EXPERIMENT STATION

OF THE

KANSAS STATE AGRICULTURAL COLLEGE.

MANHATTAN.

BULLETIN NO. 66—JUNE, 1897.

BOTANICAL DEPARTMENT.

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FOURTH REPORT ON KANSAS WEEDS--FRUITS AND SEEDS.

Bulletin No. 57, published in June, 1896, gave descriptions of the leaves and flowers of our common weeds. The descriptions were accompanied by drawings. In the present bulletin an attempt is made to give descriptions of the fruits and seeds of the same weeds described in bulletin No. 57. This bulletin should then be considered as a continuation of that and supplementary to it, and the descriptions should therofore be used in connection with those of the previous number. While there are here given descriptions of the fruits and seeds, yet it is often a great help in the identification to have at hand also descriptions of the leaves and general habit of the plants. These latter can be obtained by consulting bulletin No. 57.

Measurements.

The measurements of the fruits and seeds are given in inches or fractions of an inch. The latter is written as a decimal in most cases, unless it be one of the common divisions as ½ or ¼ It must be remembered that the dimensions of fruits and seeds vary, sometimes to a considerable degree. The measurements given are those of average specimens. Seeds are fairly constant in size while the fruits may vary more.

Plates.

Under each description is a reference to the corresponding figure in one of the plates at the end of the bulletin. Each figure bears the same number as the corresponding description. To find the description of any figure in the plates the reader should turn to the same number in the descriptive list.

Explanation of Key.

The Key is constructed and used in the same manner as the Key in bulletin No. 57 on page 3. Directions for using will be found there.

Key to Weeds.

1. Fruit fleshy or juicy. (2).
1. Fruit dry. (9).
2. Fruit one-seeded with scant flesh and red skin. SUMACS, Nos. 30, 31.
2. Fruit two-seeded, red. BUCKBUSH, No. 53.
2. Fruit three-seeded, black. ELDERBERRY, No. 52.
2. Fruit more than three-seeded. (3).
3. Fruit over an inch long, oblong, concave at apex. PRICKLY PEAR, No. 46.
3. Fruit glopose or oval, less than ¾ in. (4).
4. Berry enclosed in sack. GROUND CHERRIES, Nos. 125-131.
4. Berry not enclosed in sack. (3).
5. Seed-like stones, bony and hairy. WILD ROSE, No. 40.
5. Seeds not hairy. (6).
6. Berry with a live-lobed calyx at base. (7).
6. Berry with no calyx, red or green. GLOBE CACTUS, **44;** BIRDS'S NEST CASTUS NO. **45.**
7. Seeds 10, berry with 10 lines at apes. POKEWEED. No. 102.
7. Seeds numerous, more than 19. (8).
8. Berry green, almost enclosed in calls, seeds roughened. CHAMAESRACHA. No. 124.
8. Berry yellow or black, less than half enclosed in calyx. In one species the calyx is prickly and encloses the berry. Seeds smooth. NIGHTSHADES, Nos. 119-125.
8. Grasses or grass-like plants. (10).
9. Not grass like plants. (11).
10. Leaves three-ranked. NUTGRASS, N0 186.
10. Leaves two-ranked. GRASSES, Nos. 187-219.
11. Fruit opening to let *out* the seed. (12).
11. Fruit not opening to let out seed, Often Small and seed-like in appearance. Sometimes the fruit separates at maturity into two or more parts, each of which contains a seed but the parts do not open. Sometimes also the fruit is surrounded more or less by the sepals. the opening of which must not be confused with the opening of the fruit. (33).
12. Fruit with but one cavity. (13).
12 Fruit with two cavities. (22).
12. Fruit with three cavities. (25).
12. Fruit with four cavities. (28).
12. Fruit with five cavities. (29).
12. Fruit with twelve to fifteen cavities. VELVET LEAF. No. 23.
13. When the pod opens the top comes off like a lid. (14).
13. The pod opens by splitting at top or along the side. (13).
14. Pod with numerous small seeds. PUBSLANE, NC. 20.
14. Fruit containing one smooth black seed. PIGWEEDS and AMARANTHS, Nos 149-154.
15. Fruit opening only at the top and splitting down more o less by at least four lines. (16).
15. Fruit splitting more or less completely from top to bottom by one or two lines. (17).
16. Fruit a berry which soon dries up, surrounded by five prickly sepals which might be taken for the fruit. TEXAS NETTLE, No. 123.
16. Fruit prickly, opening by four to six teeth at the top. MEXICAN POPIN Nos. 23.
16. Fruit smooth and thin, small, opening by ten teeth at top. CHICKWEEDS, N0s. 18-19.
15. Pod splitting at one place only, seeds provided with tuft of hairs. (18).
17. Pod splitting into two pieces, seeds without hairs. (19).
18. Pod with weak prickly protuberances. MILKWEED, NO. 106.
18. Pod smooth, about one-half inch thick, spindle Shaped. CLIMBING MILKWEED. No. 107.
18. Pod long and slender less than one-fourth inch think. INDIAN HEMP, No. 105.
19. Seeds attached along two sides of the pod. (20).
19. Seeds attached along only one side of the pod. PULSE FAMILY, NOS 32-39.
20. Seeds roughened. (21).
20. Seeds smooth and black, and when fresh bearing a whitish fleshy appendage. CORYDALIS, No. 4.
21. Pod hairy. POLANISIA. No. 16.

21. Pod smooth, ROCKY MT. BEE PLANT, No. 17.
22. Pod opening horizontally, the top, bearing the partition, coming off like a lid. PLANTAINS, NOS. 144-147.

22. Pod globose, thin and papery at maturity, not opening or else bursting irregularly. DODDER, NO. 118.

22. Pod splitting lengthwise. sometimes only at top. (23).
23. Pod opening from the bottom upwards finally leaving the partition attached to stalk. Seeds attached along the edges of the partition. MUSTARD FAMILY, Nos. 5-15.
23. Pod splitting from top downwards, the sides of the fruit remaining attached to the stalk as well as the partition, seeds attached to center of partition. (24).
24. Seeds small and numerous. MULLEIN and NECKWEED, NOS. 134-135.
24. Seeds about four. BINDWEEDS, NOS. 115-117.
25. Seeds small and numerous. CARPETWEED, NO. 50.
25. Seeds not more than two in each cavity. (26).
26. Seeds velvety, mostly six. MORNING GLORIES, NOS. 113-114.
26. Seeds only three, smooth or roughened but not velvety. (27).
27. Base of pod remaining as shallow cup, small shrub. REDROOT, NO. 29.
27. Sides of pod falling away leaving central axis but no cup at base. SPURGE FAMILY, NOS. 175-183.

28. Pod prickly. JIMSON WEEDS, NOS. 132-133.
28. Pod smooth, opening only at the top. EVENING PRIMROSE, NO. 41.
29. Pod large armed with two large strong hooks. DEVIL'S CLAW, NO. 136.
29. Pod not armed with books. (30).
30. Seeds numerous. (31).
30. Seeds five, one in each cavity, the five sides opening upwards along the slender central axis. GERMANIUM, No. 25.
31. Pod bursting suddenly along the sides, pinching out the seeds, and then collapsing. WOOD SORRELS, NOS. 26-28.
31. Pod opening from the top down, persistent. BLADDER KETMIA, No. 24.
32. Fruit consisting of a ring of seed like portions which separate from each other at maturity. A five-lobed calyx partially surrounds the fruit. MALLOW and SIDA NOS. 21-22.
32. Fruits little seed-like nutlets collected in a globose cluster all from one flower. BUTTERCUP, No. 1.

32. Fruit separating at maturity into two to four seed-like nutlets. These nutlets show, under a lense, the scar of attachment to each other. The two to four nutlets come from the same flower and are often more or less enclosed in the four to five-lobed calyx. (33).
32. Fruit single, often a seed-like nutlet, one from each flower, hence showing no scar of attachment except at base. The flowers are often gathered in clusters with a number of small leaves below the bunch as in Sunflower and Burdock. In Cocklebur the two nutlets are enclosed in a bur and separated by a partition. (37).
33. Fruit separating into two parts. (34).
33. Nutlets four from each fruit, (sometimes all do not develop). (35).
34. Nutlets with hooked prickles all over the back. BLACK SNAKE-ROOT, NO. 51.
34. No prickles on fruit, one of the portions open, the other closed. BUTTONWEED, NO. 54.
35. Nutlets provided with hooked prickles. HOUND'S TONGUE and BEGGAR-LICE, NOS. 108-111.
35. Nutlets without prickles. (36).
36. Nutlets narrowly oblong, nearly four-sided, veiny on back. VERBENAS, NOS. 137-140.
36. Nutlets smooth, pointed, calyx bristly, lobes five, long and slender coming together over the nutlets KRYNITZKIA, NO. 112.
36. Nutlets smooth, calyx lobes three. WILD SAOE, NO. 141.
36. Nutlets smooth or angular, calyx lobes five, pointed. CATNIP and MOTHERWORT, NOS. 142-143.
37. Fruit oblong, covered with straight barbed spines. PRICKLY PEAR, NOS. 47-48.
37. Fruit a bur containing two nutlets separated by a partition. COCKLEBUR, Nos. 78-79.
37. Fruit consisting of a seed-like stone surrounded by a scant flesh. SUMACHS and POISON IVY, NOS. 30-32.
37. Nutlets few or many collected in a cluster or head surrounded by one or more rows of small leaves or scales as Sunflower. Burdock, Dandelion. SUNFLOWER FAMILY, NOS. 55-104.
37. Nutlets three to five in a five-lobed calyx, (Involuere). FOUR O'CLOCK. NO. 148.
37. Small fruits or nutlets single and separate. (38).
38. Nutlet enclosed in one sepal. HEMP. NO. 184.

