and other farm crops. In many states, bindweed is considered to be the number one noxious weed. Bindweed's growth habit also allows it to form choking mats in lawns and gardens. Once established, it is particularly difficult to control. This is due primarily to a deep, penetrating, extensive root system. In turf it manages to survive the low cut by growing very close to the ground.

18 Black Medic

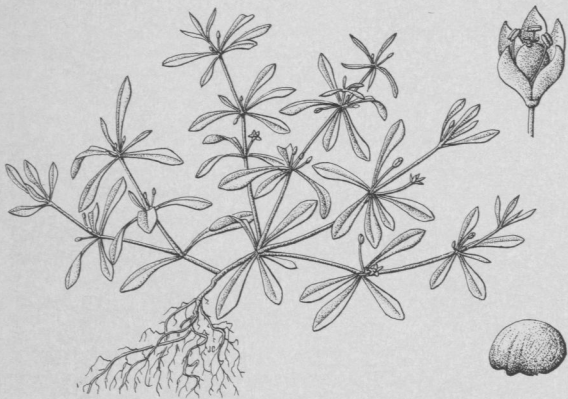
(*Medicago lupulina*)

Like oxalis, black medic, with its three leaflets, is often confused with common clover. It is a dark-green annual with spreading, prostrate, square stems which do not take root at the nodes. Leaflets are wedge-shaped with a small spur or tooth at the tip. The center leaflet is on a slightly protruding or extended stem. Bright yellow flowers are compressed into a small cluster. As each flower matures it forms a tightly coiled black seedpod containing a single amber-colored seed. Black medic, a member of the legume family, is fairly common all over the United States. A typical characteristic of this family is the tiny sacs, or nodules, of nitrogen that are attached to the roots.



Carpetweed 19

(*Mollugo verticillata*)



Most turf weeds will adjust their habits of growth to close mowing. Carpetweed grows naturally flat and horizontal to the ground. This characteristic is normal to plants that live in dry or barren areas. Carpetweed is slow to germinate, but spreads rapidly in hot weather. Its many branches radiate from a single taproot. Slender leaves are arranged like the spokes of a wheel around all of the nodes. Small greenish-white flowers rise from leaf axils. Carpetweed is of tropical origin, but grows vigorously almost everywhere.

20 Common Chickweed

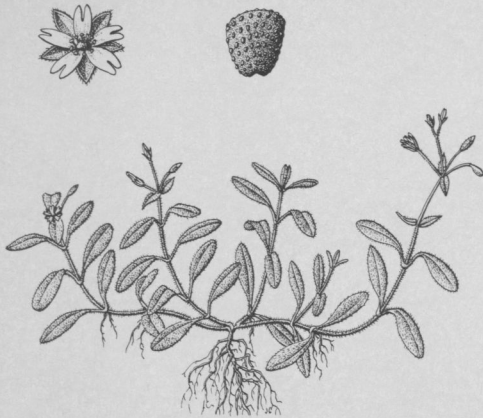
(*Stellaria media*)

Common chickweed occurs just as readily in regions of tropical climate as it does in the cooler temperatures of high altitudes. In protected areas, this annual may occur during all seasons of the year. Common chickweed prefers moist, shady places. Its spreading, rooting branches cover good turf and seriously impede normal growth. This creeping habit often allows common chickweed to form extensive, dense patches. Leaves are bright shiny green, rounded and taper to a point. They are opposite each other on hairy stems. When leaf junctions touch the ground, they take root and form new plants. Flowers of common chickweed are white with five deeply notched petals and though extremely small, are quite conspicuous.



Mouse-ear Chickweed 21

(*Cerastium vulgatum*)

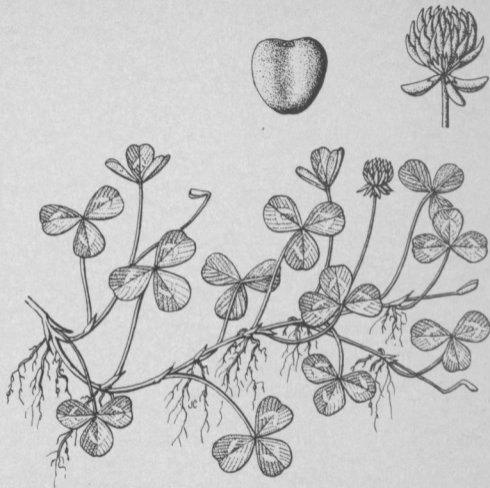


By continuous mowing many turf weeds are held in check, but not so with mouse-ear chickweed. This perennial hugs the ground and mowing only stimulates a more vigorous habit of prostrate growth. Like common chickweed, mouse-ear is found all over the United States. It grows exceptionally well in bright sunshine. Leaves of mouse-ear chickweed are opposite, oblong, dark green and covered with soft hairs. The general appearance of the leaf suggests the name "mouse-ear". Hairy stems creep along the ground and take root wherever leaf junctions touch the soil. Flowers are small, white and have five slightly notched petals.

22 Clover

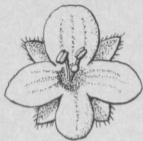
(*Trifolium repens*)

In the past, clover was often used in turf and is still included in some of the cheaper mixtures today. The dark green color of its three leaflets is not unpleasing, but the white of new blossoms and the brown of dying blossoms can become quite objectionable. Clover in a lawn suffocates desirable grasses, fades during hot weather and leaves large patches of unsightly dead turf. It is a low-growing perennial with creeping stems that root at the nodes. A close relative, alsike, is also found frequently in lawns, but it grows in rather weak clumps. Leaves are slightly larger and elongated, while its large flowers have a definite pink cast.



Corn Speedwell 23

(*Veronica arvensis*)

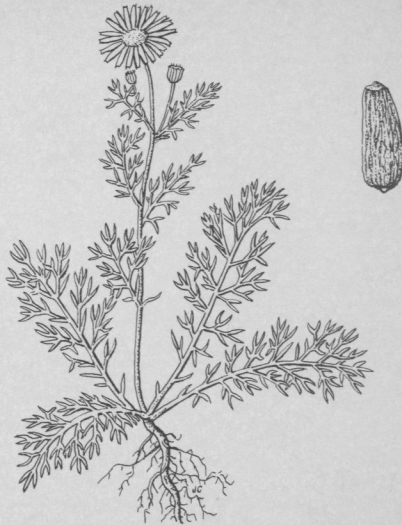


Corn speedwell is a very small, weak, low growing plant that starts growth in late winter or early spring. It thrives in thin, open turf and often appears in solid stands. This annual grows vigorously during cool temperatures but starts to disappear in extremely hot weather. The lower leaves of corn speedwell are rounded and toothed, while the upper leaves are small, pointed and indistinct. The entire plant is covered with soft, fine hairs. Corn speedwell is best known for its small, bright blue flowers and its heart-shaped seed capsules.

24 Dog Fennel

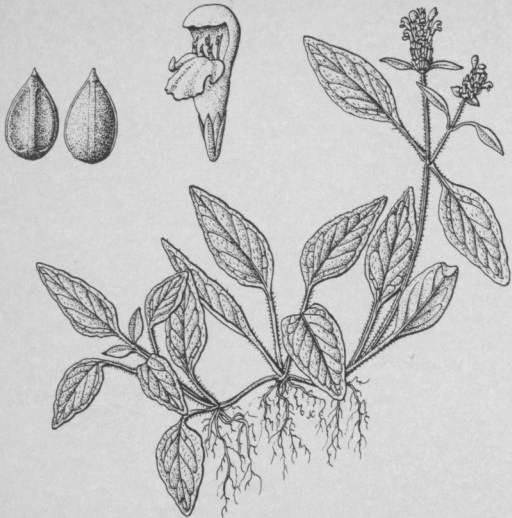
(*Anthemis Cotula*)

This annual with finely divided leaves is also known as mayweed. Even though it has attractive daisy-like flowers, crushed leaves give off a very strong disagreeable odor. Its acrid internal fluids are also known to have caused blisters on those who have pulled or handled the plant. Dog fennel is most often confused with pineapple weed, which has a very pleasing aroma. Flowers of dog fennel have large white ray petals with centers of bright yellow. This plant, like so many other turf weeds, has the unique ability to avoid damage by a mower.



Heal-all 25

(*Prunella vulgaris*)

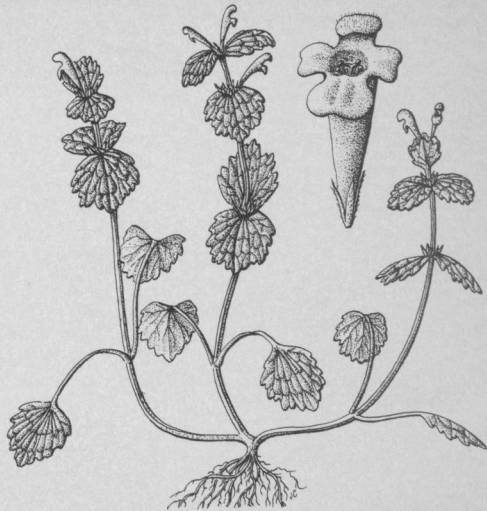


This perennial is widespread in its distribution, and extremely variable in its growth habits. In the moist shade of wooded areas, heal-all grows slender and tall. In lawns where frequent mowing is necessary, it spreads horizontally into dense, thick patches. Leaves, sparsely covered with hairs, are broad at the base and tapered to a rounded tip. They grow opposite each other along a square-shaped main stem. Tubular flowers range in color from pale violet to deep purple, and are formed in dense clusters at the tips of branches. Heal-all or "Self-heal" as it is sometimes called, would indicate some type of medicinal remedy or cure. Extensive studies reveal that if heal-all has a medicinal value or property, it is completely unknown.

26 Henbit

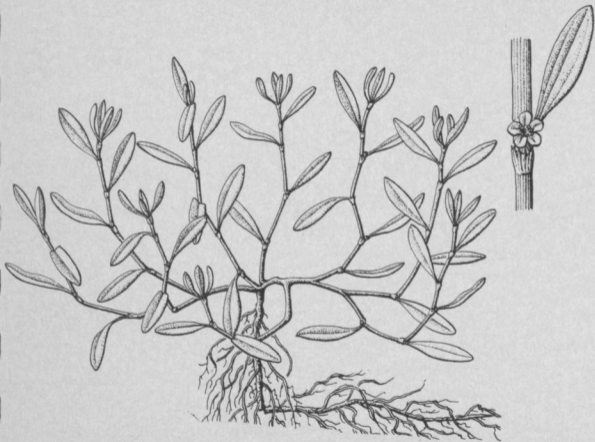
(*Lamium amplexicaule*)

This annual makes its first appearance in late winter, or early spring. It is primarily an upright grower, but can root and vine from nodes of the lower leaves. Henbit, like other members of the mint family, has a typical square-shaped main stem. Leaves are rounded, coarsely toothed, hairy and deeply veined. They grow opposite each other along the main branches. At the top of the plant they are clasping, while at the bottom they grow on short stems. Flowers of henbit are trumpet-shaped and pale purple. This plant can become a particular problem in early spring.



