

CHAPTER XI

WEEDS AND THEIR CONTROL

WEEDS on golf courses become a serious problem only on the putting-greens. For practical purposes they may be considered in two classes, the perennials that live year after year, and the annuals.

The perennials include various plants of creeping habit that thrive under close turf conditions. Among these are white clover, yarrow, mouse-ear chickweed, ground ivy, pearlwort, sheep sorrel, thyme-leaved speedwell, carpenter-weed, creeping thyme, and selaginella. Other species of perennial weeds have stout taproots, such as dandelion, ox-eye daisy, plantain, and buckhorn.

Annual weeds may also be considered in two classes, namely, winter or spring weeds, and summer weeds. The former include such plants as shepherd's-purse, smooth chickweed, and whitlow-grass. The most serious summer annuals are goose-grass, pigeon-grass, and, worst of all, crab-grass.

Under certain circumstances mosses may become troublesome.

Creeping rooted perennials are satisfactorily destroyed only by cutting out the whole piece of sod and replacing with good sod. Some of the creeping weeds such as white clover, yarrow, pearlwort, creeping thyme, and others make a very fair putting surface. Such weeds are objectionable both on account of the patchy appearance they give the greens and the unevenness of the turf which they produce. It is useless to combat creeping weeds by attempting to pull them out or by pulling off the stems and leaves. All of them possess underground stems, and these will continue to form new shoots. Chemical weed-destroyers are likewise useless against such weeds, as the underground stems are not reached by any but very heavy applications, such as would prevent any other plant from growing in the spot until the chemicals were removed.

Annual weeds that form a rosette of leaves like shepherd's-purse and whitlow-grass are easily weeded by hand or they may be destroyed by chemical sprays. Such weeds are, however, rarely troublesome, and then mainly in old run-down or neglected greens or on poorly seeded new greens.

Common chickweed sometimes appears as a weed on greens in early spring or southward in winter. It rarely causes any serious trouble. Where abundant it may be destroyed without injuring the grass by spraying with a solution of arsenite of soda, using eight pounds to fifty gallons of water.

Summer annuals, especially the weedy grasses, goose-grass, pigeon-grass, and crab-grass, often are extremely troublesome and very expensive to control. At the present time the only practical method of destroying them is hand-weeding, which should be commenced as soon as the weeds are large enough to pluck. Where they are abundant, however, this requires a large force of laborers.

As is well known, all these weedy summer grasses are at once killed by a heavy frost. Attempts have been made to devise a satisfactory machine to kill them by freezing, but thus far the expense of the necessary portable refrigerating machine has been prohibitory.

In the construction and maintenance of putting-greens, every effort should be made to prevent weed seeds from becoming scattered on the green. With proper bunkering, few weed seeds should reach the green through the agency of the wind or by wash-

ing during heavy rain storms. Fertilizers used as top-dressings should be weed-free. Particularly is this true of barnyard manure, which should never be used unless it has been carefully composted for at least one year. Otherwise the advantage of such a top-dressing is largely counterbalanced by the great number of weeds introduced. On properly protected greens the expense due to weeding should by thorough work become less each succeeding season.

The use of ammonium sulfate to destroy certain weeds, especially White Clover, is often advocated. The evidence indicates clearly that on plots heavily and persistently fertilized with this substance, White Clover does tend to disappear. This is due partly to the fact that the grass is stimulated far more than the clover, but perhaps also to the chemical really injuring the clover. However, sulfate of ammonia is a very caustic substance, and great care must be exercised in applying, as an overdose will scorch grass badly.

White clover (Trifolium repens). — This plant (Plate VII) is too well known to require description. It is a common constituent of lawns everywhere in the United States except the extreme South, coming

spontaneously if not planted. On fairways it is not at all objectionable, but really desirable. On putting-greens it occurs too commonly, and while it provides a fair putting surface, it is inferior to the fine grasses. Cutting out the sod where it occurs is a radical and indeed the only satisfactory method of eradication, but one rarely adopted.

Mouse-ear chickweed or "*Creeping Charley*" (*Cerastium vulgatum*).—*Mouse-ear chickweed* (Plate XVII) is a European plant abundantly established as a weed in American pastures and lawns. It is unfortunately often found as an impurity in commercial fine grass seeds. From this source it becomes commonly established in putting-greens. The plant is readily distinguished by its oblong entire hairy leaves in pairs on the stems. It prefers well-drained soils. The plant does not make a good turf, and it is in every way objectionable. When young, the plants can sometimes be wholly removed by careful weeding, but usually it is best cut out bodily and replaced by a patch of good turf.