38. Nutlets three-angled, enclosed in three sepals with three small ones at base. DOCKS, Nos. 163-167.
38. Nutlet enclosed in four sepals. NETTLE, NO. 185.
38. Nutlet disk-shaped, standing edgewise, or three angled, enclosed in five or six sepals. SMARTWEEDS, NOS. 168-174.
38. Seed black, smooth and shiny, disk shaped but standing horizontally, covered with a thin coating. Sepals five, finally spreading open. LAMB'S QUARTERS, NOS. 156-158.
38. Fruit a small flattened pod containing one or sometimes two seeds. Pod does not open to let out seed, calyx lobes five. SWEET CLOVERS, NOS. 33-34.
38. Nutlet enclosed in five sepals which have a horizontal wing all around. SAND HILL. TUMBLEWEED, No. 156, and RUSSIAN THISTLE, NO. 161.
38. Nutlet enclosed in two bracts resembling sepals. SALTWEED, No. 159.
38. No sepals apparent. (39).
39. Fruit with hooks. FRANSERIA, NO. 77.
39. Fruit four-sided at top. GAURAS, NOS. 42-43.
39. Nutlet more or less top-shaped. RAGWEEDS, NOS. 73-76.
39. Nutlet flat with thin edges. BUGSEED, NO. 160.
39. Fruit woolly. CLADOTHIX, NO. 155.
39. Nutlet smooth, rounded, somewhat flattened. IVAS, NOS. 71-72

DESCRIPTIONS OF THE FRUITS AND SEEDS OF KANSAS WEEDS.

1. Ranunculus acris, L. (Tall Buttercup).

Fruits seed-like, several in a globular head about .3 to .5 inch in diameter, all coming from one flower. Each fruit is flattened, oval, about .2 inch long and bearing a hook at the extremity, (style).

Plate I, Fig. 1, A head of fruits, natural size; a single fruit, natural size.

2. Argemone Mexicana albiflora, DC. (Mexican Poppy.)

Fruit a prickly, one-celled pod or capsule, 1 to 1½ inch long, four to six ridged and opening at the top by as many points. Seeds globose, about .07 inch long, grayish, marked with angular pits arranged in rows. On one side is the long scar.

Plate I, Fig. 2, A pod or capsule, natural size; a seed four times natural size.

3. Argemone platyceras, Link and Otto.

Fruit similar to the above. Seeds somewhat larger, about .1 inch long.

Plate I, Fig. 3, A seed four times natural size.

4. Corydalis aurea, Willd. (Golden Corydalis).

Fruit a one-celled, somewhat knotty pod, about ½ inch long, splitting down one side to let out the seeds. Seeds globose, black, smooth and shiny, .05 inch long. Under a lense they are, minutely wrinkled. At one end there is a white fleshy outgrowth which soon withers and turns brown.

Plate I, Fig. 4, A stalk bearing several pods, natural size; a seed six times natural size.

Cruciferae, (Mustard Family). Nos. 5 to 15.

Fruit 2-celled, short or elongated. At maturity the two halves of the pod separate from their partition which afterwards remains attached to the flower stalk, the separation taking place from the bottom upward. The seeds have a pungent taste. The fruits are numerous, more or less stalked and scattered along a main axis.

5. Camelina sativa, Crantz. (False Flax).

Pods roundish, slightly flattened, pointed, ¼ inch long. Seeds numerous, oblong, .07 inch long,

Plate I, Fig. 5, A portion of a branch bearing pods, natural size; a seed eight times natural size; a cross-section in outline of a seed, eight times natural size.

6. Nasturtium sinuatum, Nutt. (Yellow Cress).

Pods oblong, beaked, ¼ to ½ inch long, slightly curved, on spreading or S-shaped stalks. Seeds .05 inch long, usually flat at one end.

Plate 1, Fig. 6, A portion of a branch bearing pods, natural size; a seed eight times natural size.

7. Nasturtium sessiliflorum, Nutt. (Yellow Cress).

Fruit oblong, ¼ inch long, on a short stalk. Beak small. Seeds roundish, .03 inch long. minutely roughened.

Plate I. Fig, 7, A portion of a branch bearing pods, natural size; a seed eight times natural size.

8. Erysimum asperum, DC. (Western Wall Flower).

Pods very long and slender, four-sided, 3 to 4 inches long. At maturity the whole cluster of spreading fruits breaks off and tumbles before the wind. Seeds oblong, .07 inch long.

Plate I, Fig. 8, A portion of branch bearingpods, one-half natural size; a single pod natural size; a seed eight times natural size.
long, under a lense minutely roughened.

6. Sissymbrium canescens, Nutt. (Tansy Mustard).

Pods cylindrical, not beaked, about 1/3 inch long, on slender stalks. Seeds oblong, .05 inch

Plate I, Fig. 9, A portion of branch bearing pods, natural size; a seed eight times natural size.

10. Sissymbrium officinale, Scop. (Hedge Mustard).

Pods cylindrical, somewhat tapering upwards, beaked, on short stalks and closely appressed to the stem. Seeds much as in the foregoing, but smooth and somewhat larger.

Plate I, Fig. 10, A portion of branch bearing pods, natural size; a seed eight times natural size.

11. Brassica Sinapistrum, Boiss. (English Charlock).

Pods more or less knotty, spreading, an inch or more long besides the stout beak. Seeds globose, slightly roughened, .1 inch long.

Plate I, Fig. 11, A portion of branch bearing pods, natural size; a seed eight times natural size.

11a. Brassica campestris, L. (The Turnip).

This occasionally becomes a bad weed in cultivated fields. The fruit closely resembles the Charlock.

12. Brassica nigra, Koch. (Black Mustard).

Pods four-sided, short beaked, closely appressed to stem, about ½ inch long. Seeds short-oblong, .08 inch long.

Plate II, Fig. l2, A portion of branch bearing pods, natural size; a seed eight times natural size.

13. Capsella Bursa-pastoris, Moench. (Shepherd's Purse).

Pods reverse, heart-shape narrowing to the slender spreading stalk, flattened at right angles, to the partition, about 1/3 inch long. Seeds oblong, .06 inch long.

Plate II, Fig. 13, A portion of branch bearing pods, natural size; a seed eight times natural size.

14. Lepidium Virginicum, L. (Pepper Grass.)

Pods circular, much flattened at right angles to the partition, notched at the apex, about ¼ inch long. Seed only one in each cell, flat, oblong, .09 inch long.

Plate II, Fig. 14, A portion of branch bearing pods, natural size; a single pod or capsule, right times natural size; a cross section of seed, eight times natural size, showing position of eotyledons and caulicle.

15. Lepidium intermedium, Gray. (Pepper Grass).

The fruit is similar to the preceding but rather smaller. There is a distinct difference in the cross section of the seed as shown in plate.

Plate II, Fig. 15, A portion of branch bearing pods, natural size; a single pod or capsule eight times natural size; a cross section of seed eight times natural size, showing position of eotyledons and caulicle.

16. Polanisia trachysperma, Torr. and Gray.

Fruit a one-celled pod splitting open along the two edges, from the top downward, 1 to 2 inches long, on stalks of about the same length. Surface clammy-hairy. Seeds numerous flattened globose with a deep cleft on one side 1 inch long, roughened, color dark brown.

Plate II, Fig. 16, The upper part of a branch bearing pods, natural size; a single pod, natura size; a seed eight times natural size.

17. Cleome integrifolia, Torr. and Gray. (Rocky Mt. Bee plant.)

Pods smooth, cylindrical, more or less knotty, one-celled, splitting into 2 pieces, ¾ to 1 inch long. Stalk longer than pod, bearing a joint above the middle. Seeds .15 inch long, more or less roughened with protuberances.

Plate II, Fig. 17, The upper portion of a branch bearing both flowers and pods, natural size; a seed eight times natural size.

18. Cerastium vulgatum, L. (Mouse-ear Chickweed).

Fruit a cylindrical, one-celled pod opening at the top by 10 teeth. The walls of the pod are thin and papery. The pod is about ¼ inch long and a little longer than the persistent five-leaved calyx. Seeds angular, roughened, .04 inch long.

Plate III, Fig. 18, The upper part of a branch bearing pods, natural size; a single pod twice natural size; a seed eight times natural size.

19. Cerastium nutans, Raf. (Chickweed).

Similar to preceding but pod ½ inch long, three times as long as calyx and slightly curved. Seeds somewhat larger.

Plate III, Fig. 19, The upper portion of a branch bearing pods, natural size; a single pod twice natural size; a seed eight times natural size.

20. Portulaca oleracea, L. (Purslane).

Fruit a one-celled pod, 1/3 inch long, opening by a horizontal line, the top half coming off like a lid. The pod is enclosed in the two sepals which come off with the lid. Seeds globose, black, roughened, .05 inch long, borne on slender stalks which arise from the base of the pod.

Plate III, Fig. 20, A portion of a branch bearing several pods, one with its lid off showing the seeds, natural size; a single pod natural size; a seed eight times natural size.

21. Malva rotundifolia, L. (Common Mallow).

Fruits seed-like, several joined in a ring around a central axis. Each seed-like fruit is about .1 inch high, rounded on the back and contains one seed. Sepals persistent, five.

Plate III, Fig. 21, A ring of seed-like nutlets all from one flower, showing five sepals, natural size; a single nutlet four times natural size; a seed eight times natural size.

22. Sida spinosa, L. (Sida).

Fruits five, united in a ring, shorter than the five-lobed calyx, .1 inch long, provided with two slender teeth and splitting more or less between these. Each fruit contains one seed.

Plate III, Fig. 22, A fruit consisting of the five little pods, enclosed in the calyx, natural size; a single pod or carpel four times natural size; a seed eight times natural size.

23. Abutilon Avicennae, Gaertn. (Velvet Leaf).

Fruit a 12-15-celled pod, bearing the persistant calyx at its base. The shape is best shown by the drawing. The radiating points of the pod have given the name of "Butter Print," etc. Each cell contains two or three seeds; these, flattened, kidney shaped, slightly hairy, about .13 inch long. The cells split open part way down and thus free the seeds.

Plate III, Fig. 23, A pod, natural size; a seed twice natural size.

24. Hibiscus Trionum, L. (Bladder Ketmia).

Fruit a five-celled pod, which splits between the partitions, separating into five points. The pod is about ½ inch high and is surrounded by the five-lobed veiny calyx which has a number of slender bracts at the base. Seeds a few in each cell, kidney shaped, black, roughened, .09 inch long.

Plate III, Fig. 24, a pod natural size; a seed eight times natural size.

25. Geranium Carolinianum, L. (Wild Geranium).

Fruit a pod, ½ inch long, the upper part slender, five-sided, the lower part with five globose, hairy enlargements each containing a single ovoid, smooth brown seed about .1 inch long. The five-sepaled calyx persists. The pod opens as shown in the drawing.