Knotweed 27

(*Polygonum aviculare*)

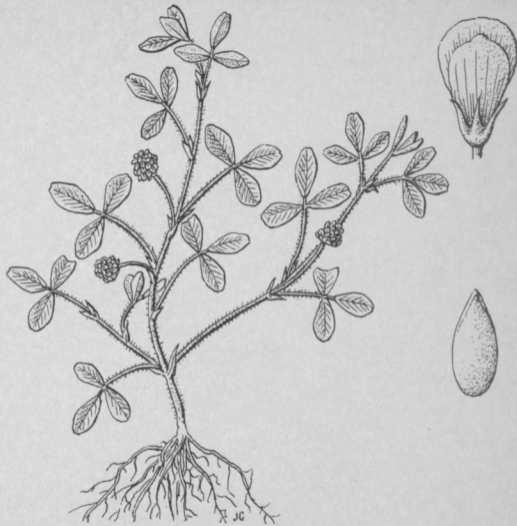


Knotweed prefers the hard, beaten paths across lawns, and the compact soil next to driveways. It is an annual that germinates with the first warm temperatures of spring and the first tiny shoots of knotweed are often welcomed as a cover of new grass. It soon branches out and forms a tough, wiry, prostrate mat. Knotweed not only prevents the growth of desirable grass, but also produces a great quantity of seed for next year's regrowth. Leaves of knotweed are blue-green, about one inch long and one quarter inch wide. Each leaf is narrow at the base and rounded at the tip. The tiny white flowers are very inconspicuous and are found at the junction of leaf and stem. Knotweed is a particular problem on football fields where compaction and traffic are excessive.

28 Low Hop Clover

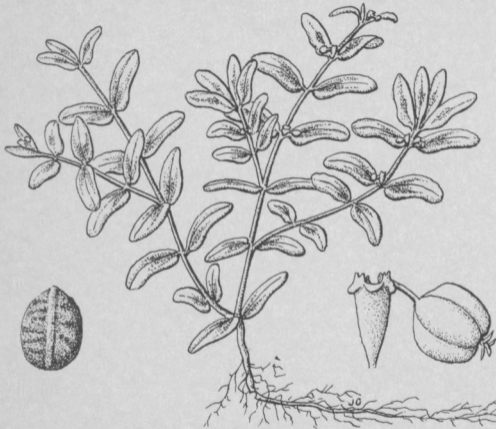
(*Trifolium procumbens*)

Although most of the clovers make good forage crops, many are too small to have any real value. Low hop clover is an annual generally found in pastures, lawns and waste places. It seldom reaches a foot in height and in turf it grows much shorter. Many times it is confused with black medic, which has smaller yellow flowers and a more prostrate growth habit. Low hop clover has hairy, reclining stems that grow from three to twelve inches in length. The terminal leaflet of each leaf is on a short stem. Flowers are a bright yellow. They are larger than black medic and arranged in loose clusters. Each individual flower produces a single seed.



Nodding Spurge 29

(*Euphorbia maculata*)

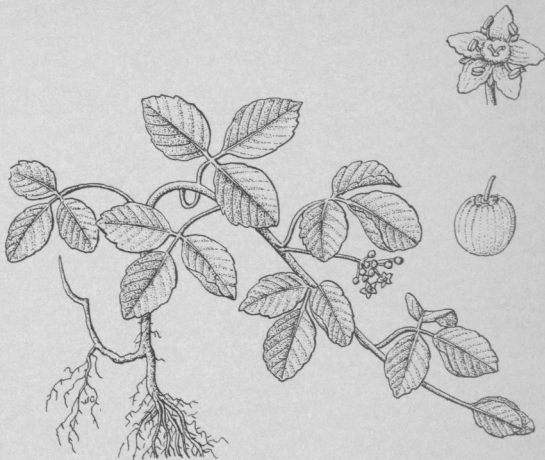


Unlike spotted spurge, which smothers and suffocates turf, nodding spurge grows mostly upright. It does little harm in turf, but it can become an unsightly nuisance. The entire plant is like a larger version of spotted spurge. Leaves are opposite each other, simple and oblique at the base. They are often a reddish cast, or have a red spot in the center. When the stem of this plant is broken, it exudes a white latex-like sap. Very tiny flowers are found on long stems with small leaves at the top of the plant. Nodding spurge occurs in most areas across southern Canada and the United States.

30 Poison Ivy

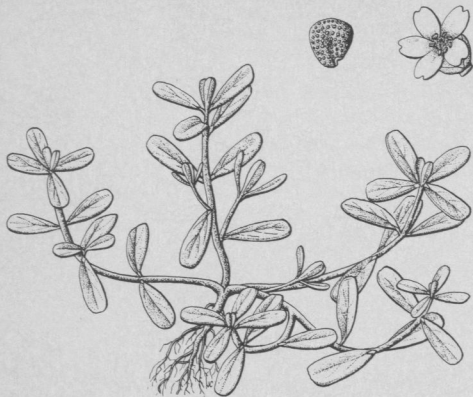
(*Rhus radicans*)

There is some question as to whether poison ivy should be described as a turf weed. But it does frequent the borders of many turf areas and often starts around trees, or other places where grass grows tall. This perennial can be harmless to some people and a very serious poison to others. It can occur as a climbing or a creeping plant. Stems are woody and claspng. Leaves are alternate and divided into three glossy leaflets. They may be nearly smooth or slightly lobed along the edges. Tiny green flowers with five petals are found along long slender branches which are formed between the leaf stem and the branch. Poison ivy is considered a problem across southern Canada and all states.



Purslane 31

(*Portulaca oleracea*)



In new seedings, or thin lawns, purslane can become one of the most troublesome annuals. Like many desert plants, it has the ability to store moisture for great lengths of time. It thrives in extremely hot, dry weather. The sprawling stems of purslane are thick, round, fleshy and reddish-brown in color. Leaves are bright, shiny green, wedge-shaped, rubbery and thick. Purslane has tiny yellow flowers with five petals. These flowers seldom open unless the sun is shining brightly. The cup-shaped seed pods produce an abundance of small black seeds. These seeds may lie dormant in the soil for many years.

32 Sheep Sorrel

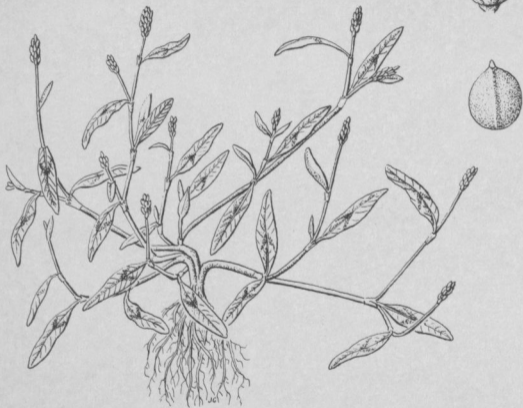
(*Rumex Acetosella*)

Very few weeds have a root system comparable to this tenacious perennial. Sheep sorrel creeps and spreads by a maze of underground roots and rhizomes. Unless this plant is controlled when first observed, it can quickly choke and suffocate large areas of desirable turf. Sheep sorrel is most often associated with acid or "sour" soil, but it can thrive almost anywhere. Leaves are easily recognized by their unusual lance or arrow shape. They are narrow and thin during the spring, but by autumn they become broad and succulent. Another unusual characteristic of sheep sorrel is the method of flowering. The yellow-green flowers of the male are borne by one plant, while the reddish-brown flowers of the female are borne by a separate plant.



Smartweed 33

(*Polygonum Persicaria*)

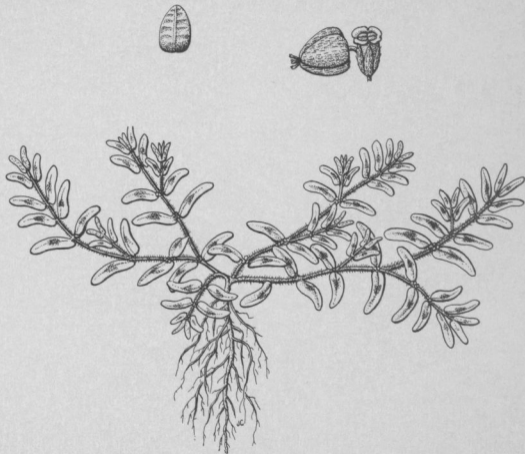


Smartweed is a member of the buckwheat family that thrives in moist situations. This is an annual that grows across the United States and southern Canada. It does avoid the extreme Southern states. Stems range from six inches to several feet tall. Leaves are narrow, from one to four inches in length and tinged on top with purple. They have a peppery taste and a short stem with stipules that are fused into a cylindrical sheath. Flowering spikes are erect, dense and from one-half to two inches in length. The tiny flowers are pink with five obtuse lobes.

34 Spotted Spurge

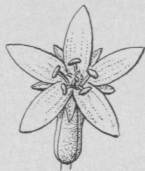
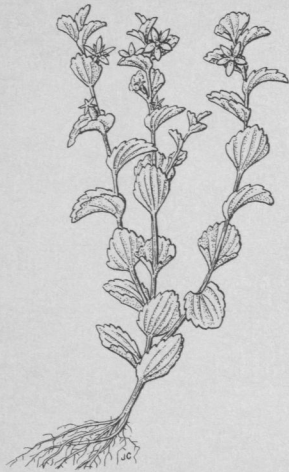
(*Euphorbia supina*)

Few annuals seed as heavily, or grow so commonly in as many states as spotted spurge. It germinates in late spring or early summer and its spreading branches often choke and suffocate desirable grasses. In well nourished turf, leaves of spotted spurge may be nearly three-quarters of an inch long. In areas of stress, leaves may be one-third this size. One of the surest means of identifying spotted spurge is by breaking the stems or branches and exposing the milk-like substance that is common to all members of this family. Flowers are tiny, pinkish-white and inconspicuous. Leaves vary in color from a pale reddish-green to dark green, but almost always have a purplish-brown "splotch" on the upper surface.



Venus Looking Glass 35

(*Specularia perfoliata*)

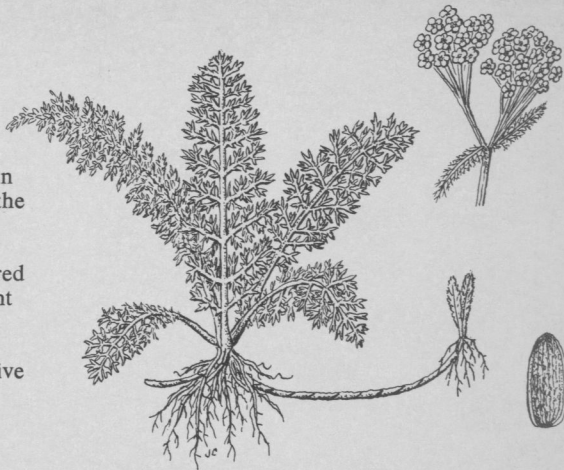


Very few plants can adapt so well to various climates as Venus looking glass. This perennial grows especially well in sandy soils and prefers areas where there is little competition. It can grow from six to eighteen inches in height, but its stems are so weak that it often grows prostrate. Leaves are alternate, broadly ovate and clasp the stem by a heart-shaped base. Edges are finely toothed. Flowers are tubular and violet-blue in color, with five petals. They form where the leaf joins the stem. Venus looking glass is not a particularly aggressive weed but it can be a problem in thin turf.

36 Yarrow

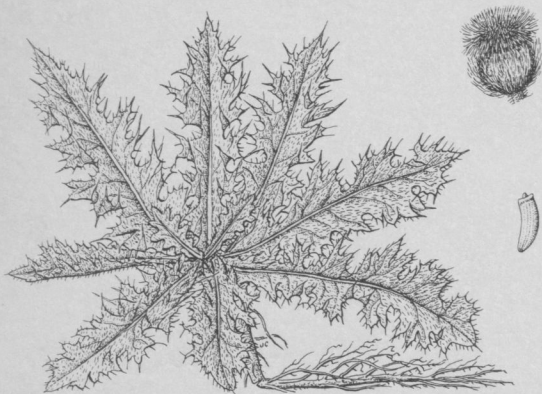
(*Achillea millefolium*)

Even though yarrow has fine, delicate, fern-like leaves, it is a tough, durable perennial. It spreads by strong rhizomes and is an exceptionally aggressive weed in turf. Yarrow forms dense patches, hugs the ground and avoids the mower. When crushed, it has a pungent odor and bitter taste. The finely divided leaves are covered with soft hairs. Yarrow can reach a height of one to two feet at maturity. Flowers are formed in clusters at the tips of branching stems. They are composed of five tiny white ray petals with pale yellow disc flowers in the center.



