

8. Pigweeds and Relatives

AMARANTHACEAE, PIGWEED FAMILY

PLANTS ANNUAL. Leaves alternate or opposite (alternate in our weedy species). Flowers small, without petals, subtended by small bristly bracts. Fruits one-seeded, the thin pericarp in our weedy members releasing the lens-shaped, shiny black seeds.

The seeds in this and the following groups, as well as the Pink family, are similar in that they are usually rounded or horseshoe-shaped and possess a marginal embryo surrounding a central, stored food tissue. Presumably they are evolutionarily related, the pigweeds and relatives having been derived from Pink-like ancestors through loss of petals and reduction of the several-seeded capsule of the Pinks to a one-seeded fruit.

Amaranthus, Pigweeds. Flowers perfect or some of them unisexual but all in the same inflorescence; plants similar to one another as to flowering habit (contrast with *Acnida* below).

There are species of pigweeds in all parts of the country, and they are among the more common invaders of cultivated soil and waste areas.

Amaranthus retroflexus, Rough pigweed, Redroot pigweed.

p51 Plants erect, with dull, usually pubescent, ovate-lanceolate leaves and dense terminal spikes of flowers. Seeds small, 1.0-1.2 mm. across. Abundant, cultivated land, gardens, farm lots. Summer and fall. Seeds common in legume, oats, and soybean seed.

Amaranthus graecizans (*A. blitoides*), Prostrate pigweed.

p52 Plants prostrate. Flowers in inconspicuous clusters in the axils of the leaves. Seeds similar to those of *A. retroflexus* but larger, 1.5 mm. in diameter. Common, gardens, fields. Late summer and fall.

Amaranthus albus (*A. graecizans*), Tumbling pigweed. Plants

p52 erect, densely branched, becoming almost spherical at maturity. Flowers in axillary clusters. Seeds nearly indistinguishable from those of *A. retroflexus*. Most common in western extremities of range but locally abundant throughout, cultivated and waste ground. Late summer and fall.

Amaranthus spinosus, Spiny pigweed. Similar to rough pigweed in appearance but with spiny branches. A southern weed which

p53 occurs only in the southern portion of our range.

Acnida, Water hemp. Plants similar to rough pigweed in appearance, but with narrower, smoother leaves. Flowers imperfect and plants dioecious, the inflorescences of the male and female plants somewhat different in appearance. Most common in the south central part of our range, low uncultivated or cultivated areas. Late summer and fall. Two alleged species occur in the north central area, but a large proportion of our representatives are hybrid populations. p54

CHENOPODIACEAE, GOOSEFOOT FAMILY

Annual weeds. Similar to above but without bristly bracts. The fruit pericarp is more or less adherent to the seed as a scurfy covering.

The goosefoot family is one of our major weedy groups from the standpoint of number of species. Beyond those treated below, a number of genera and species are common weeds elsewhere in the country and occur occasionally in the Midwest. Some of these unfortunately have the common name of pigweed (e.g. *Cycloloma*, winged pigweed; *Axyris*, Russian pigweed) but are not members of the pigweed family. Spinach (*Spinacia*), beets, sugar beets, and Swiss chard (all *Beta*) are typical representatives of the Chenopodiaceae.

Chenopodium. Leaves various, often broad or variously lobed. Flowers greenish, usually several to each bract or reduced leaf. Fruits circular or disk-shaped, surrounded by the accrescent sepals. Pericarp membranous, indehiscent, somewhat adherent to the single seed. Seeds black, similar to those of pigweeds, but less shiny, often marginally lobed or furrowed around the edge of the embryo.

The "seeds" may be encountered in agricultural seed as the fruit surrounded by the sepals, the separated fruit (with pericarp intact or partially destroyed), or the true seed, depending upon the degree of processing to which they have been subjected.

At least half a dozen species of *Chenopodium* are weedy in nature. Some of them are very similar to lambsquarter, described below, and distinctive only by technical characters. *C. ambrosioides* (wormseed, Mexican tea) with pinnately lobed leaves and a strongly aromatic odor is occasional in uncultivated areas and around buildings.

Chenopodium album, Lambsquarter. Plants annual, erect.