Plate III, Fig. 25, A branch with two pods, natural size; a single pod showing the way it opens to let out the seeds, natural size; a seed, six times natural size.

26. Oxalis violacca, L. (Wood Sorrel).

Fruit a five-sided, five-celled, more or less spirally twisted pod 1/3 inch long, surrounded by the five persistent sepals. Seeds several, ovoid, grayish, roughened by deep wrinkles, .09 inch long, at first enclosed in a fleshy white outgrowth as shown in the drawing. This appendage turns brown, soon withers and falls off. The pod bursts suddenly along five lines, pinching out the seeds and throwing them several inches. The pod becomes then withered and flaccid.

Plate III, Fig. 26, A pod natural size; a seed six times natural size.

27. Oxalis corniculata, L. (Yellow Wood Sorrel).

Fruit similar to preceding but two or three times as long, not twisted. The stalks are more or less reflexed, but the pods, erect. Seeds flat, oval, conspicuously cross-wrinkled, .06 inch long.

Plate III, Fig. 27, A branch with two pods, natural size; a seed and its detached appendage, eight times natural size.

28. Oxalis corniculata stricta, Sav. (Yellow Wood Sorrel).

This differs from Oxalis corniculata in having the stalks of the fruit upright.

Plate III, Fig. 28, A pod natural size.

29. Ceanothus ovatus, Desf. (Red-root).

Fruit globular, nearly black. .15 to .20 inch broad, three-angled, three-celled, borne on slender stalks in round topped clusters. At the base of each fruit is a disc, the remains of the calyx. At maturity the three cells separate elastically from each other, and each cell splits enough to throw out the single smooth ovoid seed .12 inch long.

Plate III, Fig. 29, A branch bearing a cluster of pods, natural size; a portion of a split pod showing enclosed seed, five times natural size; a seed five times natural size.

30. Rhus glabra, L. (Smooth Sumac).

Fruits numerous in a close terminal cluster, each fruit flattened globose, .2 inch long, dark red, covered with sticky hairs. At the base is the calyx of five sepals. The soft seed is enclosed in an oblong smooth stone, .14 inch long and this surrounded by the thin red flesh. Stem of fruit cluster smooth.

Plate III. Fig. 30, A cluster of fruits one-half natural size; a single fruit (drupe) twice natural size; a seed (stone) twice natural size.

31. Rhus copallina, L. (Downy Sumac).

Differs from the smooth sumac chiefly in having a downy stalk to the fruit cluster.

Plate III. Fig. 31, A single fruit, twice natural size; a stone twice natural size.

32. Rhus Toxicodendron, L. (Poison Ivy, Poison Oak).

Fruits globose, pearly-white, smooth, .2 inch long. The stone is ribbed.

Plate III. Fig. 32, A cluster of fruits, natural size; a single fruit, twice natural size; a stone, twice natural size.

Leguminosae, (Pulse Family). Nos. 33 to 39.

The fruit is a one-celled pod, usually more or less flattened. The five-toothed calyx persists at the base.

33. Melilotus officinalis, Willd. (Yellow Sweet Clover).

Pods small, oval. .15 inch long, roughened with veins. The pods contain one or occasionally two seeds, but do not open to let them out. Seeds oval, flattened, smooth, .1 inch long.

Plate IV, Fig. 33, A portion of branch bearing pods, natural size; a single pod, twice natural size; a seed, eight times natural size.

34. Melilotus alba, Lam. (White Sweet Clover).

This can not easily be distinguished from the preceding by the fruit.

Plate IV; Fig. 34, A portion of a branch bearing pods, natural size; a single pod, twice natural size; a seed eight times natural size.

35. Hosackia Purshiana, Benth.

Pod, bean-like about an inch long, flat, containing several oval seeds, .1 inch long. The pod splits into two pieces like a bean, each piece coiling suddenly, thus throwing the seeds a short distance.

Plate IV, Fig. 35, A pod, natural size; a pod after the seeds have been expelled, natural size; a seed four times natural size.

36. Strophostyles angulosa, Ell. (Wild Bean).

Pods bean like, slender, nearly smooth, about 3 inches long, splitting open as in the preceding. Seeds oblong, hairy, 1/3 inch long.

Plate IV, Fig. 36, A pod that has split open, natural size; a seed twice natural size.

37. Strophostyles pauciflora, Watson. (Wild Bean).

Similar to preceding, but pod an inch long, hairy, and its seeds nearly smooth, .2 inch long.

Plate IV, Fig. 37, A pod, natural size; a pod split open, natural size; a seed, twice natural size.

38. Cassia Marilandica, L. (Wild Senna).

Pods very flat, curved, 3 or 4 inches long, furrowed outside between the seeds which lie crosswise. At maturity the pods split but do not coil. Seeds oval, smooth, .2 inch long.

Plate IV, Fig. 38, A pod, natural size; a seed twice natural size.

39. Cassia Ohamaecrista, L. (Partridge Pea).

Pods thin, straight or somewhat curved, opening as in the preceding. Seeds rhomboidal, smooth but with rows of minute shallow pits visible with lense.

Plate IV, Fig. 39, A pod, natural size; a pod split open, natural size; a seed twice natural size.

40. Rosa Arkansana, Porter. (Wild Rose).

Fruit fleshy, somewhat resembling a small apple, more or less globose, scarlet, smooth. The fleshy portion is hollow, with a small opening at the tip. Within this are several hairy stones, in each of which is a single seed. Fruit about ½ inch high, stones .2 inch long.

Plate IV, Fig. 40, A cluster of fruits, natural size; a single fruit, cut lengthwise, natural size; a seed-like nutlet or stone, twice natural size.

41. Oenothera biennis, L. (Evening Primrose).

Fruit a dry, woody, four-celled pod, 1 to 1½ inches long, somewhat four-ribbed, splitting at the top in four places. The pods are numerous in a long, narrow, wand-like cluster. Seeds are very numerous, angular, brown, .04 inch long.

Plate IV, Fig. 41, A portion of branch bearing pods, natural size; a seed four times natural size.

42. Gaura biennis, L. (Gaura).

Fruits, one-celled, four-sided, tapering at each end, without stalks, nut opening at maturity to let out the one to four small seeds. Length of each fruit about .3 inch. The fruits are borne in long slender clusters, but soon fall off

Plate IV, Fig. 42, A portion of a branch, bearing four fruits, and four buds, natural size, a fruit and a cross section of fruit in outline, twice natural size.

43. Gaura parviflora, Dougl. (Velvety Gaura).

Fruits in long slender clusters and soon falling off. Each fruit about ¼ inch long, four-sided above, cylindrical below, one-celled, containing one to four seeds. Not opening at maturity.

Plate IV, Fig. 43, A portion of branch bearing fruit, natural size; a single fruit, or nutlet, twice natural size.

Cactaceae, (Cactus Family). Nos. 44 to 49.

These are all fleshy prickly plants, with more or less fleshy fruits containing several or numerous seeds.

44. Mamillaria vivipara, Haw. (Globe Cactus).

Fruit an oval berry, ½ inch long, green. Seeds numerous, oblong, about .08 inch long.

Plate IV, Fig. 44, A berry, natural size; a seed, four times natural size.

45. Mamillaria Missouriensis, Sweet. (Bird's Nest Cactus).

Fruit an oval, scarlet berry. Seeds few, globose, .08 inch long.

Plate IV, Fig. 45, A berry, natural size; a seed, four times natural size.

46. Opuntia Rafinesquii, Engelm. (Prickly Pear).

Fruit cylindrical, narrowed below, concave at apex, fleshy, 1 to 2 inches long. Spiny when young but usually smooth and pink colored when ripe. Flesh edible. Seeds numerous, disk-shaped, .2 inch broad.

Plate IV, Fig. 46, A berry, natural size; a seed, four times natural size.

47. Opuntia Missouriensis, (Prickly Pear).

Fruit cylindrical, at maturity dry and spiny, about half as long as in the preceding. Seeds similar.

Plate V, Fig. 47, A berry, natural size; a seed, four times natural size.

48. Opuntia fragilis, Haw.

"Fruit rather fleshy through the winter getting dry in the spring, nearly an inch long, with 20 to 25 pulvilli, of which only the upper ones bear a few short spines. Seeds few, usually only five or six in each fruit, three lines, [¼ inch] in diameter, with a wide and thick obtuse corky margin," (Engelm. Syn. Cac. 301].

No fruit has been observed on Kansas plants. It propagates abundantly by the joints which break off readily and become attached to animals.

49. Cereus viridiflorus. Engelm.

"Fruit ovate, spiny, ½ inch long. Seed obovate, tuberculate, .06 inch long." [From Engelm. Cact. Bound].

50. Mollugo verticillata. (Carpet Weed).

Fruit an oblong, three-celled pod, .15 inch long, with five sepals at base about half as long Pod opens in three places. Seeds, numerous, smooth, .02 inch long.

Plate V, Fig. 50, A portion of branch with a cluster of pods, natural size; a single pod, four times natural size; a seed, eight times natural size.

51. Sanicuia Marylandica, L. (Black-snake Root).

Fruit a globular bur, ¼ inch long, covered with hooked spines. At maturity splitting into two halves. Each half contains a single seed.

Plate V, Fig. 51, A cluster of fruits, natural size; a separate half of a fruit been from the inner face, twice natural size.

52. Sambucus Canadensis, L. (Elderberry).

Fruits numerous in flat topped clusters, globose, dark purple, ¼ inch broad, juicy, containing three seed-like stones.

Plate V, Fig. 52, A berry, twice natural size; a stone showing front and side views, four times natural size.

53. Symphoricarpos vulgaris, Michx. [Buck Bush].

Fruits in close clusters along the stem, fleshy, red, .2 inch long, containing two smooth seed-like stones.

Plate V, Fig. 53, A branch bearing two clusters of fruit, natural size; a single berry, twice natural size; a stone, four times natural size.

54. Diodia teres, Walt. [Button Weed.]

Fruits in small clusters at the base of the leaves, narrowed below, hairy above, splitting at maturity into two somewhat unequal parts, one part is open on the inner face and bears one of the calyx lobes, the other is closed and bears three calyx lobes at the apex.

Plate V, Fig. 54, A branch with a cluster of fruits, natural size; a fruit showing the division into two unequal pieces, four times natural size.

Compositae. [Sunflower Family] Nos. 55-104.