Bull Thistle 37

(*Cirsium lanceolatum*)

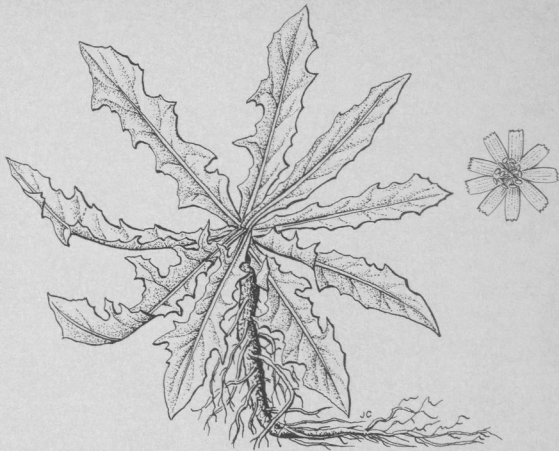


Leaves of bull thistle form a large rosette during its first year. They are long, narrow and sharply pointed. Edges are deeply cut, lobed and covered with sharp spines. Unlike Canada thistle, which is smooth and shiny on the upper surface, bull thistle is dull, rough, gray-green and covered with spines. It can be one of the most painful of all turf weeds. Bull thistle sends down a strong, deep taproot and does not spread by rhizomes like the Canada thistle. When allowed to mature, bull thistle sends up a long, coarse, spiny central stem and along this stem are deeply cut spiny leaves. Very attractive lavender flowers surrounded by a round spiny base are formed at the top of the plant. Wind may carry seeds of bull thistle for miles.

38 Chicory

(*Cichorium intybus*)

The rosette of chicory bears a striking resemblance to dandelion. Both have long, narrow, coarsely toothed leaves. In most cases, the toothed lobes of the dandelion leaf are opposite each other and point back toward the rosette. In chicory, these lobes are staggered along each margin and may point forward or backward. The upper surface is also "rough" to the touch. Chicory is a perennial with bright blue daisy-like flowers. These flowers offer a colorful cover in farm fields. The dark brown contorted taproot is often roasted and ground as a substitute for coffee.



Evening Primrose 39

(*Oenothera biennis*)

During its first year of growth, this biennial produces a strong taproot and a rosette of long tapered leaves. It is this form that causes evening primrose to be a problem in turf. Leaves in the rosette are prominently veined and the mid-vein is generally tinged with pink. When allowed to mature, evening primrose may reach a height of six feet. As the name indicates, most of the flowers on this plant open in the evening. They are a bright yellow, with a very fragrant aroma that attracts night flying insects. Flowers have four obvate petals. Evening primrose may be found from Labrador south to Florida and westward to the Rocky Mountains.

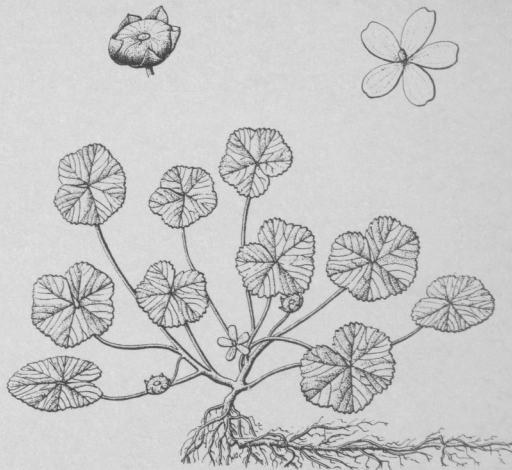


40

Mallow

(*Malva rotundifolia*)

Although this biennial, or perennial, is most often found in waste places, occasionally it will persist in turf areas. Mallow emerges from a deep taproot and sends out sprawling branches that trail along the ground. Unlike ground ivy, with which it is most often confused, mallow does not develop roots when its branches touch the ground. Leaves are round, have sharply serrated edges and are found on long stems. Flowers have five pinkish-white petals and arise from the junction of leaf stem and main stem. Seeds produced by mallow resemble a miniature wheel of cheese. Hence, mallow is often referred to as “cheeses” or “cheese mallow”.



Prickly Lettuce 41

(*Lactuca Scariola*)

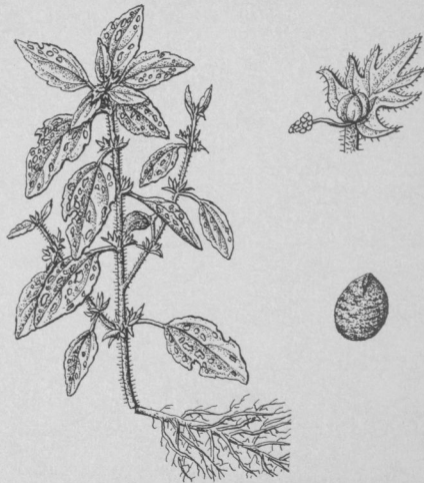


This annual is a true member of the lettuce family and is quite often referred to as “compass” plant. It derives this unusual name from its sensitivity to sunlight which causes leaves to be turned on edge and point toward north and south. Although prickly lettuce is a member of the lettuce family, it has no particular value. Leaves are long, spear-shaped, deeply lobed and the edges are lined with sharp spines. The surface of the leaf is smooth but the spines also cover the lower surface of the mid-vein. When allowed to mature, small, yellow ray flowers are found in terminal clusters.

42 Three-seeded Mercury

(*Acalypha virginica*)

This annual must have tremendous appeal to insects, for about half way through the summer the leaves look completely moth-eaten. Three-seeded mercury is not an aggressive weed but it does move into thin turf. It is a shallow-rooted, erect plant that branches mostly near the base. Leaves are on rather long stems. They are broad at the base and taper to a point at the tip. Inconspicuous male and female flowers are formed at the junction of the leaf stem and main branches. Three-seeded mercury gets its name from the three seeds produced by each seed pod.



Violet 43

(*Viola papilionacea*)

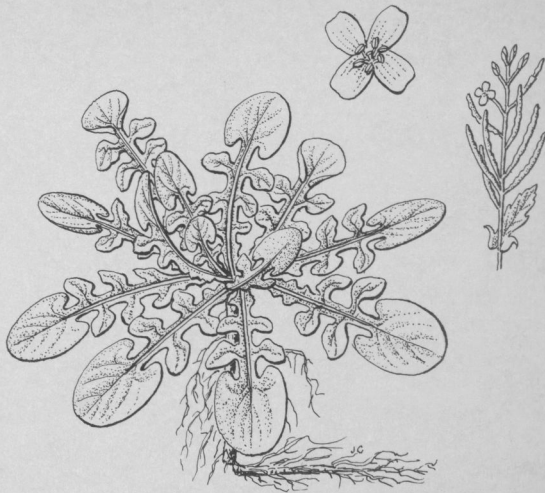


Violets are extremely attractive and are seldom considered in the same class as weeds. But, occasionally violets escape from the flower garden and become established in turf. They are truly one of the most difficult plants to eradicate. Leaves of common violet are heart-shaped and regularly lobed along the edges. The surface is very irregular. Flowers are an attractive deep blue or purple. Even though the common violet grows in clumps, it can spread easily by strong rootstalks. Violets generally thrive in cool, moist areas. Other members of this family can have very unusually shaped leaves and flowers that range from white to pink to bright yellow.

44 Yellow Rocket

(*Barbarea vulgaris*)

This biennial, or perennial, is a typical member of the mustard family. It starts growth in late winter or early spring and becomes one of the first noticeable weeds in the lawn. As a turf weed, it is almost always found in the rosette stage. Leaves of yellow rocket are bright, shiny green, deeply notched along the edges and terminate in a large, rounded lobe. Under mowing conditions, the stems and flowering parts seldom have a chance to develop. Flowers are small, yellow, have four petals and are found in clusters at the tips of the uppermost branches.



Alsike 45

(*Trifolium hybridum*)



Alsike clover is a perennial that has been widely cultivated as a pasture, or hay crop. It is an erect, branching plant with large ovate leaflets. Alsike is most often confused with white clover, which has creeping stems that root at the nodes. Alsike clover appears in lawns as unsightly clumps. Leaves are on rather long stems and each of the three leaflets are joined at the same point. Stipules wrap around leaf stems where they join the branches. Flowers of alsike clover are mostly white, but quite often tinged with pink. Like other clovers, alsike has a very pleasing aroma.

46 Bellflower

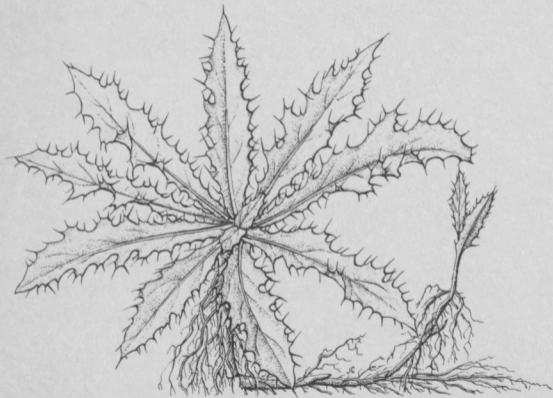
(*Campanula rapunculoides*)

In the non-flowering stage, bellflower looks very much like the common violet in turf. But, while violets grow in clumps, bellflower forms dense, spreading patches. Both plants are extremely difficult to control. The leaf of bellflower is heart-shaped and unevenly toothed along the edges. When allowed to mature, the plant reaches one to three feet tall. Flowers are numerous, nodding, purple and bell-shaped with five petals. They are scattered along the upper portion of the main stem. Bellflower is considered to be a problem of the North-eastern cool season climate, but occasionally it is found as far south as West Virginia.



Canada Thistle 47

(*Cirsium arvense*)

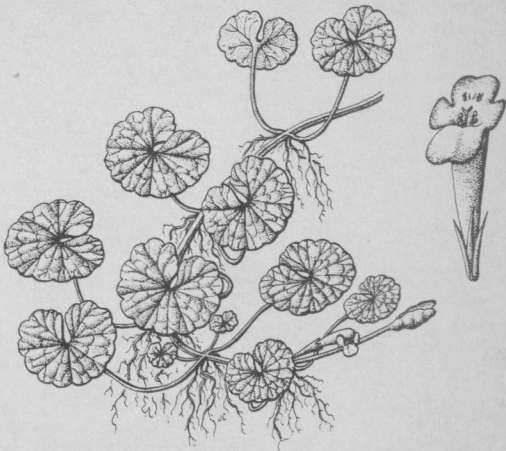


This spiny, troublesome perennial is probably hated more than any other weed. Its primary offense has been the destruction of millions of dollars worth of agricultural crops each year. In lawns, its sharp spines cause much discomfort to the touch, and its aggressive growth habits crowd and destroy good turf. Canada thistle is such a serious pest that most states have passed legislation making it an offense to allow it to reach maturity. Seed laws are also exceptionally rigid against Canada thistle. Leaves are smooth, shiny green on the upper surface, with crinkled, spiny margins. Flowers are bright lavender, with male and female in separate blossoms and generally on separate plants. Canada thistle spreads by deep rhizomes.