Leaves irregularly lobed, pointed, usually somewhat whitish beneath. Flowers in simple or branched spikes. Seeds nearly circular, 1.2-1.5 mm. in diameter, dull black or scurfy in appearance. Locally abundant. Summer and fall. Seeds common in legume seeds. p55

Kochia. *Kochia scoparia*, Kochia, Firebush. Annual, very densely leafy with lanceolate blades, at maturity with numerous spreading branches which bear flowers, 1 each in the axils of slender leafy bracts. Seeds brownish, horseshoe-shaped, 1.7-2.9 mm. long. Roadsides, fence rows, uncultivated areas, legumes. Late summer and fall. Seeds often abundant in commercial alfalfa seed. p56,
p57

Atriplex. *Atriplex patula*, Orache, Saltbush. Leaves triangular, somewhat hastately lobed. Fruits similar to those of lambsquarter but larger, and enclosed, clamshell-fashion between a pair of triangular bracts. Moderately common in western portions of range, occasionally elsewhere. Seeds occur in legume and grass seed.

Salsola. *Salsola kali*, Russian thistle. Leaves narrow, thick, at maturity becoming spine-tipped. Fruit top-shaped with embryo coiled up spirally. Common in regions of low rainfall, in the western states rangeland, waste areas, grains, and legumes. Occasional, mostly in noncultivated soil, further east.

Mirabilis. *Mirabilis nyctaginea*, Wild four-o'clock. A forked-branching perennial with opposite, cordate leaves and reddish flowers enclosed by large bracts. Local, roadsides, and railroad rights-of-way.

PHYTOLACCACEAE, POKEWEED FAMILY

Phytolacca americana, Pokeweed, Pokeberry. A tall perennial from a fleshy root, with alternate, ovate-lanceolate leaves. Flowers white in axillary racemes. Fruit a fleshy, purple berry with several seeds similar in appearance to those of pigweed but larger. Summer and fall. Southern part of range only, pastures, roadsides, often in open, wooded areas. The plant is poisonous to livestock.



PLATE 11

Amaranthus retroflexus 1. Calyx and fruit, semi-diagrammatic showing seed inside
x7. 2. Habit x2/3.



PLATE 12

Amaranthus graecizans 1. Habit x2/3.
Amaranthus albus 2. Habit x2/3.



PLATE 13

Amaranthus spinosus Habit x2/3.



PLATE 14
Acnida sp. Habit x1/2.



PLATE 15

Chenopodium album 1. Fruiting calyx x7. 2. Inflorescence x1/2. 3. Lower leaf x1/2.