The fruit in this family is always a seed-like body, called an achene, which contains a single seed. The fruits are usually in close clusters upon a flat or roundish receptacle, and supported or surrounded by numerous scales. The sunflower is a familiar example. In the golden-rods the heads or clusters are very small. In the cockle-bur the two fruits are enclosed in a bur, and in the rag-weed it is enclosed in a top shaped woody body usually called the seed. The heads of fruits are often arranged in larger clusters as in the Ironweed. [Plate 57].

55. Vernonia Arkansana, DC. [Ironweed].

Heads about ½ inch broad, scales narrow and somewhat spreading, otherwise like No. 57, Fruits .2 inch long.

Plate VII, Fig. 55, A head, natural size; a seed-like fruit, twice natural size.

56. Vernonia fasciculata, Michx. [Ironweed].

Resembles No. 57, but fruits larger.

Plate VII, Fig. 56, A head, natural size; a seed-like fruit, twice natural size.

57. Vernonia Baldwinii, Torr. [Ironweed].

Heads in clusters at the ends of the stems; scales appressed; fruits several in each head, .12 inch long, ribbed, minutely hairy, furnished with a tuft of purple bristles at the apex.

Plate VII, Fig. 57, A branch bearing a cluster of heads, natural size; a single seed-like fruit, twice natural size.

58. Gutierrezia Enthamiae, Torr. and Gray.

Heads as shown in drawing. Fruits "short obovate, oblong, terete or five-angled, sericeus-pubescent." They are provided at apex with a row of narrow scales. We have not been able to find ripe fruit of this.

Plate VI, Fig. 58. A cluster of heads, natural size.

59. Amphiachyris dracunculoides, Nutt.

Heads as in drawing. Fruits pubescent, without any appendages at apex. The inner flowers of the head do not produce fruit. We have been unable to obtain ripe fruit of this.

Plate VI, Fig. 59, A few short branches bearing heads.

60. Grindelia squarrosa, Dunal. [Gum Weed].

Heads ½ to ¾ inch broad, scales with narrow recurved points, sticky with gum. Fruits flattened, four-angled, smooth, .1 inch long; no appendages at top.

Plate VI. Fig. 60. A head, natural size; a seed-like nutlet, twice natural size.

61. Aplopappus ciliatus, DC.

Heads an inch or more broad, scales flat and smooth. Fruits slightly flattened, smooth, .1 inch long, provided with a tuft of yellowish bristles at apex. This was named in Bulletin 51. *Grindelia squarrosa grandiflora*, Gray.

Plate VI, Fig. 61, A head, natural size; a seed-like nutlet, twice natural size.

62. Heterotheca Lamarkii, Cass.

Heads about ½ inch broad in fruit; scales narrow, pointed; fruits flattened, hairy, .1 inch long, provided with a tuft of tawny bristles at apex.

Plate VI, Fig. 62, Short branches with three heads, natural size; a seed-like nutlet, twice natural size.

63. Solidago serotina, Ait. [Golden-rod].

Heads small, about .2 inch high, one-sided along the branches, forming a large terminal cluster. Scales few, blunt. Fruits hairy, .05 inch long, a tuft of white bristles at apex.

Plate VI, Fig. 63, A head, twice natural size; a seed-like nutlet, four times natural size.

64. Solidago Canadensis, L. [Golden-rod].

Similar to No. 63. Fruits somewhat smaller, minutely hairy.

Plate VI, Fig. 64, A cluster of heads, natural size; a small branch with several heads, natural size; a head, twice natural size; a seed-like nutlet, four times natural size.

65. Solidago rigida. L. [Golden-rod].

Heads large, ½ inch high, arranged in a flat-topped cluster. Fruits .08 inch long, smooth, otherwise similar to No. 63.

Plate VI. Fig. 65, A portion of a large cluster of heads, natural size; a head, twice natural size; a seed-like nutlet, four times natural size.

66. Aster tanacetifolius, HEK. [Tansy Aster].

Heads ¼ inch broad. Scales narrow and spreading, roughened with glands. Fruits .14 inch long, hairy, provided with tuft of tawny bristles at apex.

Plate V, Fig. 66, A head, natural size; a seed-like nutlet, twice natural size.

67. Erigeron Canadensis, L. [Horse Tail].

Heads very small about .1 to .2 inch long, in a terminal, rather loose cluster. Scales few, equal, narrow. Fruits very small, .08 inch long with a scanty tuft of bristles at apex.

Plate VII, Fig. 67, A portion of a large cluster of heads, natural size; a seed-like nutlet, eight times natural size.

68. Erigeron annuus. Pers. [Daisy Fleabane].

Heads about, 1/3 inch broad. Scales numerous, narrow, equal. Fruits .05 inch long, with a tuft of bristles at apex.

Plate V. Fig. 68. A portion of a terminal cluster, natural size; seed-like nutlet, twice natural size and eight times natural size.

69. Erigeron strigosus, Muhl. [Daisy Fleabane].

Fruit closely resembles No 68.

Plate VII, Fig. 69, A portion of a terminal cluster, natural size; a seed-like nutlet, eight times natural size.

70. Gnaphalium polycephalum, Michx. [Life Everlasting].

Heads about .2 inch high in flat-topped clusters. Scales papery, pearly white. Fruits very small, scarcely .02 inch long. Tufts of hairs at apex woolly, soon breaking off.

Plate VIII, Fig. 70, A portion of a cluster of heads, natural size, a seed-like nutlet, twice natural size and eight times natural size.

Nos. 71 to 79 do not form heads like the other numbers of this order and would not at first inspection be recognized as belonging with the *Compositae.*

71. Iva ciliata, Willd.

Fruits in a long narrow, scaly cluster at the ends of the branches. Each fruit smooth, nearly black, flattened, .07 inch long, no appendages.

Plate VI, Fig. 71, A portion of branch bearing fruits, natural size; seed-like nutlet, four times natural size.

72. Iva Xanthiifolia, Nutt. [Marsh Elder].

Fruits in branched terminal clusters. Each fruit about .04 inch long, no appendages.

Plate VI, Fig. 72, Cluster of heads, one-fourth natural size; a small portion of same, natural size; a seed-like nutlet, four times natural size.

73. Ambrosia bidentata, Michx,

Resembles No. 76. "Fruit with four stout spines and a central beak." [Gray's Manual]. We have no ripe fruit.

74. Ambrosia trifida, L. [Horse Weed].

Fruits in clusters, near the ends of the branches. Each fruit hard and woody, 1/3 inch long, pointed, below the point a crown of smaller points.

Plate VI, Fig. 74, A portion of branch bearing fruit, natural size, a seed-like fruit, twice natural size.

75. Ambrosia artemisiaefolia, L. [Ragweed].

Fruit similar to No. 74, but only half as large, hairy, central point slender.

Plate VI, Fig. 75, A portion of branch bearing fruit, natural size; a seed-like fruit, twice natural size.

76. Ambrosia psilostachya, DC. [Perennial Ragweed].

Fruit much like No. 75, larger, broader in proportion to length, central point short, crown of about six small points.

Plate VI, Fig. 76, A portion of branch bearing fruit, natural size; a seed-like fruit, twice natural size.

77. Franseria tomentosa, Gray.

Fruits at the base of the upper leaves, hard and woody, bur-like, ¼ inch long, with several coarse points or hooks.

Plate VIII, Fig. 77, A portion of branch bearing fruit, natural size; a bur-like fruit, twice natural size.

78. Xanthium Canadelse, Mill. [Cocklebur].

Fruit an oblong bur about one inch long, covered with numerous slender hooked bristles and with two strong beaks at the end. Each bur contains two seed-like fruits, with a partition between them. The bur between the spines and along the base of the spines and beaks is covered with short hairs.

Plate VI. Fig. 78, A bur, natural size; a single seed-like nutlet, twice natural size.

79. Xanthium strumarium, L. [Cocklebur].

Fruit very similar to No. 78, but smaller, ½ to ¾ inch long, and with fewer spines which are smooth as is also the bur between them.

Plate VI, Fig. 79, A bur, natural size.

80. Helianthus annuus, L. [Common Sunflower].

Heads very large, about 1½ inch or even more in breath, rounded above, supported beneath by numerous broad pointed scales. By the side of each fruit is a three pointed scale. Fruits nearly smooth, flattened, narrower below, black, .2 inch long, provided at apex with two scales which fall off easily.

Plate VIII, Fig. 80, A head as seen from below, natural size; a head side view, natural size; a seed-like nutlet, twice natural size.

81. Helianthus petiolaris, Nutt. [Sandhill Sunflower].

Heads smaller than No. 80, one inch broad. Fruits narrower, hairy, especially toward the apex: light colored with dark spots. The old heads have a light colored faded appearance, while those of No. 80 are dark colored.

Plate VII, Fig. 81, A head, natural size; a seed-like nutlet, twice natural size.

82. Helianthus orgyalis, DC. [Sunflower].

Heads roundish, ½ inch broad. Scales narrow. Fruit ¼ inch long, smooth.

Plate VIII, Fig. 82, A head, natural size; a seed-like nutlet, twice natural size.

83. Helianthus grosse-serratus, Martens. [Sunflower].

Heads about ¼ inch broad. Scales narrow and spreading. Fruits smooth.

Plate VIII, Fig. 83, A head, natural size; a seed-like nutlet, twice natural size.

84. Helianthus Maximiliana, Schrad. [Sunflower].

Heads much like No. 83. Fruits as in No. 83.

Plate VIII, Fig. 84, A head, natural size; a seed-like nutlet, twice natural size.

85. Helianthus tuberosus, L. [Jerusalem Artichoke].

Heads resembling No. 83. Fruits ¼ inch long, smooth.

Plate VIII, Fig. 85, A head, natural size; a seed-like nutlet, twice natural size.

86. Verbesina encelioides, Benth. and Hook. [Dog-weed].

Heads resembling a sunflower in fruit, 1 inch broad. Fruits very flat and thin, with a wing all around the margin, notched at apex, ¼ inch long.

Plate V, Fig. 86, A head, natural size; a seed-like nutlet, twice natural size.

87. Coreopsis tinctoria, Nutt.

Heads ¼ inch broad on long stalks. Scales in two rows, upper broad, lower small and narrow. Fruit black, .08 inch long, without appendages.

Plate VIII, Fig. 87, A cluster of three heads, natural size; a seed-like nutlet, twice natural size.