48 Ground Ivy

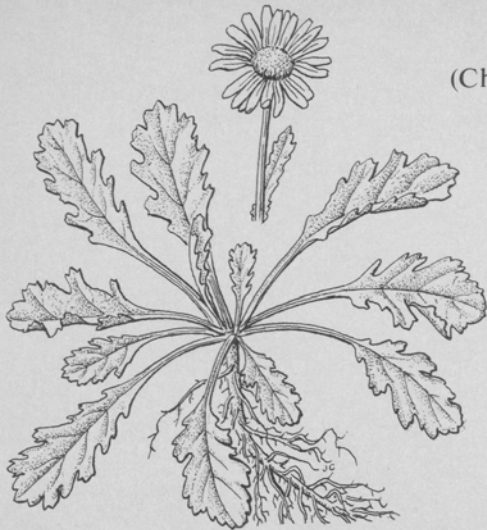
(*Glechoma hederacea*)

By creeping and spreading, ground ivy forms dense patches. Although this perennial is found most often in shaded areas, it thrives equally well in full sunlight. Leaves are round, scalloped along the edge, heavily veined and rough on the upper surface. They appear opposite each other on long, trailing, square-shaped stems. Wherever these junctions touch the ground, ground ivy takes root, and new branches or runners are formed. Flowers are purplish-blue and have the typical trumpet shape of plants in the mint family. In some areas ground ivy is used as a ground cover.



Ox-eye Daisy 49

(*Chrysanthemum Leucanthemum*)

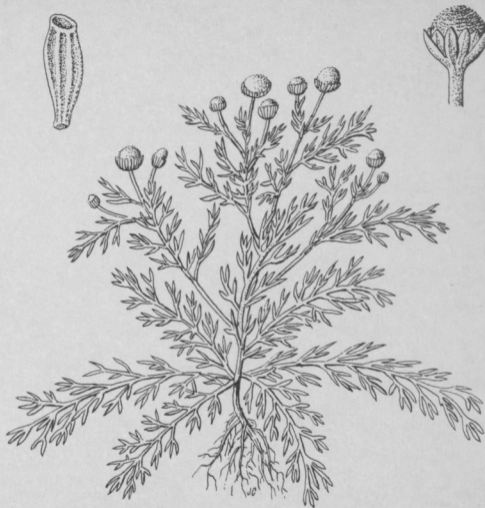


Ox-eye daisy forms dense patches as it spreads by short rhizomes. Its crowded leaves hug the ground and as a perennial it continues to thrive year after year. Leaves are broadest at the tip, deeply notched and grooved, with a long narrow stem. They also give the appearance of being thick and leathery. Flowers are borne at the tips of long branching stems. They are typical of the daisy, with long white ray petals around the outside and bright yellow disc petals crowded in the center. Ox-eye daisy is a member of the large Composite Family, which includes many turf weeds.

50 Pineapple Weed

(*Matricaria suaveolens*)

This annual thrives in waste places and often spreads along walks and driveways where it is difficult for other vegetation to grow. Pineapple weed is named for a very pleasant “pineapple-like” aroma, which results when its leaves are crushed. Leaves of pineapple-weed are very delicate and finely divided. Flowers are yellow-green and lack marginal, or ray petals. Pineapple weed is believed to have originated in the Western states and then spread its way across northern areas of the continent. It is often confused with mayweed, or dog fennel, which has a very offensive odor.



Purslane Speedwell 51

(*Veronica peregrina*)

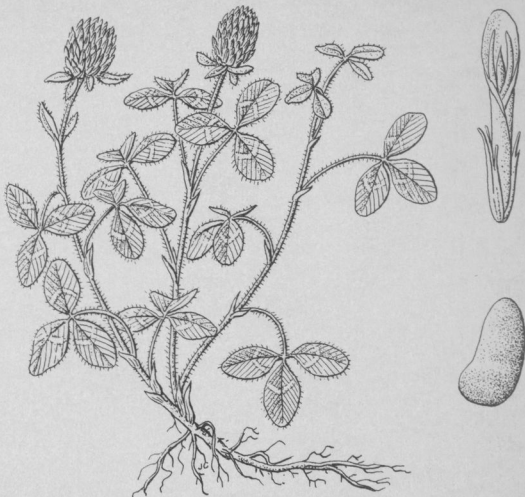


Unlike most members of the speedwell family, purslane speedwell is primarily an upright growing plant. It first appears in late winter and as an annual it starts to disappear in hot weather. Purslane speedwell is a particular nuisance in new seedings and the thin turf of temperate regions. Leaves are toothed along the edges, opposite each other and attached directly to the stem. Its tiny white flowers have four petals and two stamens. Heart-shaped seed capsules form at the junction between the leaf and the stem. Purslane speedwell is probably the least harmless member of this particular family.

52 Red Clover

(*Trifolium pratense*)

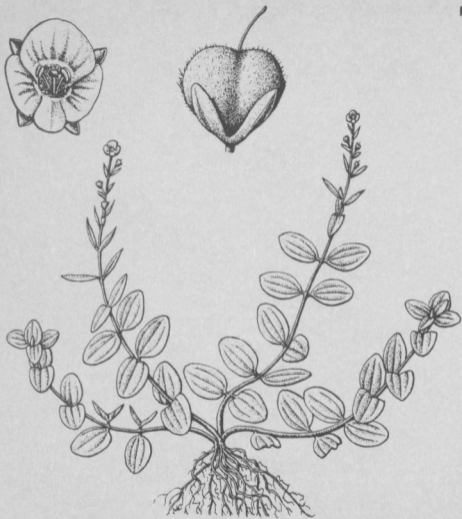
Red clover is a very valuable forage crop with a unique ability to thrive in nearly all climates. This clover, like other leguminous plants, has tiny nodules on the roots which have the capacity to fix and store nitrogen. Therefore, legumes have an additional value as a means of enriching soils that are low in nitrogen. As a tough-rooted perennial, red clover can thrive in turf for an indefinite length of time. This plant is generally covered with soft hairs and leaflets are marked on the upper surface with a pale oval pattern. Clusters of reddish-purple corollas form flowers which emit a very pleasing, fragrant aroma.



Thyme-leaf Speedwell 53

(*Veronica serpyllifolia*)

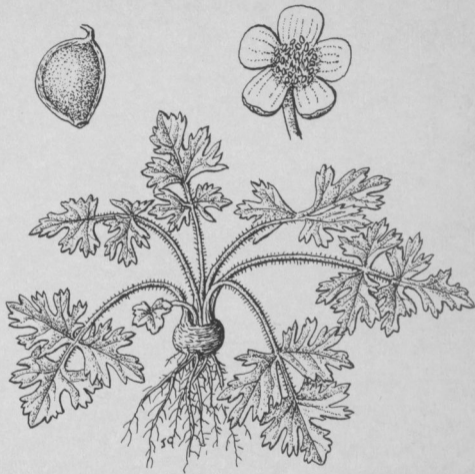
There are many members of the speedwell family. Some are annuals, and some, such as thyme-leaf, are hardy perennials. All are low-growing, ground-hugging plants, and remain particularly difficult to control. Thyme-leaf speedwell is a dark, shiny green. Its egg-shaped leaves are opposite each other and closely spaced on creeping stems. It forms dense, spreading patches that suffocate good turf. Flowers are white, tinged with purple, and have four irregularly shaped petals. Other species of speedwell have flowers that range from bright blue to purple. A most unique characteristic of this family is the heart-shaped seed capsules. They contain many seeds and are arranged along the stem below the flowers.



54 Bulbous Buttercup

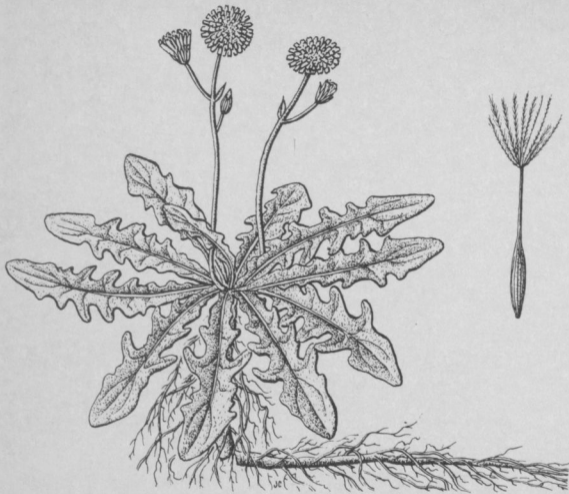
(*Ranunculus bulbosus*)

Buttercups are seldom considered any more than attractive spring wild flowers. But, several varieties can be very undesirable in turf. Bulbous buttercup, like all other difficult turf weeds, has the capacity to hug the ground and avoid damage. The bulb-like base of this perennial gives this plant the ability to resist long periods of dry weather. Leaves are on long hairy stems and divided into three main sections. Each section is then variously lobed and cleft. Flowers are a bright, shiny yellow, with five to seven petals. They are almost round in appearance. Although bulbous buttercup grows most commonly from Newfoundland and Ontario south through Louisiana, it is also a problem in the Northwest.



Coast Dandelion 55

(*Hypochoeris radicata*)



Although found in many areas of the United States, coast dandelion is particularly troublesome in northern California, Washington and Oregon. At first glance this perennial bears a striking resemblance to common dandelion, but close inspection reveals very little actual similarity. The leaves of coast dandelion are similar in outline to common dandelion, but they are thick, fleshy and covered with hairs. Coast dandelion sends up leafless stems and its yellow-orange flowers are often found in branched pairs. Its strong rosette hugs the ground, avoids the mower and chokes good turf. A strong taproot penetrates nearly two feet into the soil.

56 Mouse-ear Cress

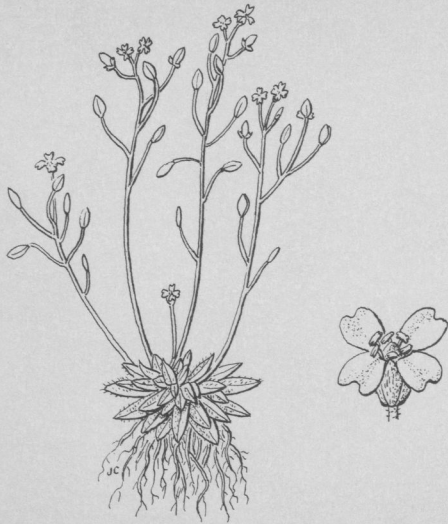
(*Arabidopsis Thaliana*)

This is one of the smaller members of the mustard family and it seldom reaches a foot in height. Mouse-ear cress forms a rosette of tiny leaves and occurs in dense stands where turf is weak or thin. As an annual or biennial, it generally recurs in the same areas year after year. Leaves are narrow, short and pointed, with irregular edges. Flowers are tiny and white with four petals. Mouse-ear cress often blooms during warm spells of February or March. Seed pods are long, narrow and pointed upward from the main stem. Whitlow grass and mouse-ear cress often grow side by side.