Yarrow (*Achillea millefolium*).—*Yarrow* (Plate VII) is native both to Europe and America. A small proportion of seed as an impurity is not uncommonly found in fine grass seeds. It is mainly

from this source that it finds its way into putting-greens, but in many places it may come from native plants, as the seeds are very light and easily blown about. Adult plants are two to five feet high, but on putting-greens individual plants make a dense mat often a foot or more in diameter. Such turf makes a fairly satisfactory putting surface, not as good as fine grasses, although some golfers have advocated its use for putting-greens. Under putting-green conditions, yarrow never spreads except as the individual plants become larger, as there is no opportunity for it to form seed. To eradicate yarrow, the turf must be removed bodily.

Sheep sorrel (*Rumex acetosella*). — Sheep sorrel is a very well known weed, especially abundant in poor pastures, but very frequent in lawns and greens. The seeds unfortunately often occur as an impurity in fine grass seeds. Sheep sorrel is in every way an objectionable weed on putting-greens. It may sometimes be pulled out by hand-weeding, but usually it is necessary to lift the piece of turf, as the rootstocks are deep and tough. Sheep sorrel is often considered to be an indication of "acid" soils, but this idea probably arose as a psychological confusion, the plant itself being

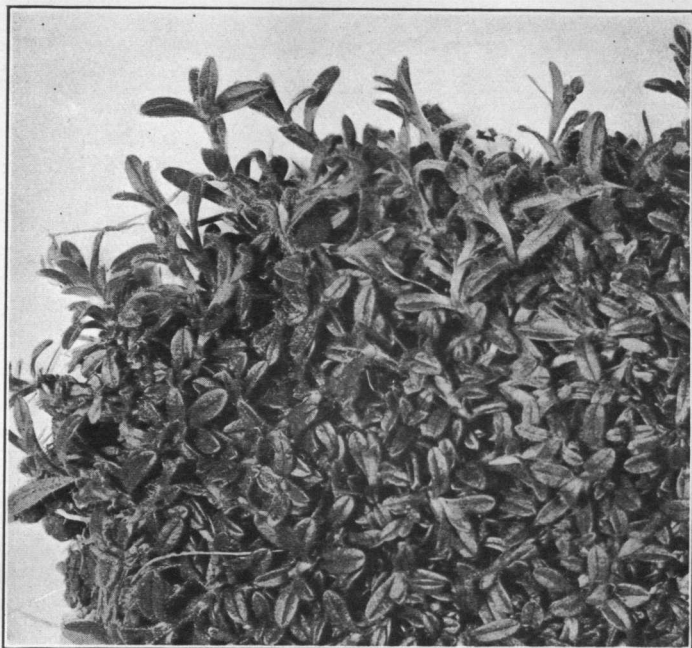


PLATE XVII.—Upper. Mouse-ear Chickweed or “Creeping Charley” (*Cerastium vulgatum*), natural size, one of the commonest troublesome weeds on putting-greens. The seed is often present as an impurity in fine grass seeds.

Lower. Creeping Thyme (*Thymus serpyllum*), twice natural size. This weed makes a fairly good putting surface but detracts from the beauty of a green.

acid. Sheep sorrel will thrive even where lime is abundant.

Pearlwort (*Sagina procumbens*).—This little plant (Fig. 41) has narrow leaves and much resembles grass turf. It is dark green in color and makes circular patches two inches to nearly a foot in diameter. The older patches tend to die out at the center. The flowers and seeds are produced

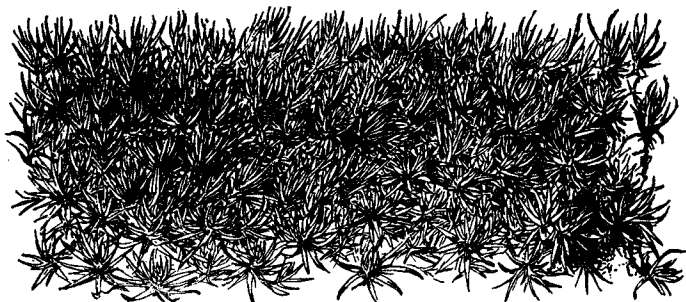


FIG. 41. — Pearlwort (*Sagina procumbens*), troublesome mainly on northern golf courses.

close to the ground, so that after the plants have matured, the seed becomes scattered about in mowing and watering the green. Pearlwort thrives especially in greens that become soggy, but occurs even where the drainage is satisfactory. In some cases it spreads so as to make up a very considerable element of the turf. As a putting surface it is only fair, the leaves being too succulent. Cutting out

is the only satisfactory remedy known, and this should be done as soon as the plants are detected, as otherwise the seed will become spread over the green.