88. Bidens frondosa, L. [Beggar ticks].

Heads nearly an inch high. Scales narrow, spreading. Fruits that, oblong, black, ½ inch long, ending in two barbed points nearly as long as fruit.

Plate VII, Fig. 88, A head, natural size; a seed-like nutlet, twice natural size.

89. Bidens bipinnata, L. [Spanish needles].

Fruits fewer in a head, narrow, cylindrical, .5 inch long, ending in four barbed points, .l inch long.

Plate VII, Fig. 89, A branch with two heads, natural size; a seed-like nutlet, twice natural size. [Drawing was made from an undersized specimen].

90. Gaillardia pulchella, Foug. [Niggar-toe].

Heads globose, scales narrow. reflexed. Fruits obconical, .08 inch long, covered with appressed silky hairs. At the apex is a row of long chaffy scales.

Plate VII, Fig. 90, Two heads, natural size: a seed-like nutlet, twice natural size.

91. Dysodia chrysanthemoides, Lag. [Stink-weed].

Heads 1/3 inch high. Scales few, hard, dotted with red glands emitting a resinous odor. Fruits .15 inch long, hairy, provided at apex with a tult of yellow bristles.

Plate VII, Fig. 91, A head, natural size; a seed-like nutlet, twice natural size.

92. Anthemis Cotula, DC. [Dog Fennel].

Heads conical, yellow, ¼ inch broad. Scales narrow, spreading. Fruits .05 inch long, no appendages.

Plate VII, Fig. 92, A head, natural size; a seed-like nutlet, eight times natural size.

93. Chrysanthemum Leucanthemum, L. [Ox-eye Daisy].

Heads flat, ¾ inch broad. Scales numerous, overlapping. Fruits .09 inch long, ribbed, no appendages.

Plate V, Fig. 93, A head, natural size; a seed-like nutlet, eight times natural size.

94. Arctium Lappa, L. [Burdock].

Heads rounded or ovate. Scales numerous, narrow, woody below, hooked above, forming all together a bur, enclosing the fruits. Fruits smooth, flattened, about four-angled, .15 to .2 inch long, a tuft of bristles at apex which soon fall off.

Plate VII, Fig. 94, A cluster of heads, natural size; a seed-like nutlet, twice natural size.

95. Cnicus lanceolatus, Hoffm. [English Thistle].

Heads about an inch broad. Scales all tipped with moderately strong prickles. Fruits oval, light colored, flattened, smooth, about .2 inch long, bearing at apex a copious tuft of silky hairs, ¼ inch long.

Plate VIII, Fig. 95, A head, natural size; a seed-like nutlet, one-half natural size.

96. Cnicus undulatus, Gray. [Pasture Thistle].

Heads over an inch broad, usually narrowed above. Scales provided with a dark more or less sticky ridge on back and with spreading stout prickles, except the innermost which are merely pointed. Fruits like No. 95, .3 inch long.

Plate VII, Fig. 96, A head, natural size; a seed-like nutlet, one-half natural size, and twice natural size.

97. Cnicus ochrocentrus, Gray. [Western Thistle].
Very much like No. 96. Prickles of scales stout and colored yellow.
Plate VIII, Fig. 97, A head, natural size; a seed-like nutlet, one-half natural size.

98. Cnicus altissimus, Willd. [Tall Thistle].
Heads about one inch broad, smaller than in No. 96, which they resemble. Prickles not so long nor so stout. Fruits about .2 inch long.
Plate VIII, Fig. 98, A head, natural size; a seed-like nutlet, one-half natural size.

99. Cnicus arvensis, Hoffm. [Canada Thistle].
Heads much smaller than the other thistles, ½ to ¾ inch broad, only a part of the plants bearing fruits. Scales with short weak points not prickly like the others. Fruits about, .1 inch long.
Plate VIII, Fig. 99, A head, natural size; a seed-like nutlet, one-half natural size.

100. Taraxacum officinale, Weber. [Dandelion].
Heads on hollow stalks which increase greatly in length during ripening. During wet weather the scales remain upright and enclose the fruits, but when dry they reflex and expose the spreading fruits as shown in the drawing. Fruits top-shaped, ribbed, the apex prolonged into a slender beak which bears a tuft of spreading hairs. Fruit .15 inch long, beak .4 inch long.
Plate V, Fig. 100, A head, natural size; a seed-like nutlet, natural size and twice natural size.

101. Lactuca Scarioia, L. [Prickly Lettuce].
Heads narrow, .15 to .2 inch wide. Fruit very flat, black, striate, .15 inch long ending in a slender beak longer than the body, and this crowned with a tuft of hairs.
Plate VII, Fig. 101, A branch with two heads, natural size; a seed-like nutlet, twice natural size.

102. Lactuca Canadensis, L. [Wild Lettuce].
Heads larger, ¼ inch broad. Fruits smooth, similar to No. 101, but larger, .2 inch long, and with a short beak.
Plate VII, Fig. 102, A branch with two heads, natural size; a seed-like nutlet, twice natural size.

103. Lactuca pulchella, DC. [Wild Lettuce].
Heads larger than the other species of Lactuca. Fruits narrow but flat, striate with about three ridges on each side, .2 inch long with a short beak about as long as the width of the fruit.
Plate VIII, Fig. 103, A head, natural size; a seed-like nutlet., twice natural size.

104. Sonchus asper, Vill. [Sow Thistle].
Heads resembling wild lettuce but larger, 1/3 inch broad. Fruits flat, ribbed but not bealœd, bearing a tuft of long white hairs at apex.
Plate VII, Fig. 104, A branch with three heads, natural size; a seed-like nutlet, twice natural size.

105. Apocynum cannabinum, L. [Indian Hemp],
Fruit a long, cylindrical, slightly curved, one-celled pod, three or four inches long, two from each flower. The pods are hanging and split along one side. Seeds, numerous, .2 inch long, pointed at apex with a tuft of long white silky hairs.
Plate IX, Fig. 105, Two pods, natural size; a seed, twice natural size.

106. Asclepias Cornuti, D.C. [Milkweed].
Fruit a one-celled ovate pod, about two inches long, opening along one side. Surface densely hairy and also covered with weak spines. Fruits erect, usually single, upon each stalk, but may be more numerous: Stalk curved as shown in drawing. Seeds orbicular, flat, 1/3 inch long, bearing tuft of hairs as apex.
Plate IX, Fig. 106, A pod, one-half natural size; a seed, one-half natural size.

107. Enslenia albida, Nutt. [Climbing Milkweed].
Fruits hanging in pairs, cylindrical, narrow at apex, smooth, two or three inches long, Seeds resembling No. 106.
Plate IX, Fig. 107, Two pods, one-half natural size; a seed, one-half natural size.

108. Cynoglossum officinale, L. [Hound's Tongue].
Fruits dividing into four parts, or nutlets, which do not open to let out the seed. Nutlets ¼ inch long, covered with barbed prickles, which enables them to stick to clothing.
Plate IX, Fig. 108, A branch with several fruits, natural size; a single nutlet showing back and also one showing scar, where it separated from the axis, twice natural size.

109. Echinospermum Virginicum, Lehm. (Beggar's-lice).
Fruits similar to No. 108. Nutlets .18 inch long, covered on the back with barbed prickles
Plate IX, Fig. 109, A branch with three fruits, natural size, two views of nutlet showing back and inner face, twice natural size.

110. Echinospermum Redowskii occidentale, Wats. (Smell Beggar's-lice).
Fruits similar to No. 108. Nutlets .1 inch long, armed along the edge with a single row of barbed prickles.

Plate IX, Fig. 110, A branch with four fruits, natural size; two views of nutlet, twice natural size; a spine from margin of nutlet, eight times natural size.

111. Echinospermum Redowskii cupulatum, Gray.

Differs from No. 110 in having the bases of the marginal prickles coalesced into a ring.

Plate IX, Fig. 111, Two views of nutlet, twice natural size.

112. Krynitzkia crassisepala, Gray.

Fruits separating into four parts as in No. 108, but enclosed in the bristly calyx lobes. Nutlets .07 inch long, smooth.

Plate IX, Fig. 112, A branch with fruit, natural size; a simple calyx enclosing fruit, twice natural size; two views of nutlets, twice natural size.

113. Ipomoea hederacea, Jacq. (Morning Glory).

Fruit a smooth, three-celled pod, .4 inch broad, which splits at three places to let out the for angular, dark, velvety seeds. The five narrow calyx lobes are nearly an inch long, and bristly hairy on the outside. Seeds ¼ inch long.

Plate IX, Fig. 113, A pod, natural size; a seed, twice natural size.

114. Ipomoea purpurea, Lam. (Common Morning Glory).

Resembles No. 113, pods and seeds rather smaller. Calyx lobes not much over ½ inch long.

Plate IX, Fig. 114, A pod, natural size; a seed, twice natural size.

115. Convolvulus sepium, L. (White Morning Glory.)

Fruit resembling No. 113, a two-celled pod opening at two or four places to let out the four seeds. Pod raised on a long stalk surrounded by five calyx lobes and also by two larger broad bracts. Seeds .22 inch long.

116. Convolvulus sepium repens, Gray.

Fruit scarcely to be distinguished from No. 115.

Plate X, Fig. 115, A pod, natural size; another view with bracts removed, natural size; a seed, twice natural size.

117. Convolvulus arvensis, L. (Bindweed.)

Pod much as in No. 115, but only .1 inch broad, enclosed in five roundish sepals, but without any beak-like bracts.

Plate X, Fig. 117, A pod, natural size.

118. Cuscuta arvensis, Beyrich. (Dodder.)

Fruit a two-celled, papery, depressed, globose pod .1 inch broad. The five-lobed calyx remains at the base of the pod. The pod at maturity remains closed or may burst irregularly to let out the one to four smooth seeds, which are .06 inch long.

Plate X, Fig. 118, A cluster of pods, natural size; a pod twice natural size; a seed, eight times natural size.

119. Solanum triflorum, Nutt. (Spreading Nightshade.)

Fruit a globose green berry, .4 inch broad, one to three in a bunch, the stalks curved back, Calyx lobes, five at base of berry. Seeds, numerous, flattened, roughened, .1 inch long.

Plate X, Fig. 119, A berry, natural size; a seed, eight times natural size.