Whitlow Grass 57

(*Draba verna*)

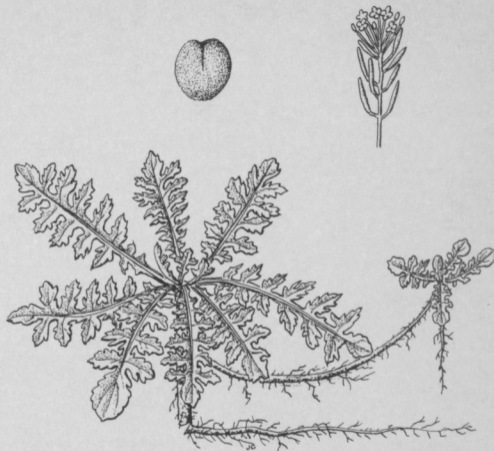


Most members of the mustard family are large rangy plants, but whitlow grass seldom exceeds four or five inches. It is an annual or biennial, whose leaves are all in a rosette. They are seldom more than an inch in length and are covered with tiny branched hairs. The rosettes of this plant grow thick enough to form dense patches. Whitlow grass has tiny white flowers with four notched petals. They form at the top of leafless stems. From these flowers come flattened, oval, paper-like seed pods. Whitlow grass starts growth in very early spring and it is not unusual to see flowers in February or March. It is a weed of Eastern and North Central states but occasionally grows on the West Coast.

58 Yellow Cress

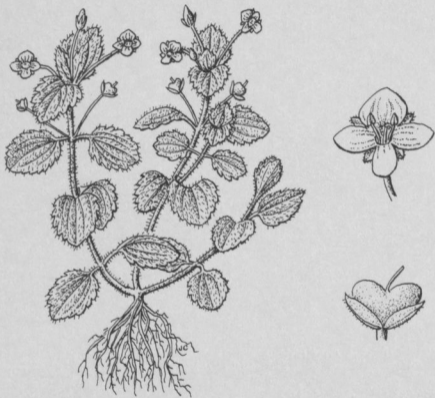
(*Rorippa sylvestris*)

Yellow cress is a member of the mustard family. Its flattened rosette makes it an ideal turf weed, but its rootstalks and rhizomes make it especially adaptable to these conditions. This perennial can creep and spread to form large turf-smothering patches. Leaves are long, narrow, deeply cut and lobed. In turn, each lobe has very irregular edges. If allowed to grow, yellow cress has slender and ascending branches. They are topped by clusters of tiny yellow flowers with four petals. Seed pods are slender and point upward. Yellow cress is most common in states east of the Mississippi, but not in the deep South.



Birds-eye Speedwell 59

(*Veronica persica*)

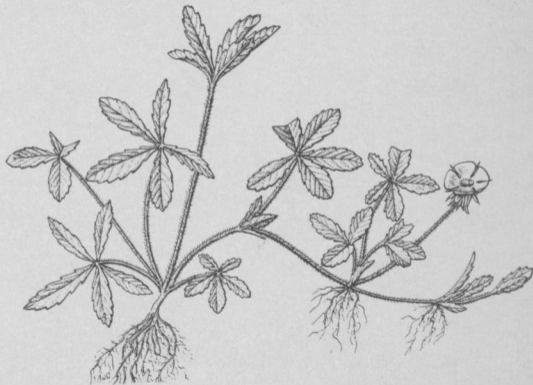


Many of the speedwells were first introduced as rock garden species, but they soon escaped to grow in many unwanted places. This particular annual has branches which grow prostrate, or weakly ascending, and they often root at the lower nodes. Leaves are opposite each other, hairy, rounded and deeply notched along the edges. Upper leaves are somewhat longer than broad. Flowers are found on slender stems at the top of the plant. They are bright blue with darker stripes and nearly white centers. Birds-eye is widespread across North America.

60 Cinquefoil

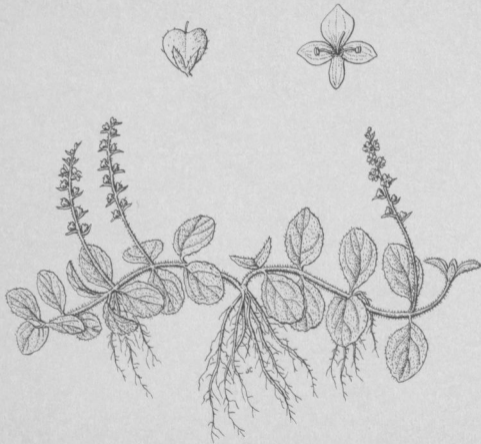
(*Potentilla simplex*)

The presence of this perennial often indicates a general lack of soil fertility. Cinquefoil creeps and spreads by long, woody runners. It roots at the nodes and new plants arise along with additional creeping stems. It is a tough, wiry plant that is often confused with wild strawberry. Leaves of the two plants are quite similar, but cinquefoil divides into five parts, while strawberry divides into three. Cinquefoil leaves also have a white, wooly undersurface. Several other species of the cinquefoil family have three-part leaves, but these plants grow upright and seldom appear as turf problems. Flowers of cinquefoil have five bright yellow petals, while those of strawberry are white.



Common Speedwell 61

(*Veronica officinalis*)

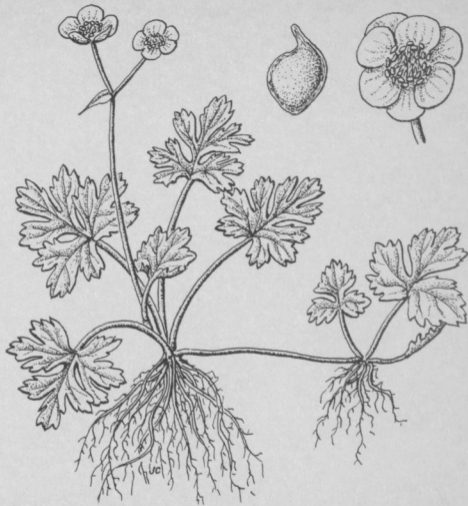


The genus *Veronica* is responsible for a number of difficult to control turf weeds. Speedwell, which is the common name, refers to the swift way this family grows and spreads. Common speedwell is certainly not the most difficult weed problem in this family, nor the most common. It grows in various places throughout the eastern half of the United States, except the deep South. Leaves are rounded, opposite each other and covered with hairs. It spreads by rooting at these leaf junctions and forms dense patches. Flowers are pale blue, marked by darker lines. Seed capsules have the typical heart shape.

62 Creeping Buttercup

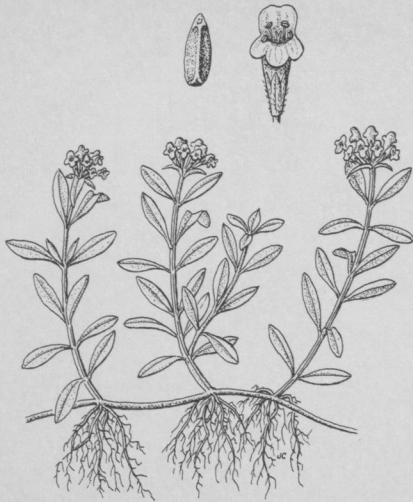
(*Ranunculus repens*)

When this attractive plant becomes well established, it can smother large areas of turf. It is also quick to fill in where the turf is thin. Creeping buttercup develops numerous stolons, which may be up to three feet long. Each joint can take root and develop many new plants. Leaves are dark green, divided into three segments and each leaflet is in turn divided into more segments. The central leaflet is always on a terminal stalk. The flower of creeping buttercup is a bright golden yellow, with five to seven petals. It thrives in the Northeastern states and is also abundant in the Pacific Northwest.



Creeping Thyme **63**

(*Thymus serpyllum*)



It is fortunate that creeping thyme is restricted to a fairly small section of the country, for this weed can be a difficult problem. It is a very small perennial that creeps and spreads by taking root along its branches. These branches are slightly four-angled with very fine hairs. Leaves are narrow, smooth, less than one inch in length with a very short stem. Flowers are formed in clusters at the top of the upright branches. They are tubular, lavender and the top is divided into two parts. The upper part is notched in the center, while the lower lip is divided into three rounded parts. This attractive little plant is common in New England and from eastern New York to South Carolina.

64 Dayflower

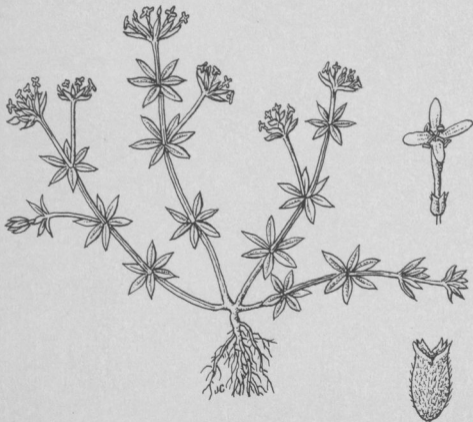
(*Commelina communis*)

Dayflower is among a small number of plants introduced from Asia. This annual has fleshy, succulent branches that creep and spread by rooting at the nodes. Leaves are long, narrow and pointed with parallel veins. Their stems wrap around the main branches and form sheaths. The plant gets its name from the unusual fact that each flower lasts only one day. Flowers are an attractive blue with three petals. The two upper petals are rounded and much larger than the lower. Dayflower thrives and spreads in moist shady places. It grows from the New England states south to Florida and westward to Kansas and Texas.



Field Madder 65

(*Sherardia arvensis*)



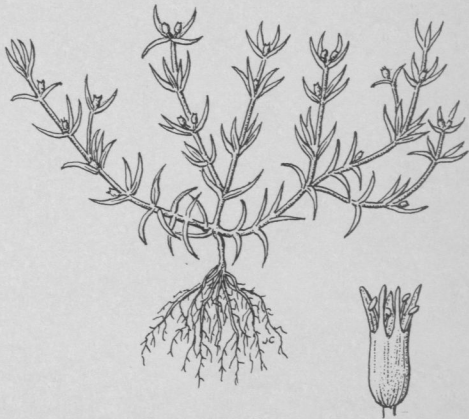
Many members of this family are turf weeds, but it also produces the plants that give us coffee and quinine. Field madder is a small plant with branches less than a foot in length. Branches are mostly four-angled and covered with hairs. Leaves grow at intervals around the branches in groups from four to six. They are about a half inch long, narrow, rough along the edges and sharp pointed. Tiny flowers from blue to pink are formed in clusters at the top of the branches. Flowers are funnel-shaped with four narrow petals. Field madder thrives in turf and waste places. It can be found in the Northeastern states and from Canada to Tennessee. It is also found on the West Coast.

66

Knawel

(*Scleranthus annuus*)

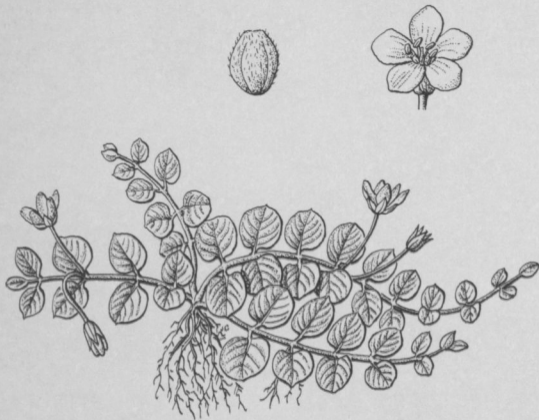
Few seeds become established in turf with as little notice as knawel. This tough little annual starts growth in very early spring and its grass-like features make it very inconspicuous. It lies close to the ground, spreads and avoids the blades of the sharpest mower. Leaves are awl-shaped and sharp pointed. They are opposite each other on spreading branches. Flowers are small, green and spiny to the touch. Their outer leaves form a cup that holds the seed. This plant is found from Canada to Minnesota, along the Eastern states to Florida and occasionally in the Pacific Northwest. It is most troublesome in the mid-Atlantic states.