Thyme-leaved speedwell (*Veronica serpyllifolia*). — This plant (Fig. 42) is native to Europe and perhaps also to America. It occurs very commonly as a



FIG. 42. — Thyme-leaved speedwell (*Veronica serpyllifolia*). Often abundant on poorly drained putting-greens.

weed, especially in moist or ill-drained pastures and lawns. When closely clipped the plant makes a dense mat, a single plant often forming a circle two or three feet in diameter. It is rather too coarse for a good putting surface. Seed of it is not uncommon as an impurity in fine grass seeds, but where established it will form some seeds very close to the earth. Well-drained soils are not favored

by this plant; indeed its presence is always a clear indication of poor drainage. Cutting out the plants bodily is the only satisfactory method of eradication.

Creeping thyme (*Thymus serpyllum*). — Creeping thyme (Plate XVII) is a native of Europe, but now common in lawns and pastures in the northern states. Seeds of it not rarely occur in fine grass seeds. Perhaps of all the weedy plants, creeping thyme makes the best turf so far as putting is concerned. In grass turf, however, it is unsightly, even if its putting surface is not especially objectionable. It must be removed bodily to insure its destruction.

Carpenter-weed or heal-all (*Prunella vulgaris*). — This European plant (Fig. 43), a common weed in pastures and old lawns, is occasionally found



FIG. 43. — Carpenter-weed (*Prunella vulgaris*). Common in northern lawns and greens, the seed being a frequent impurity in grass seed.

in putting-greens. The seeds may occur as an impurity in fine grass seeds. While the plants will make a dense creeping turf, the leaves are too coarse for putting purposes. Lifting the turf occupied by this weed is the best practical way to destroy it.

Water pennywort (Hydrocotyle americana). — This introduced plant (Fig. 44) much resembles ground

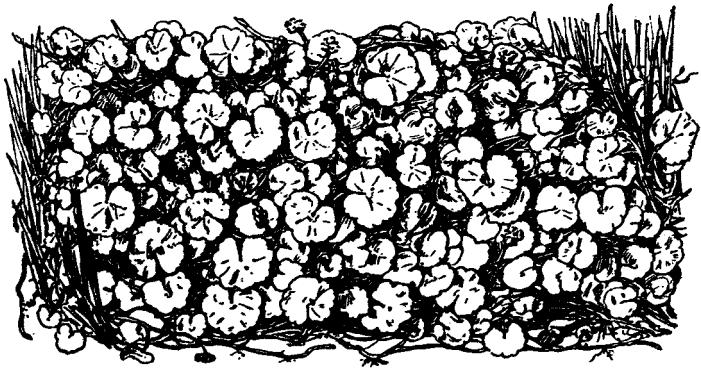


FIG. 44. — Water pennywort (*Hydrocotyle americana*), a common turf former in ill-drained soil.

ivy, but the leaves are smooth, shiny, and somewhat fleshy and the flowers are very small and inconspicuous. Its occurrence in a lawn or green is an indication that the soil is so moist as to need drainage.

Ground ivy (Nepeta hederacea). — This creeping plant often forms extensive patches in lawns and

occasionally on putting-greens. It is native to Europe but is now a common plant in America, often occurring in abundance in shady woods near towns. Its peculiar leaves, and when in bloom its numerous blue flowers, make it easily known. It thrives under close clipping, but does not make a good putting turf. To destroy ground ivy it must be removed completely by lifting the turf so as to secure all the underground creeping stems.

Selaginella (*Selaginella apus*). — This is a native moss-like plant with yellowish green foliage. Its occurrence in putting-greens is always evidence that the drainage is poor, as selaginella grows only in springy places.

Dandelion (*Taraxacum officinale*). — This weed is familiar to all. On account of its large tap-root it is almost impossible to dig it out completely without injury to the grass turf. It may easily be destroyed, however, by the use of gasoline injected into the crown of the plant with a sharp-pointed oiling can or by touching it with a few drops of sulfuric acid.

Plantain or rib-grass (*Plantago major*). — This is a very well known weed often found in lawns because its seed is a common impurity in grass seeds.

It is easily dug out or may be destroyed as recommended for dandelions.

Buckhorn (*Plantago lanceolata*). — This very common weed also becomes spread because its seed is so frequently an impurity in grass seeds. It may be destroyed in the same manner as plantain.



FIG. 45. — Goose-grass (*Eleusine indica*), a summer weed frequently invading putting-greens.

Goose-grass (*Eleusine indica*). — This summer grass (Fig. 45) is sometimes abundant, but never as troublesome as crab-grass. It is distinguished by its flattened stems and sheaths, the latter often whitish. Goose-

grass makes circular patches two to six inches in diameter, but it has no creeping stems. It is easily removed by weeding.

Pigeon-grass (*Chætochloa lutescens*).—This grass (Fig. 46) is next to crab-grass the worst summer weed on putting-greens.

It may be distinguished from crab-grass as shown by Figs. 25 and 26.