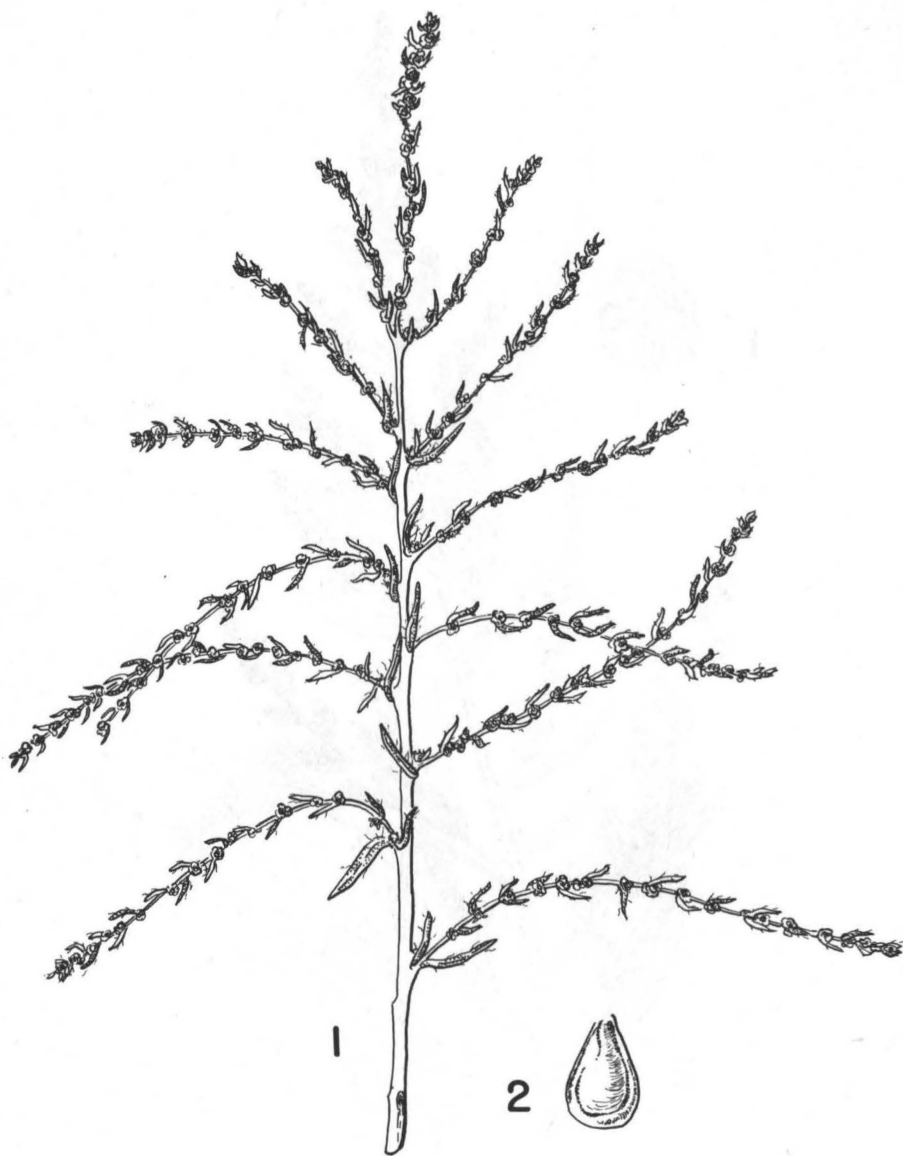


PLATE 16

Kochia scoparia 1. Inflorescence $\times 2/3$. 2. Seed $\times 7$.



PLATE 17

Kochia scoparia 1. Young plant x2/3.

Atriplex patula 2. Fruiting bracts x5. 3. Portion of inflorescence and leaves x2/3.

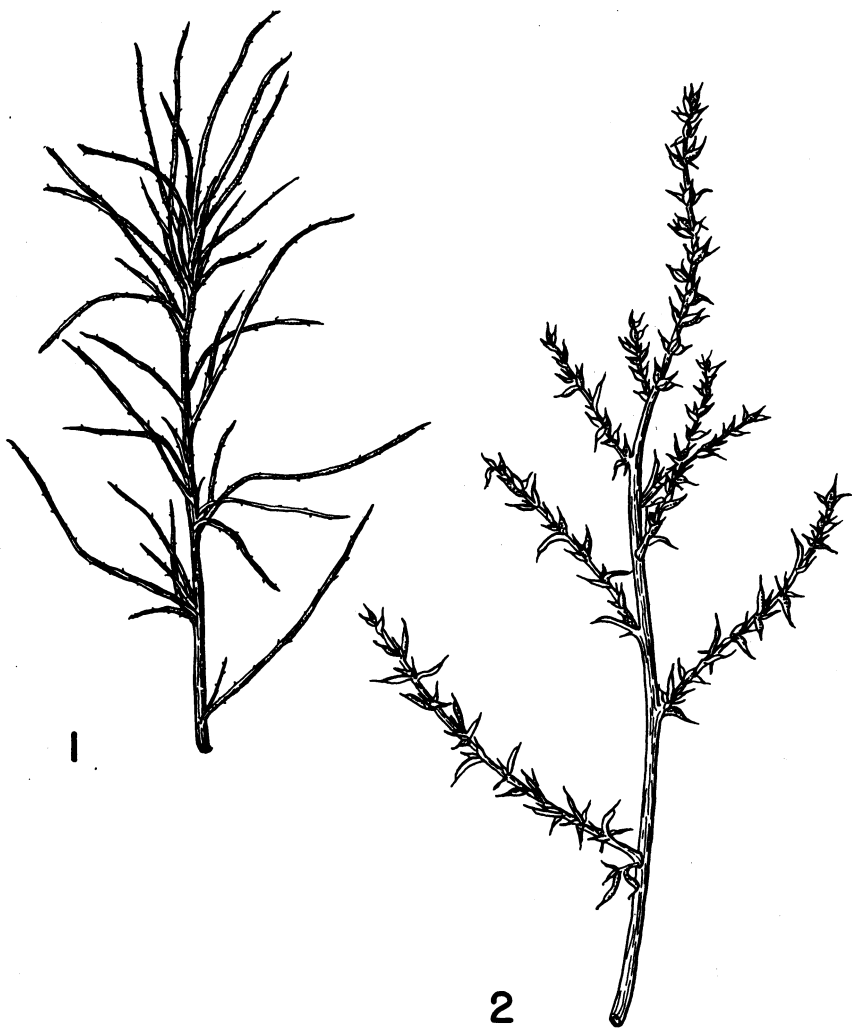


PLATE 18

Salsola kali 1. Young plant $\times 2/3$. 2. Branch of mature plant $\times 2/3$.



PLATE 19
Mirabilis nyctaginea Habit x2/3.

er. p68
rs in
pring
seeds



PLATE 20

5. *Phytolacca americana* Inflorescence and leaves x2/3.