Moneywort 67

(*Lysimachia Nummularia*)

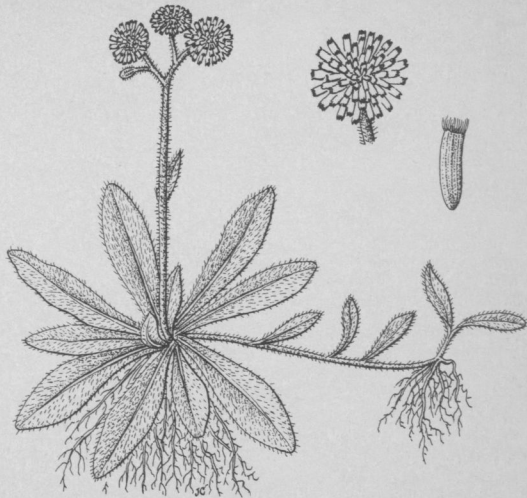
This perennial was first cultivated in flower gardens and then used as a ground cover, but like other creeping plants it refused to stay in its place. In lawns it spreads rapidly by rooting at the nodes and forms large extensive patches. Moneywort thrives in moist shady areas of turf, but seldom survives under excessively dry conditions. Leaves are opposite each other and somewhat resemble a coin, which likely suggests the name of the plant. Flowers are bright yellow, about an inch across and bloom throughout the growing season. Moneywort is not considered a major turf problem, but it can be quite troublesome in certain situations.



68 Orange Hawkweed

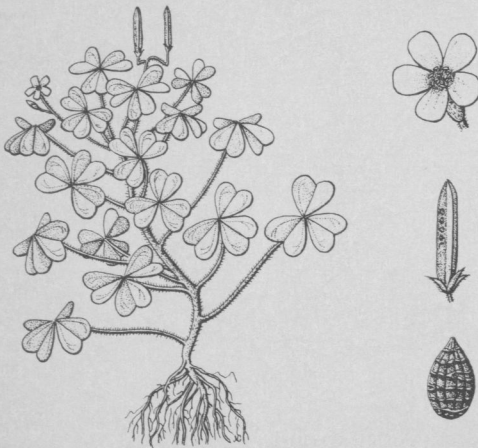
(*Hieracium aurantiacum*)

This spreading perennial also has the dubious distinction of being called “devil’s paint brush”. Orange hawkweed forms a strong rosette and sends out slender creeping stolons to establish new plants. It soon forms patches that choke and suffocate desirable grasses. Leaves in the rosette are long, narrow and rounded at the tip. The entire plant is densely covered with hairs. Flowers about an inch across are formed in clusters at the top of a simple, unbranched, leafless stem. They are a combination of flaming orange and red ray petals that are toothed at the tips. Orange hawkweed is common from New Brunswick to Ontario, southward to Virginia. It also occurs in the North Central states and occasionally in the Pacific Northwest.



Oxalis 69

(*Oxalis stricta*)

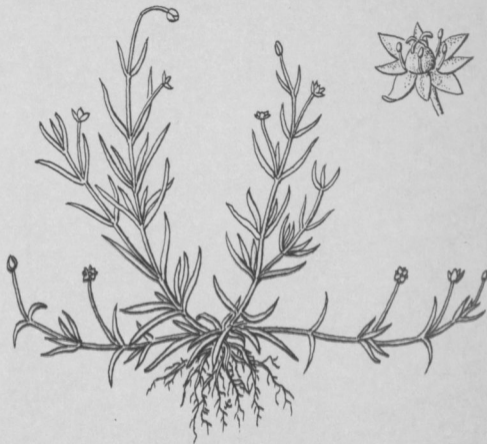


Oxalis is an upright perennial that roots at the lower nodes. However, these new roots do not give rise to rhizomes or new plants. Its three, pale green leaflets are heart-shaped and very similar to those of clover. Since oxalis contains an abundance of oxalic acid, leaves are sour and bitter to the taste. Stems are sparsely covered with fine hairs. Flowers are small, but have five conspicuous bright yellow petals. As flowers mature, cucumber shaped seedpods are formed. These pods are equipped with a built-in triggering mechanism. When completely dry, the slightest touch will send seeds scattering for several feet in all directions.

70 Pearlwort

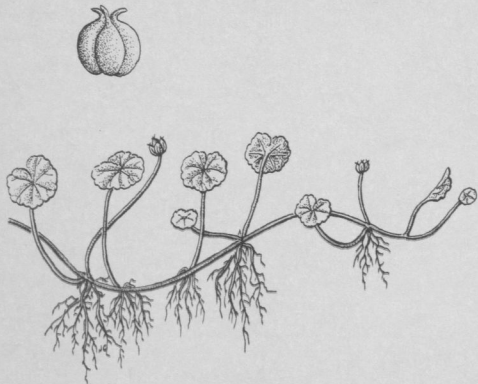
(*Sagina procumbens*)

Pearlwort is a very small matted perennial that occurs in cool moist climates. It is a grass-like plant that becomes particularly troublesome on golf greens and other closely mowed areas. Pearlwort generally creeps from a matted rosette and forms similar rosettes along its creeping branches. Leaves are very narrow, pointed and mostly opposite each other. Flowers are tiny and inconspicuous with four small petals and four longer sepals. They are generally found on long stems near the tips of the branches. Although pearlwort is one of the smallest weeds in turf, it can also be one of the most troublesome.



Pennywort 71

(*Hydrocotyle rotundifolia*)



This tiny, spreading perennial is a member of the parsley family. It is a very common turf weed from the Middle Atlantic states westward through Kentucky. Pennywort is often confused with ground ivy, but they have many varying characteristics. Leaves of pennywort are alternate, nearly round, smooth and glossy, with slight indentations around the edges. They are perched atop slender stems. Pennywort creeps and spreads through the grass until it forms nearly solid patches. The plant takes root wherever leaves join the trailing stems. Tiny flowers are crowded in clusters and each has five very small petals. In some areas pennywort is used as a ground cover.

72 Rabbit-foot Clover

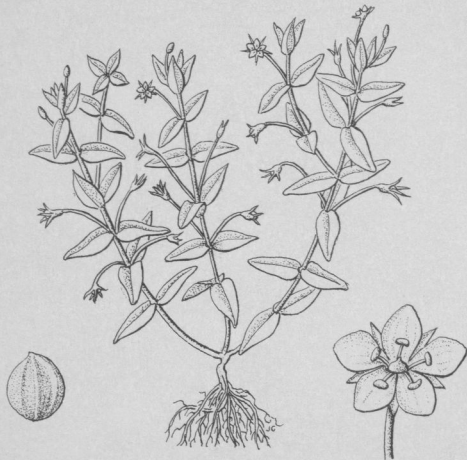
(*Trifolium arvense*)

This clover is able to thrive on very dry and sandy soils, primarily in the eastern half of North America. It is an annual with many branches, that grows from six inches to a foot in height. The plant is slender, erect and covered with very fine, silky, gray hairs. Leaves are composed of three long, narrow leaflets and they are attached to the spreading branches by short stems. Long, pointed paper-thin stipules cover this junction. The white to pinkish flowers are in dense cylindrical clusters a half inch to an inch in length. Rabbit-foot clover seeds heavily and spreads rapidly in the right environment.



Scarlet Pimpernel 73

(*Anagallis arvensis*)

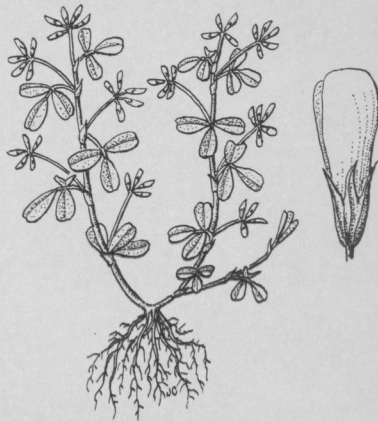


Another name for this annual is “poor-man’s weather-glass”, which refers to a characteristic of closing its flowers at the approach of bad weather. It originated in Europe, but can now be found across most of the North American continent. Scarlet pimpernel is a delicate, low growing plant that is most often confused with chickweed. Its pointed leaves are broadest near the base and are attached directly to a four angled stem. They are opposite each other and occasionally occur in groups of three. Flowers are bell-shaped and salmon colored with five petals. Scarlet pimpernel is a member of the primrose family.

74 Small Hop Clover

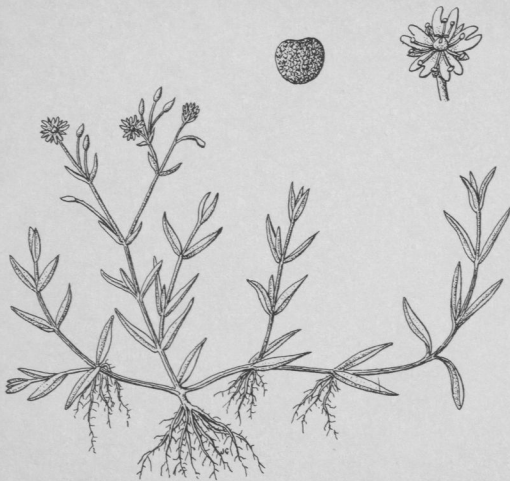
(*Trifolium dubium*)

Small hop clover is a tiny plant that has been referred to as the true shamrock. It is a rather weak plant that reaches a height of from two to ten inches. Branches are either upright or creeping. Leaflets are generally narrow and broadest near the tip, with the terminal leaflet on a short stem. Flowers are bright yellow and much looser in the cluster than other clovers. This spreading loose cluster is composed of from five to twelve individual flowers and is usually about three-eighths of an inch in width. Small hop clover is most common in the Northeastern states and states of the Pacific Northwest.



Stitchwort 75

(*Stellaria graminea*)



Stitchwort is a member of the chickweed family, but it is even more aggressive than the common or mouse-ear varieties. This perennial spreads by long, creeping, square stems that take root and give rise to new plants. Stitchwort hugs the ground and avoids the mower. It is a particular problem in eastern Canada and the north-eastern United States, but occasionally occurs on the West Coast. Leaves of stitchwort are opposite and narrow and attached directly to the stems. Tiny white flowers have five slightly notched petals. Stitchwort grows best in areas where moisture is plentiful.

76 Thyme-leaved Sandwort

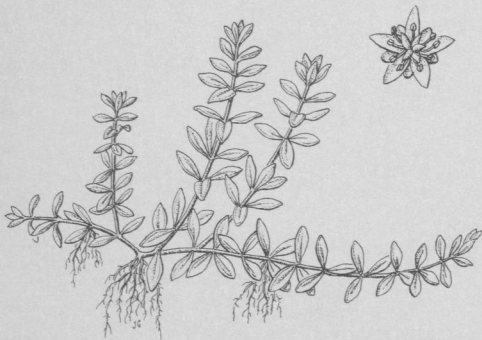
(*Arenaria serpyllifolia*)

The generic name *Arenaria* means “sand loving” and thyme-leaved sandwort is a particular problem in sandy soils. When allowed to grow, this tiny annual may reach a height of approximately six inches. It prefers areas where there is little competition. Thyme-leaved sandwort has small ovate leaves which grow opposite each other and are attached directly to the main stem. Main stems are generally simple and upright, but can be intricately branched. Flowers have five tiny white petals. Thyme-leaved sandwort grows across southern Canada and in the Eastern states.