120. Solanum nigrum, L. (Nightshade.)

Fruit a globose, black berry. .4 inch broad, usually several in a bunch. Calyx smaller at base of berry. Seeds as in No. 119.

Plate X, Fig. 120, A cluster of berries, natural size; a seed, eight times natural size.

121. Solanum Carolinense, L. (Horse-nettle.)

Fruit a globose, yellow berry, .7 inch broad. Berries several, scattered along a stem, the special stalks curved back. The skin becomes dry and hard. Stems and stalks prickly, but otherwise smooth. Seeds larger than No. 119.

Plate X, Fig. 121, A cluster of berries, natural size; a seed eight times natural size.

122. Solanum elaeaginifolium, Cav. (Prickly Nightshade.)

Berries resembling No. 121, smaller, stalks and calyx densely short woolly, and also more of less prickly.

Plate X, Fig. 122, A berry, natural size; a seed, eight times natural size.

123. Solanum rostratum, Dunal. (Texas Nettle.)

Fruit a globose berry, but enclosed in the five lobed very prickly calyx. In time the berry dries up, the calyx opens and has then the appearance of a pod, opening to let out the seeds. Calyx about $^1/_3$ inch high. Seeds, numerous, black, flattened, pitted, about .1 inch long.

Plate X, Fig. 123, A berry, natural size; a seed, eight times natural size.

124. Chamaesaracha sordida, Gray.

Fruit a globose, greenish berry, .3 inch broad, almost enclosed in the calyx. Seeds, numerous, roughened, .1 inch long.

Plate X, Fig. 124, A berry, natural size; a seed, twice natural size.

Physalis. (Ground Cherries.) Nos. 125 to 131.

Fruit a globose yellow or green berry enclosed in the inflated calyx. Seeds numerous, flattened, smooth, except in No. 125.

125. Physalis lobata, Torr.

Plate X, Fig. 125. A calyx, natural size, a calyx cut open to show berry, natural size; a seed, eight times natural size.

126. Physalis pubescens, L.

Plate X, Fig. 126, A calyx, natural size; a calyx cut open to show berry, natural size; a seed. eight times natural size.

127. Physalis Virginiana, Mill.

Plate X, Fig. 127, A calyx, natural size; a calyx cut open to show berry, natural size; a seed, eight times natural size.

128. Physalis bederaefolia, Gray.

Plate XI, Fig. 128, A calyx, natural size, a calyx cut open to show berry, natural size; a seed, eight times natural size.

129. Physalis lanceolata, Michx.

Plate XI, Fig. 129, A calyx, natural size; a calyx cut open to show berry, natural size; a seed, eight times natural size.

130. Physalis lanceolata pumila, Gray.

Fruit similar to No. 129.

131. Physalis longifolia, Nutt.

Plate XI, Fig. 131, A calyx, natural size: a calyx cut open to show berry, natural size; a seed, eight times natural size.

132. Datura Stramonium, L. (White Jimson Weed.)

Fruit a prickly four-celled pod, 1½ inch long, opening in four places at top to let out seed. At the base is a ridge where the calyx fell off. Prickles toward base shorter. Seeds numerous. black, somewhat roughened, .15 inch long.

Plate XI. Fig. 132, A pod, natural size; a seed, four times natural size.

133. Datura Tatula, L. (Purple Jimson Weed.)

Fruit very similar to No. 132. The prickles are all about the same length.

Plate XI, Fig. 133, A pod, natural size; a seed, tour times natural size.

134. Verbascum Thapsus, L. (Common Mullein.)

Fruit a two-celled pod, ¼ inch long, splitting at apex at four places. Pods numerous, crowded in a long wand like cluster, each pad supported by the five woolly calyx lobes. Seeds numerous, angular, .03 to .04 inch long.

Plate XI, Fig. 134, A portion of stem bearing pods, natural size; a pod, twice natural size; two seeds, eight times natural size.

135. Veronica peregrina, L. (Neckweed.)

Fruit a flattened, triangular, two-celled pod, .15 inch long, notched at apex. Pods without stalks, scattered along the main axis, opening along the edge at the top. Calyx lobes, tour. Seeds numerous, flattened, smooth, .03 inch long.

Plate XI, Fig. 135, A stem bearing two pods, natural size; a pod, twice natural size; a seed. eight times natural size.

136. Martynia proboscidea, Glox. (Devil's Claw.)

Fruit a large woody pod, provided at the apex with two long recurved hooked beaks. Pod about three inches long, the hooks spreading and also curved backward. sometimes nearly to the base. At first, the fruit has a somewhat fleshy covering, but this disappears leaving exposed the fiberous reticulations of the woody interior. Along its inner side is a crest of projections. The pod splits down between the horns. The interior is divided longitudinally into five cavities each filled with seeds, the central cavity being first to lose its contents. Seeds .3 to .4 inch long roughened with tubercles.

Plate XI, Fig. 136, A pod, one-half natural size; a seed, natural size.

137. Verbena urticaefolia, L. (White Vervain.)

Fruits scattered along the wand-like axis, without stalks, surrounded by the four calyx lobes, separating at maturity into four seed-like nutlets, .08 inch long. Nutlets rounded and loosely reticulated on the back and flat on the two inner faces.

Plate XII, Fig. 137, A branch with fruit, natural size; a single fruit with calyx, four times natural size; two views of nutlet, four times natural size.

135. Verbena stricta, Vent. (Blue Vervain.)

Fruits similar to No. 137, but closely crowded. Nutlets, .15 inch long.

Plate XII, Fig. 138, A branch bearing fruit, natural size; two views of nutlet, four time natural size.

139. Verbena bracteosa, Michx. (Spreading Verbena.]

Fruits as in No. 137, but in the axils of long bracts. Nutlets, .08 inch long.

Plate XII, Fig. 139. A branch bearing fruit, natural size; two views of nutlet, four times natural size.

140. Verbena bipinnatifida, Nutt. (Western Verbena.)

Fruits as in No. 137. in the axils of the bracts, but rather crowded. Calyx lobes slender and pointed, bristly. Nutlets .11 inch long, pitted on the back, and with a very narrow scar.

Plate XII, Fig. 140, A branch bearing fruit, natural size; two view of nutlet, four times natural size.

141. Salvia lanceolata, Willd. (Wild Sage.)

Fruits separating into four seed-like nutlets, but showing the scar of union only near the base. Nutlets, oblong, smooth, rounded on the back, flat on the two inner faces, .08 inch long, enclosed in the striate two-lipped calyx. Sometimes all four nutlets do not develop.

Plate XII, Fig. 141, A branch bearing fruit, natural size; a calyx cut open to show fruit, twice natural size; two views of nutlet, four times natural size.

142. Nepeta Cataria, L. (Catnip.)

Fruits as in No. 141. Nutlets, .07 inch long, calyx not trio-lipped, but with five points.

Plate XII. Fig. 142, A branch with cluster of fruits, natural size; a calyx, twice natural size; a nutlet, four times natural size

143. Leonurus Cardiaca, L. (Motherwort.)

Fruits as in No. 141. Nutlets quite angular, flat at top, .09 inch long. Calyx with five sharp spreading points.

Plate XII, Fig. 143, A branch with cluster of fruits, natural size; a calyx, twice natural size; a nutlet, four times natural size.

144. Plantago major, L. (Common Plantain.)

Fruit an oval, two-celled pod, .1 inch long, numerous, in a long slender spike or cluster, two or three inches long. At the base of each pod are the four sepals, which are not quite half as long as pod. The pod breaks open by a horizontal line just at the top of the calyx. Seeds about fell, flat, .04 inch long, with a mucilagenous coat when wet. The partition falls away with the lid of the pod and carries the seeds with it.

Plate XII, Fig. 144, A spike of fruits, one-half natural size; a pod with lid lifted up, four times natural size; a seed, four times natural size.

145. Plantago Rugelii, Decaisne. (Plantain.)

Fruits as in No. 144, .15 inch long. The horizontal beak is below the level of the calyx. Seeds usually six to eight.

Plate XII, Fig. 145, A spike of fruits, one-half natural size; a portion of same, natural size; a pod, four times natural size; a pod with lid removed, four tines natural size; a seed, eight times natural size.

146. Plantago lanceolata, L. (English Plantain.)

Fruit as in No. 144, but spike short and thick, pod .15 inch long. Remains of corolla persistent at apex. Sepals usually three. Seeds two, .13 inch long.

Plate XII, Fig. 146, A spike of fruits, natural size; a pod, four times natural size; a pod with lid litted, four times natural size; two views of seeds, eight times natural size.

147. Plantago Patagonica aristata, Gray. (Bracted Plantain.)

Fruits as in No. 144, spike elongated and with conspicuous, narrow bracts. Pod .2 inch long hearing the withered corolia at apex. Sepals, four. Seeds, two.

Plate XII, Fig. 147, A spike of fruits, natural size; a pod, four times natural size; a pod with lid lifted, four times natura1 size; two views of seed, eight times natural size.

148. Oxybaphus nyctagineus, Sweet. (Wild Pour O'clock.)

Fruits seed-like, ribbed, hairy, narrowed below, .2 inch long. three to five in a five-lobed calyx-like involuere.

Plate XIII. Fig. 148, An involucre open and closed, natural size; a seed-like nutlet, five times natural size.

149. Amarautus retrofiexus, L. (Red-root.)

Fruit a thin-walled, one-celled pod, .1 inch long, which breaks open by a horizontal line, the upper half coming off, like a lot. Sepals, five. Seed, one, smooth and black, .04 inch broad. The differences between this and the next are shown in the drawings of the inflorescence. (Bulletin 57, Pl. XIV, Fig. 149a, which is this species, and Fig. 150a, which represents the next.)

Plate XIII. Fig. 149, Bracts of fruit, four times natural size; pod with five sepals, four times natural size, a seed, four times natural size.

150. Amarantus chlorostachys, Willd. (Pigweed.)

Fruit resembling No. 149. Sepals longer and narrower.

Plate XIII, Fig. 150, A pod with five sepals, four times natural size; a seed, four times natural size.

151. Amarantus albus, L. (Tumble-weed.)

Fruit is as in No. 149. Sepals, three. Pod roughened and not so pointed at top, .04 inch long. Seed a little less than .04 inch long. The whole plant breaks away at maturity, near the surface of the ground, and becomes a tumble weed.