Crab-grass (*Syntherisma sanguinalis*) (Fig. 47).—

Crab-grass is by far the most troublesome summer weed on putting-greens.

It appears in early summer and persists till killing frost in fall. During

early autumn when the nights become cool, the leaves

assume a purplish hue. This grass

thrives only in the open and will not endure constant shade, a fact that unfortunately cannot be utilized



FIG. 46.—Pigeon-grass (*Chætochloa lutescens*), an annual grass often troublesome as a summer weed in putting-greens.

on putting-greens. Crab-grass spreads by stems which creep on the surface so that one plant will often make a mat one or two feet in diameter. It is often abundant enough, unless weeded out,



FIG. 47. — Crab-grass (*Syntherisma sanguinalis*). This is the worst of all summer weeds, especially in middle latitudes.

to occupy the whole green, in which case it is endured only as a matter of necessity (Plate VI). At the present time there is no satisfactory way to destroy crab-grass except by hand-weeding. This should be commenced just as soon as the plants are large enough to pluck.

Dichondra (*Dichondra repens*). — This plant

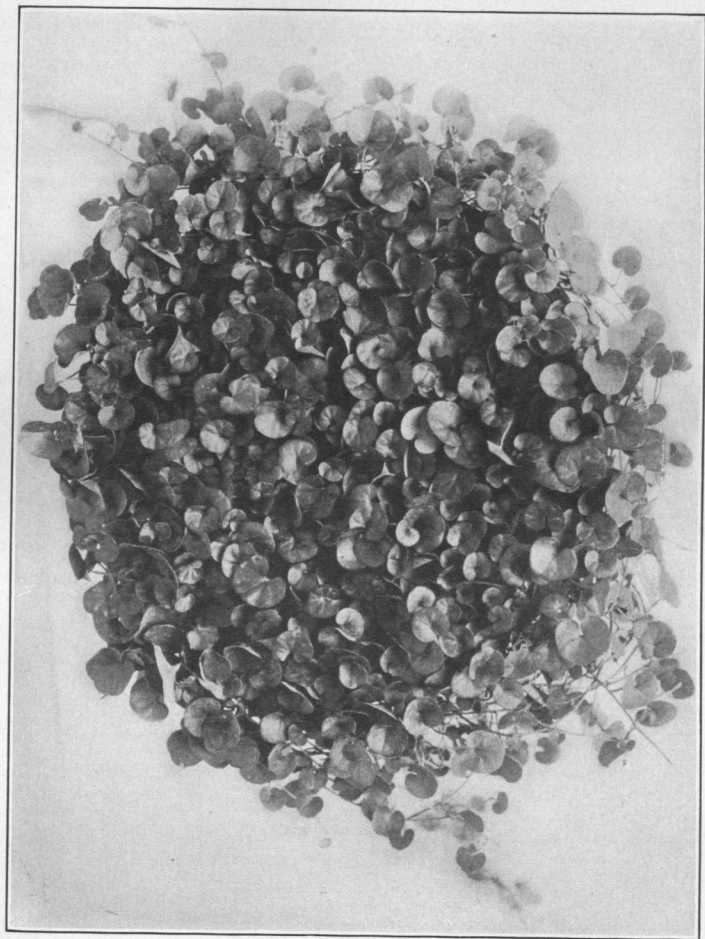


PLATE XVIII.—*Dichondra* (*Dichondra repens*), a common weed in the South in lawns and putting-greens. It makes turf of fair quality.

(Plate XVIII), which has no popular name, occurs in the South from Virginia to Texas, and is common in lawns and pastures. The plant is easily recognizable by its kidney-shaped, rather pale green leaves, and by its close creeping stems. The very small, pale green flowers appear in spring. *Dichondra* is a very frequent weed in turf in the South. On putting-greens it provides a surface as good or possibly slightly better than White Clover. In Bermuda-grass, however, the pale green, rather coarse foliage of the *dichondra* detracts from the appearance of the turf. To eradicate *dichondra* the plants



FIG. 48. — Nut-grass or coco (*Cyperus rotundus*). A grass-like weed with small tubers, very difficult to eradicate.

of the turf. To eradicate *dichondra* the plants

must be removed bodily by lifting the turf where it occurs.

Nut-grass or coco (Cyperus rotundus). — Nut-grass (Fig. 48) is really a sedge, and to the southern farmer a very notorious weed. The plant has slender, grass-like pale green leaves and grows to a height of two to twelve inches. Its weediness is due to its producing small underground tubers, which are exceedingly difficult to destroy. The plant also produces abundant seed. In fine turf, nut-grass is mainly objectionable on account of its pale green color, but the leaves are rather stiffer than is desirable for putting. On putting-greens it may be combated by hand-weeding, but it is exceedingly difficult to remove all the tubers with the plant.