Trailing Stonecrop 77

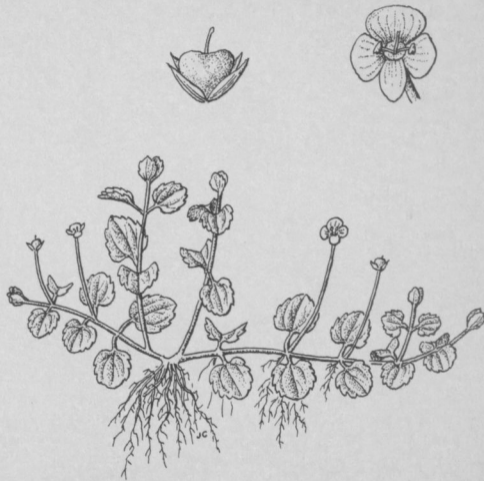
(*Sedum sarmentosum*)



Trailing stonecrop belongs to a group of fleshy plants known as Sedums. They often persist quite heavily in moist soils. Most of the Sedum family thrives in the cool climate of the northeastern United States. Trailing stonecrop is perennial and a native of China and Japan. Its succulent pointed leaves are broadest near the center. They are attached to the stems in groups of three and occasionally two. These leaf junctions send roots freely into the soil and allow the plant to spread in all directions. Flowers of trailing stonecrop have five bright yellow petals.

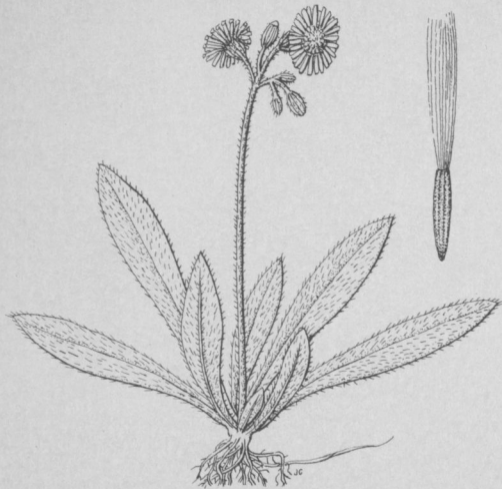
78 *Veronica filiformis*

It's quite possible that *Veronica filiformis* is the most common and troublesome speedwell in the Northeastern states. Yet, it has never been given a common name. *Veronica filiformis* is found growing in almost solid patches in turf and it has the ability to crowd out desirable grasses. As a perennial it has the capacity to persist and spread by rooting at the nodes. Leaves are opposite each other, broad and notched. Flowers are found on stems that originate at the junction of the main branch and the leaf stem. They are deep blue to violet while the seed capsule is heart-shaped. *Veronica filiformis* is found in the Northeastern states and the Pacific Northwest.



Yellow Hawkweed 79

(*Hieracium pratense*)

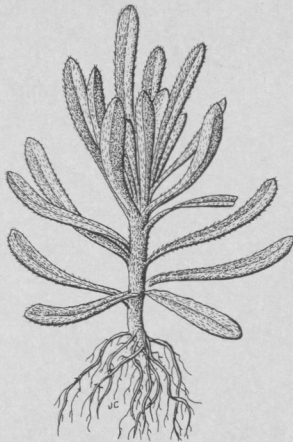


Although yellow hawkweed can be found as far south as North Carolina and Tennessee it is primarily a weed of cooler areas. It grows especially heavy in Quebec and Ontario and in states adjoining these provinces. Yellow hawkweed is a perennial that varies in height from six inches to nearly three feet. Plants are covered with bristle-like hairs and spread by seeds, slender rhizomes and stolons. Leaves are spatula-shaped and may reach ten inches in length. They appear mostly in a rosette, but an occasional leaf may be found along the following stem.

80 Cudweed

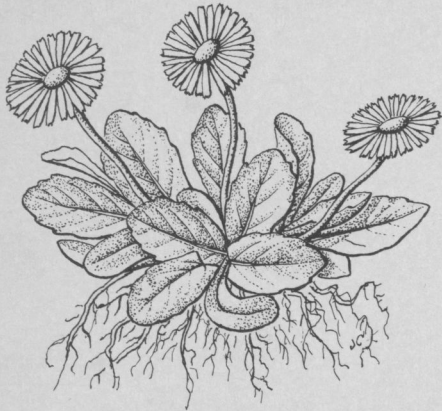
(*Gnaphalium purpureum*)

This low-growing annual seldom reaches a height of over ten inches. Soft velvet-like hairs give the entire plant a gray-white appearance. Cudweed branches at the base. Leaves are long, narrow and have a blunt tip on the lower part of the plant. Leaves at the upper part of the plant are short, narrow and stemless. Flowers are tannish-white and appear in clusters at the base of the upper leaves. Cudweed germinates in cool, moist weather, but disappears with the heat of summer.



English Daisy 81

(*Bellis perennis*)

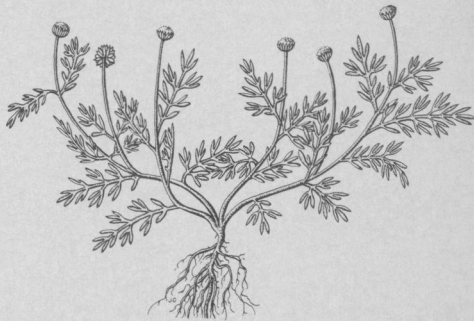


English daisy was first introduced as an attractive ornamental. It soon escaped the flower garden and became a smothering, suffocating turf weed. The leaves of this perennial vary from nearly smooth to hairy. They are rounded, slightly toothed, narrow at the base and form an extremely dense cluster. The flowering stalks, which are three or four inches tall, have typical daisy-like flowers. The outside ray petals are white to pinkish-white, while the centers, or disc flowers, are bright yellow. English daisy is capable of forming extensive patches in a very short time.

82 Brass Buttons

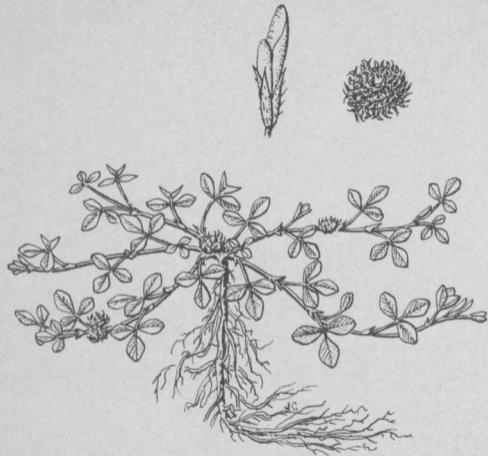
(*Cotula australis*)

Brass buttons is a slender, branching, inconspicuous winter annual that seldom grows over three to four inches tall. Its tiny leaves are finely cut into slender tapering parts. The entire plant is extremely small and weak in appearance. Brass buttons has a tendency to grow in clumps, but plants may become so thick that they are interspersed through the entire lawn. The flowers of brass buttons are about the size of a pencil eraser. They are yellow-green in color, and grow singly on stems that extend slightly above the prostrate leaves.



Bur Clover 83

(*Medicago hispida*)



This prostrate, spreading annual hugs the ground and becomes especially unsightly in closely mowed lawns. Its creeping stems may vary in length from a few inches to several feet. Leaflets are very similar to clover and black medic, but occasionally have whitish and dark red spots across the surface. Stems are round and smooth. Yellow-orange flowers are gathered in very loose clusters. Seed pods appear spirally twisted and are covered with hooked spines, or barbs. These “burs” attach themselves to almost any moving thing, and are easily transported to a new seeding place.

84 Filaree

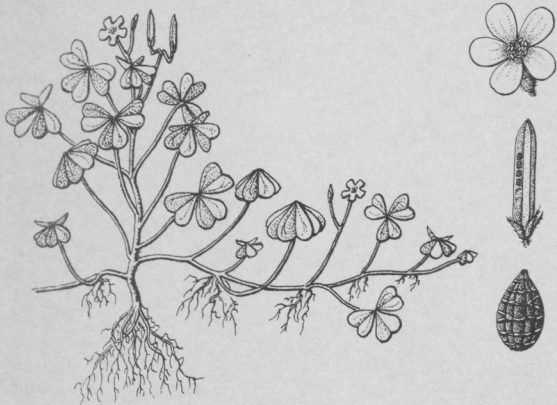
(*Erodium cicutarium*)

This annual, or biennial, with its spreading prostrate stems forms a strong rosette. The two members of this family that persist in turf are "red stem filaree" and "white stem filaree". These plants are very similar. Leaves are hairy, dark green and average about one inch in length. White stem leaves are slightly toothed, while those of red stem are deeply dissected. Flowers of both plants are small, with five petals and a bright rose-purple color. As flowers mature, a seed capsule is formed in the shape of a stork with a long bill. When completely ripe, light and moisture cause this bill to twist, coil and uncoil. This process actually makes the seed plant itself in the soil.



Oxalis (Creeping) 85

(*Oxalis corniculata*)



This creeping, spreading perennial is often a turf problem in western states. Its stems are either flattened along the ground, or slightly upright and it spreads by creeping rhizomes. Leaves are composed of three apple-green, heart-shaped leaflets and are sour and bitter to the taste. They are occasionally tinged with purple and covered with soft fine hairs. Flowers are small with five conspicuous bright yellow petals. They may be solitary or in groups of 2 to 6. Seed capsules are shaped like a miniature cucumber. They have the ability to throw ripe seeds a number of feet in all directions.

86 Prostrate Pigweed

(*Amaranthus blitoides*)

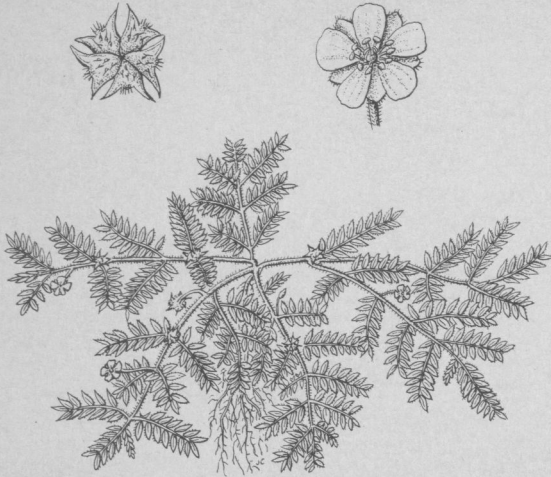
Although this plant is primarily a Western weed, it has slowly become a problem in some of the Eastern states. It thrives from Minnesota southward to Texas and across the rest of the Western area. This annual forms a mat-like growth and its branches spread from six inches to two feet. It crowds out desirable grasses and avoids damage from mowing. Leaves are bright green, shiny, broad across the center and mostly rounded at the tip. The spreading stems are whitish-pink and fleshy. Small, inconspicuous, greenish flowers are found on spikes that rise from the junction of leaf stem and branch. Prostrate pigweed is a heavy seed producer.



Puncture Vine 87

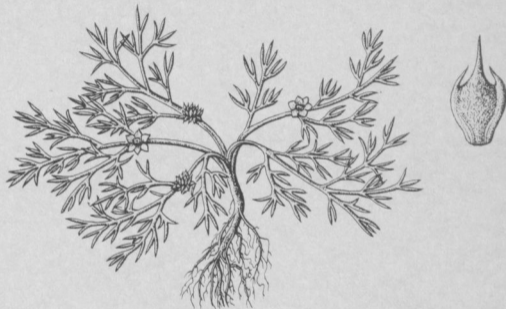
(*Tribulus terrestris*)

This prostrate annual may send out stems that branch from one to six feet. In turf the spines of the burs point upward and are exposed to bare feet, animals or bicycle tires. They can pierce deeply and cause extreme pain. Seeds within the bur are also transported from place to place by fastening to any moving object. Puncture vine leaves are mostly opposite each other and each leaf is composed of four to eight pairs of leaflets. The entire plant is covered with silky hairs. Pale yellow flowers with five petals are on short stems at the junction of leaf and branch. Puncture vine is a problem of the deep South and from Colorado westward.