Plate XIII, Fig. 151, A pod, four times natural size; a seed, four times natural size.

152. Amarantus blitoides, Watson. (Pigweed Purslane.)

Fruit as in No. 149, and resembling closely No. 151, but the plant is flat and spreading, and does not become a tumble weed.

Plate XIII, Fig. 152, A branch with fruit, natural size; a pod with lid separated, four times natural size; a seed, four times natural size.

153. Amarantus spinosus, L. (Spiny Amarantus.)

Fruit as in No. 149, but bursting irregularly to let out the seed.. The spines at the base of the leaf are sufficiently characteristic.

Plate XIII, Fig. 153, A pod, four times natural size; a seed, four times natural size.

154. Acnida tuberculata, Moq. (Water Hemp.)

Fruit as in No. 149, opening by a similar horizontal line.

Plate XIII. Fig. 154, two views of pod, four times natural size; a seed, four times natural size.

155. Cladothrix lanuginosa, Nutt.

Fruit globose. not opening to let out the single seed which is about .06 inch broad.

Plate XIII, Fig. 155, A seed and lid of pod, four times natural size.

156. Cycloloma platyhyllum, Moq. (Sand-hill Tumble-weed.)

Fruits scattered along the branches, much flattened horizontally, .1 inch, broad with a jagged. thin wing all around the edge, not opening to let out the single flat seed. Becomes a tumble? weed.

Plate XIII, Fig. 156, A portion of plant with fruits, natural size; a single fruit, four times natural size; a seed, four times natural size.

157. Chenopodium album, L. (Lamb's-quarters.)

Fruit flattened horizontally, .06 inch broad. The covering is thin and papery and does not open spontaneously to let out the single smooth black seed which it tightly encloses. The five sepals are at first folded over the fruit but later become spreading. Sepals strongly ridged on the back.

Plate XIII, Fig. 157, A portion of plant with fruit, natural size; a fruit in the five sepals, four times natural size; a seed, four times natural size.

158. Chenopodium hybridum, L. (Maple-leaved Goose-foot.)

Fruit as in No. 157, but about one-half larger.

Plate XIII, Fig 158, A portion of plant with fruits, natural size; a fruit in the five sepals, four times natural size; a seed, four times natural size.

159. Atriplex argenteum, Nutt. (Salt Weed.)

Fruit enclosed in two woody toothed bracts, as shown in drawing.

Plate XIII, Fig. 159, A portion of branch with fruits, natural size.

160. Corispermum Hyssopifolium, L. (Bug Seed.)

Fruit seed-like, oval, flat on one side, rounded on the other, .l5 inch long. The single seed is grown fast to the covering of the fruit.

Plate XIII, Fig. 160, A portion of branch with fruit, natural Size; a seed-like fruit, four times natural size.

161. Salsola Kali tragus, Moq. (Russian Thistle)

Fruit enclosed in a top-shaped calyx, which is winged all around at the top, horizontally.

Plate XIII, Fig. 161, A portion of branch with fruit, natural size; a single fruit, four times natural size.

162. Phytolacca decandra, L. **(Poke Weed.)**

Fruit a globose purple berry, 1/8 inch broad. Atapex are ten lines, at the base the five sepals. Seeds ten, flat, .13 inch broad.

Plate XIV, big. 162, A portion of a cluster of berries, natural size; a berry twice natural size

Rumex, Nos. 163 to 167.

Fruit a three-cornered black or brown seed-like nutlet, enclosed in three sepals, with three small outer sepals reflexed..

163. Rumex Palientia, L. (Patience Dock.)

The three upper sepals heart-shaped, vein), .2 inch long, one of them bearing a tubercle.

Plate XIV, Fig. 163, A portion of fruit cluster, natural size; nutlet, four times natural size, cross-section of nutlet, four times natural size.

164. Rumex altissimus, Wood. (Pale Dock.)
Resembling No. 163. The upper sepals straight at the base rather than heart-shaped. .15 inch long.
Plate XIV, Fig. 164, A portion of fruit cluster, one-fourth natural size; same, natural size; nutlet, natural size and four times natural size; cross-section of nutlet, four times natural size.
165. Rumex crispus, L. (Curled Dock.)
Upper sepals only .1 inch long, each bearing a tubercle.
Plate XIV, Fig. 165, A portion of fruiting cluster, natural size; nutlet, natural size, and four times natural size.
l66. Rumux obtusifolius, L. (Bitter Dock.)
Upper sep .15 to .2 inch long, with two or three bristly teeth on each side.
Plate XIV, Fig. 166, A portion of fruiting cluster, natural size; nutlet, four times natural size.
167. Rumex Acetoselia, L. (Sheep Sorrel.)
Upper sepals closely surrounding the nutlet, not veiny, and without tubercles, about .07 inch long.
Plate XIV, Fig. 167, A portion of fruiting cluster, natural size; nutlet, four times natural. size.
Polygonum, Nos. 168 to 174.
Fruit a seed-like nutlet, three-angled or disk-shaped, smooth and black, enclosed in the five to six lobed calyx which, however, is not enlarged in fruit and is neither veiny nor tubercle-bearing.
168. Polygonum avicuiare, L. (Door-weed).
Fruits in small clusters at the base of the leaves. Nutlet three-angled, .1 inch long. Plant spreading, sepals green.
Plate XIV, Fig. 168, A branch with fruits, natural size; a calyx enclosing nutlet, twice natural size; a nutlet, four times natural size.
169. Polygonum ramosissimum, Michx. (Wire seed).
Plant erect; fruits more scattered, and nutlet longer than in No. 168, otherwise similar.
Plate XIV, Fig. 169, A branch with fruits, natural size; a calyx enclosing nutlet, twice natural size; a nutlet, four times natural size.
170 Polygonum lapathifolium, L. (Smart-weed).
Fruits collected in more or less nodding spikes at the ends of the branches. Sepals white. Nutlets disk-shaped, .1 inch broad.
Plate XIV, Fig. 170, A spike of fruit natural size; a calyx enclosing nutlet, twice natural size; nutlct, four times natural size.
171. Polygonum Pennsylvanicum, L. (Smart-weed).
Similar to No. 170. Spike erect and thicker. Sepals usually pink. Nutlet usually larger, .15 inch broad.
Plate XIV, Fig. 171, A spike of fruit, natural size; a calyx enclosing nutlet, twice natural size; a nutlet, four times natural size.
172. Polygonum Muhlenbergii, Wats. (Water Smart weed).
Fruit resembling No. 171. Sepals bright pink. The axis along which the fruits are attached is hairy. Nutlet scarcely .1 inch broad.
Plate XIV. Fig. 172, A spike of fruit, natural size; a calyx enclosing nutlet, twice natural size; a nutlet, four times natural size.
173. Polygonum Persicaria, L. (Ladies' Thumb).
Resembling No. 171. Spike shortand thick. Sepals pinkish. Nutlet less than .1 inch broad.
Plate XIV, Fig. 173, A branch with two spikes of fruit, natural size; a seed, four times natural size.
174. Polygonum Convolvulus, L. (Wild Buckwheat).
Fruits in clusters at the base of the spear-shaped leaves. Sepals green. Nutlets three-angled, .15 inch long.
Plate XIV, Fig. 174, A branch bearing fruit, natural size; a calyx enclosing nutlet, twice natural size; a nutlet, four times natural size.
Euphorbia, Nos. 175 to 182. (Spurges).
Fruit a three-celled, three-angled pod, which splits into six pieces letting out the three seeds.
175. Euphorbia serpens, HBK.
Pod smooth, .07 inch long. Seeds smooth, four sided, .04 inch long.
Plate XV, Fig. 175, A portion of branch with cluster of fruit, natural size; a pod, four times natural size; a seed, four times natural size.
176. Euphorbia glyptosperma, Engelm.
Pod smooth, .06 inch long. Seeds four-sided, .04 inch long, each side having about five to six transverse wrinkles. A pod, four times natural size. A seed, four times natural size.

Plate XV, Fig. 176, A portion of branch with cluster of fruit, natural size; a pod, four times natural size.

177. Euphorbia maculata, L.

Pod more or less hairy, 07 Inch long. Seeds four-sided, .03 inch long, each side with four transverse grooves or wrinkles.

Plate XV, Fig. 177, a portion of branch with cluster of fruit, natural size; a pod, four times natural size: a seed, four times natural size.

178. Euphorbia stictospora, Engelm.

Closely resembling No. **177,** but pod more hairy and seed about .04 inch long.

Plate XV, Fig. 178, A portion of branch with cluster of fruit, natural size; a pod, four times natural size; a seed, four times natural size.

179. Euphorbia Preslii, Guss.

Pod smooth, .l inch long. Seeds obtusely four-angled, .05 inch long, sides wrinkled or tubercled.

Plate XV, Fig. 179, A portion of branch with cluster of fruit, natural size; a pod, four times natural size; a seed, four times natural size.

180. Euphorbia hexagona, Nutt.

Pods smooth, .15 inch long. Seeds ovate, roughened, .12 inch long.

Plate XV, Fig. 180, A portion of branch with cluster of fruit, natural size; a pod, four times natural size, a seed, four times natural size.

181. Euphorbia marginata, Pursh. (Snow-on-the-Mountain).

Pod hairy, .02 inch long. Seeds ovate, tubercled, .16 inch long.

Plate XV, Fig. 181, A portion of branch with cluster of fruit, natural size; a pod, four times natural size; a seed, four times natural size.

182. Euphorbia dentata, Michx.

Pod smooth, .12 inch long. Seeds ovate, slightly tubercled, .1 inch long.

Plate XV, Fig. 182, A portion of branch with cluster of fruit, natural size; a pod, four times natural size; a seed, four times natural size.

183. Acalypha Caroliniana, Ell. (Three-Seeded Mercury).

Fruit as in Euphorbia, but more deeply lobed, .16 inch broad, bristly with weak spine-like projections. Seeds globose. pointed, somewhat roughened by wrinkles, .1 inch long.

Plate XV, Fig. 183. A portion of branch with cluster of fruit natural size; a pod, four times natural size; a seed, four times natural size.

184. Cannabis sativa, L. (Hemp).

Fruit a seed-like nutlet, .16 inch long, enclosed in a single pointed hairy sepal which folds around it.