88 *Soliva sessilis*

Soliva sessilis is an extremely small, low-growing annual. It has become a turf problem in scattered areas, but this South American import is capable of spreading rapidly. Like other weeds, *Soliva sessilis* can make the grass unattractive, but its sharply pointed seeds easily pierce the skin and make it even more undesirable. It reaches a height of three or four inches and spreads out to about six inches. Leaves are finely divided into narrow segments and its branches often appear twisted. The entire plant is covered with fine hairs. Inconspicuous greenish flowers are attached directly to the spreading stems.



Cut-leaved Evening Primrose 89

(*Oenothera laciniata*)



This primrose is most often found in cultivated fields, pastures and waste places. It is an annual that is most troublesome in the Southeastern states. In those areas it germinates in the winter or early spring and lies in a rosette close to the ground. Leaves of cut-leaved evening primrose are long, narrow, deeply cut and divided. The midvein is quite prominent. When allowed to mature, it produces bright yellow flowers with five petals. Cut-leaved evening primrose is a particular problem from Pennsylvania and New Jersey southward through Florida and Texas.

90 Prickly Sida

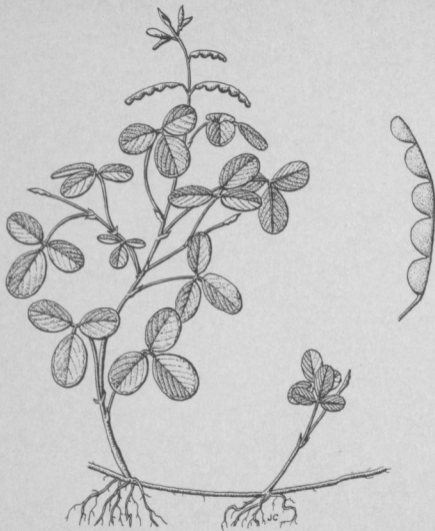
(*Sida spinosa*)

Prickly sida originated in tropical America and then spread northward and westward. Today it is common throughout the Southern, Eastern and Midwestern states. The branching, upright growth of this plant seldom reaches more than one foot. When cut by a mower, it merely sends up new growth from the base. Prickly sida is an annual that gets its name from the spines or "prickles" which form at the base of the leaf stems. Leaves are alternate, oblong and toothed along the edges. Flowers are small, with five pale yellow petals. It forms a seed capsule with five one-seeded sections and two sharp spines at the top.



Beggarweed 91

(*Meibomia purpurea*)

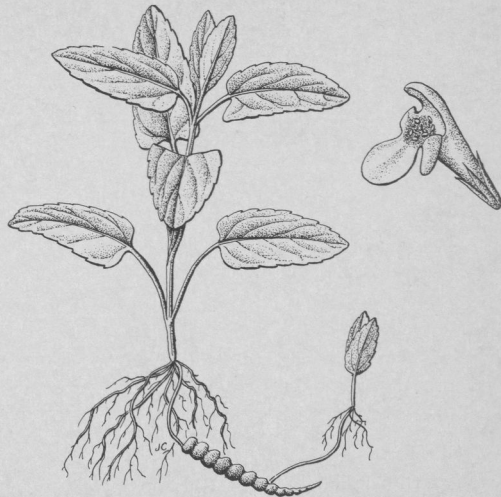


A woody perennial with a strong, underground root system. Leaves are composed of three round leaflets. The middle leaflet is slightly larger and is extended on a short stem. Small purple-pink flowers rise above the ground and with maturity develop into flattened seeds similar to bean pods. These jointed pods break into separate parts, stick to clothing and animals and are transported from lawn to lawn. Beggarweed is often confused with clover. Leaflets of clover are equal in size and each is attached to the main stem in the same manner. Beggarweed is a much tougher, stronger plant than clover and more difficult to control.

92 Betony

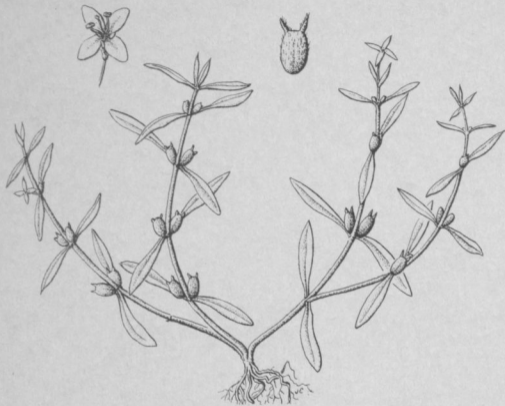
(*Stachys floridana*)

Betony is a perennial that acts very much like an annual. It first appears in cool, moist winter weather and spreads rapidly from underground white tubers. Leaves are opposite each other on a single, unbranched, square stem. They are broad at the base and taper to a rounded tip. Edges are serrated, or saw-toothed. Like other members of the mint family, betony has typical trumpet-shaped, lavender flowers. As hot weather approaches, betony disappears, but tubers remain alive in the soil to produce new plants for the following year.



Buttonweed 93

(*Diodia teres*)

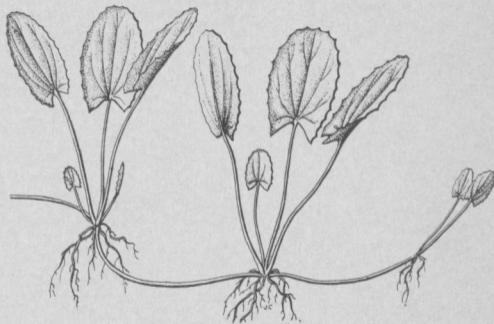


Buttonweed is a creeping, spreading annual. Its long, narrow leaves make it particularly difficult to distinguish in lawns with broad-bladed grasses. They are opposite each other, attached directly to long, trailing stems and generally covered with soft, inconspicuous hairs. Round button-like seed capsules are formed at the junction of the leaf and the stem. Four white petals give the buttonweed flower a star-like appearance.

94 Centella

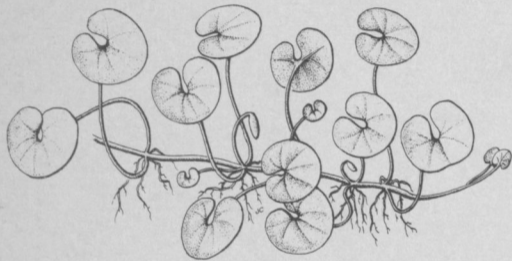
(*Centella repanda*)

Centella is a low-growing creeping perennial that thrives in moist, sandy soil. Leaves rise in clusters at regular intervals along strong underground stems. They are rounded, or fan-shaped, and point upward. Margins of the leaf are finely scalloped and often tinged with red. Flowers of centella are seldom seen. They are greenish-white and grow inconspicuously near the surface of the soil. If centella is allowed to grow unchecked, it can soon cover large areas of turf.



Dichondra 95

(*Dichondra repens*)



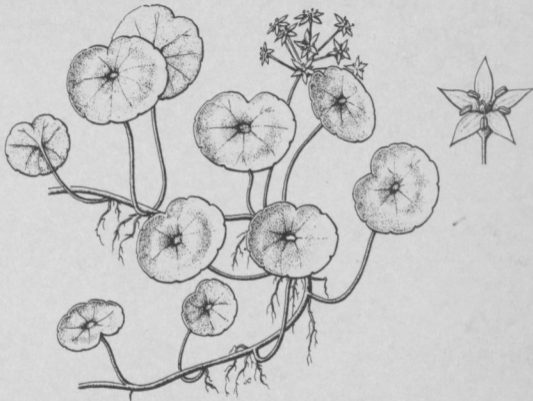
Dichondra is a perennial that thrives in warm, tropical areas. In solid stands it makes a pleasing but rather delicate lawn. It spreads by slender, creeping stems that root at the nodes. Kidney-shaped leaves grow opposite each other along the main stem. Flowers of dichondra are small, greenish and inconspicuous. They are located along the main stem below the level of the leaf. Dichondra thrives in moist soils, but has little ability to withstand freezing temperatures.

96

Dollarweed

(*Hydrocotyle umbellata*)

Dollarweed is an aquatic, or water-loving, perennial that thrives in warm, temperate regions. Freely branching stems creep and spread by rooting at the nodes. Leaves are bright green, round, fleshy and have slightly wavy margins. They appear to be centrally balanced on tall, upright stems. In lawns, flowers of dollarweed seldom have a chance to develop. They are tiny, with five star-shaped white petals. Each flower is borne on an umbrella-shaped cluster. Dollarweed receives its name from the similarity in leaf shape to the silver dollar.



Florida Pusley 97

(*Richardia scabra*)



This low-growing, loosely branched annual is common in all tropical areas. The entire plant is covered with soft hairs. Broad, oval leaves taper to a point and are opposite each other along the main stems. Florida pusley often hugs the ground, forms dense patches and easily smothers good turf. Clusters of tiny, white, star-shaped flowers are found at the base of the uppermost leaves. Branches are often tinged with red. Florida pusley is also known as Mexican clover.

98 Lespedeza

(*Lespedeza striata*)

Lespedeza is a wiry, tough, dark green plant that closely resembles clover. It grows so close to the ground that it is seldom disturbed by a mower. Lespedeza can easily choke out thin, undernourished turf. Leaves are composed of three leaflets that sometimes have soft hairs along the margins. They are most easily identified by the many prominent veins that grow nearly perpendicular to the mid-vein. Lespedeza has a small flower that ranges from pink to lavender. This woody perennial is sometimes difficult to control, but seldom competes with good, dense turf.



Matchweed 99

(*Lippia nodiflora*)

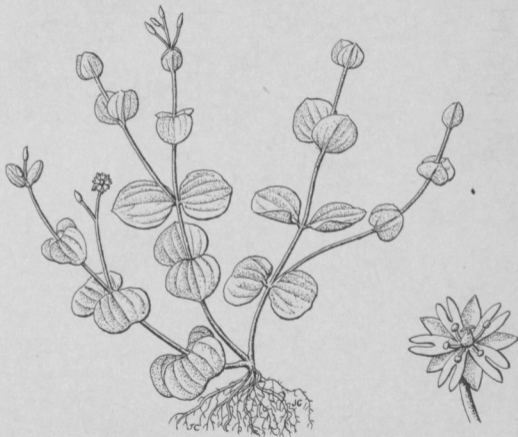


This prostrate perennial, with long creeping stems, can soon overcome large areas of desirable turf. The tough, wiry stems root freely at the nodes and give rise to many new plants. Leaves are opposite, wedge-shaped, thick, tooth-like along the edges and rounded at the tip. Purple buds are very similar to a kitchen match and rise from axils of leaf clusters. These buds are soon covered with tiny pink to white flowers. In some areas of the country, members of the matchweed family are used as ground covers.

100 Tropical Chickweed

(*Drymaria cordata*)

This annual generally germinates during the cooler weather of winter and spring in the deep South. It prefers areas with plenty of moisture and also grows well in the shade. Stems of tropical chickweed are weak and usually bend to a prostrate position. Leaves are opposite each other on very short stems. They are bright green and round or kidney-shaped. Flowers are inconspicuous and formed in small clusters from long stems that rise from the leaf junction. There are five white petals that are very narrow and deeply notched. Seed capsules are oval. Tropical chickweed thrives in Florida and around the Gulf coast into Texas.



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