Plate XV, Fig. 184. A portion of branch with cluster of fruit, natural size; sepal, enclosing nutlet, twice natural size; nutlet, four times natural size.

l85. Urtica gracilis, Ait. (Nettle).

Fruit a seed-like nutlet enclosed in two sepals, with two smaller ones outside. Nutlet, ovate, flattened, smooth, .06 inch long. Fruits in spikes at the base of the leaves.

Plate XV, Fig. 185, Two spikes of fruits, natural size; calyx enclosing nutlet, four times natural size: nutlet, four times natural size.

186. Cyperus esculentus, L. (Nut Grass).

A grass-like plant with seed-like nutlets enclosed in a scale. (The habit of the plant and the inflorescence is shown in Bulletin No. 57, Pl. XVIII, Fig. l86.)

Gramineae, (Grass Family). NOS. 187 to 209.

The seeds are tightly enclosed in the covering, making a fruit called a grain. In a few cases the covering is loose as the drop-seed grasses. The grain is at first enclosed between two scales, and these again united in various shaped clusters, as shown in the plates, Wherever the drawing of the plant and inflorescence is given in Bulletin No. 57, it is not repeated in the present Bulletin, but instead only a figure of the grain and the smaller divisions of the inflorescence are given. For distinguishing the different kinds of grasses the reader should refer to the plates and the descriptions of the individual drawings. In Bulletin No. 57 there are drawings of the entire plant. These should be consulted in connection with the drawings of the fruit and seed in the present Bulletin.

187. Paspalm sectaceum, Michx.

Plate XVI, Fig. 187, A spike of fruit, natural size; two views of fruit, five times natural size; cross section of fruit, five times natural size.

188. Eriochloa polystachya, HBK.

Plate XVI, Fig. 188, Two views of fruit, five times natural size; a seed (fruit with glumes removed), five times natural size.

189. Panicum glabrum, Gaudin. (Crab-grass).
Plate XVI, Fig. 189. Two views of fruit. five times natural size; a seed, five times natural size.

190. Panicum sanguinale, L. (Crab-grass).
Plate XVI, Fig. 190, Two views of fruit, five times natural size; a seed, five times natural size.

191. Panicum proliferum, Lam. (Knee-grass).
Plate XVI, Fig. 191. Two views of fruit, five times natural size: a seed, live times natural size.

192. Panicum capillare. L. (Tickle-mass).
The fruiting portion is bushy-branched, very light and after separating from the plant, is blown before the wind as a tumble weed.
Plate XVII. Fig. 192.. Fruiting portion of plant, one-half natural size; two views of fruit, five times natural size; two views of seed, five times natural size.

193. Panicum Crus-galli, L. (Barnyard Grass).
The fruit (spikelets) of this varies considerably. They may be merely pointed or may extend out into a long awn; they, may be green or dark, reddish brown or purple.
Plate XVI. Fig 193, A fruiting portion of plant, natural size; a. fruit with a long awn, a common form, five times natural size; two views of a short awned fruit, Eve times natural size; two views of seed, five times natural size.

194. Setaria glauca, Beauv. (Yellow Foxtail).
Plate XVI, Fig. 194. A fruiting spike, natural size; two views of fruit, five times natural size.

195. Setaria viridis, Beauv. (Green Foxtail).
Plate XVI, Fig. 195 A fruiting spike, natural size; two views of fruit, five times natural size.

196. Cenchrus tribuloides, L. (Sand-bur).
The fruits are enclosed in a number of hard spiny scales which form a bur. The bur breaks off easily and by means of the barbed spines is carried around by animals.
Plate XVI, Fig. 196. A fruiting spike, natural size; a fruit taken from one of the burs, five times natural size; two views of seed, five times natural size; a spine from bur, four times natural size.

197. Aristida oligantha, Michx. (Wire Grass).
The fruit is provided with three spreading awns which enable it to be carried by the wind. The point is sharp and barbed so that it is also easily carried by animals.
Plate XVII, Fig. 137. A fruit with its three awns, natural size.

198. Aristida parpurea, Nutt. (Poverty Grass).
The structure of the fruit is similar to that of No.197.
Plate XVII. Fig 198 A fruit with its three awns, natural size.

199. Sporobolus vaginaeflorus, Vasey. (Drop-seed Grass, Wire Grass).
Plate XVII. Fig 199, A whole plant, one-half natural size; a fruit, five times natural size; a seed, live times natural size.

200. Sporobolus cryptandrus, Gray. (Drop-seed Grass).
Plate XVI, Fig. 200 A fruit. eight times natural size; a seed, eight times natural size.

201, Schedonnardus Texanus, Steud.
The fruiting portion forms a loosely branched spiral, one to two feet long, and tumbles before the wind.
Plate XVI, Fig. 201. A fruiting portion of plant, one-fourth natural size; a fruit with a portion of its axis, eight times natural size: a seed, eight times natural size.

202. Eleusine Indica, Gaertn. (Dog's-tall Grass, Crab Grass).
Plate XVI, Fig. 202, A small cluster of fruits (spikelet). twice natural size; a seed, five times natural size.

203. Munron squarrosa, Torr. (False Buffalo Grass).
Plate XVII, Fig.203, A small cluster of fruits, twice natural size; a seed, five times natural size.

204. Eragrostis major, Host. (Stinking Grass).
Plate XVI, Fig. 204, A small cluster of fruits, natural size; a seed, eight times natural size.

205. Eragrostis Purshii, Schrad
Plate XVI, Fig. 205, A small cluster of fruits, twice natural size; a seed, five times natural size.

206. Eragrostis pectinacea spectabilis, Gray.
The fruiting portion resembles No. 192, and like it, breaks off and tumbles before the wind.
Plate XVII. Fig. 206, A fruiting portion of one-half natural size; a small cluster of fruits, twice natural size; a seed, eight times natural size.

207, Bromus secalinus, L. (Cheat).
Plate XVI. Fig. 207, A small cluster of fruits, natural size; two views of seed, five times natural size.

308. Hordeum jubatum, L. (Squirrel-tail Grass).
Plate XVI, Fig. 208, A fruit with its several long awns, natural size; a seed, five times natural size.

208a. Hordeum pratense,
Plate XVI, Fig. 208a, A fruit with its short awns, natural size: a seed, five times natural size.

209. Elymus Sitanion, Schultes. (Wild Rye).
The fruiting spike breaks off at maturity and tumbles before the wind.
Plate XVI, Fig. 209. A fruiting spike, one-half natural size; a fruit with its awns, one-half natural size; a seed, live times natural size.

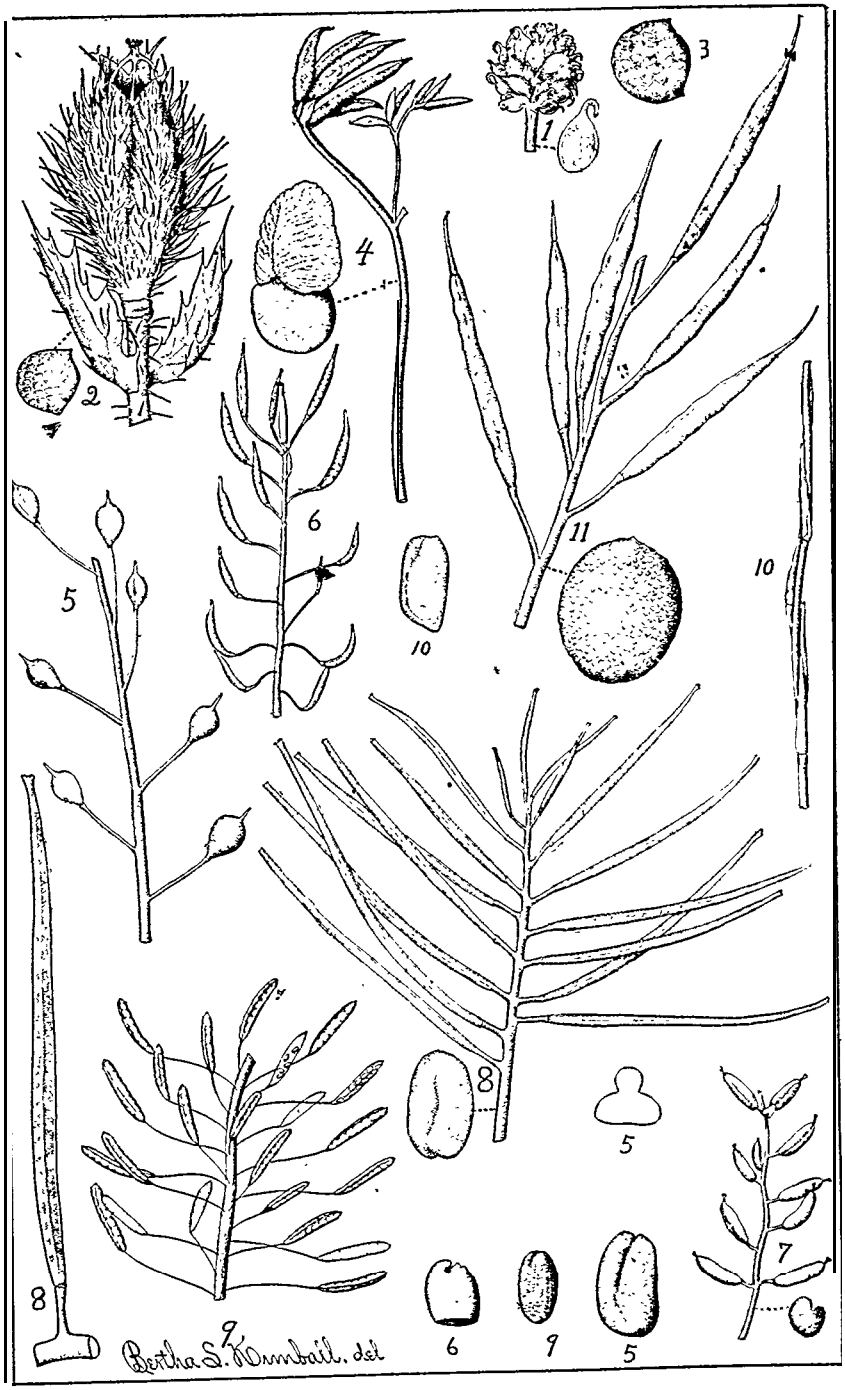


Plate I. Fruits and Seeds of Weeds. Nos. 1-11.

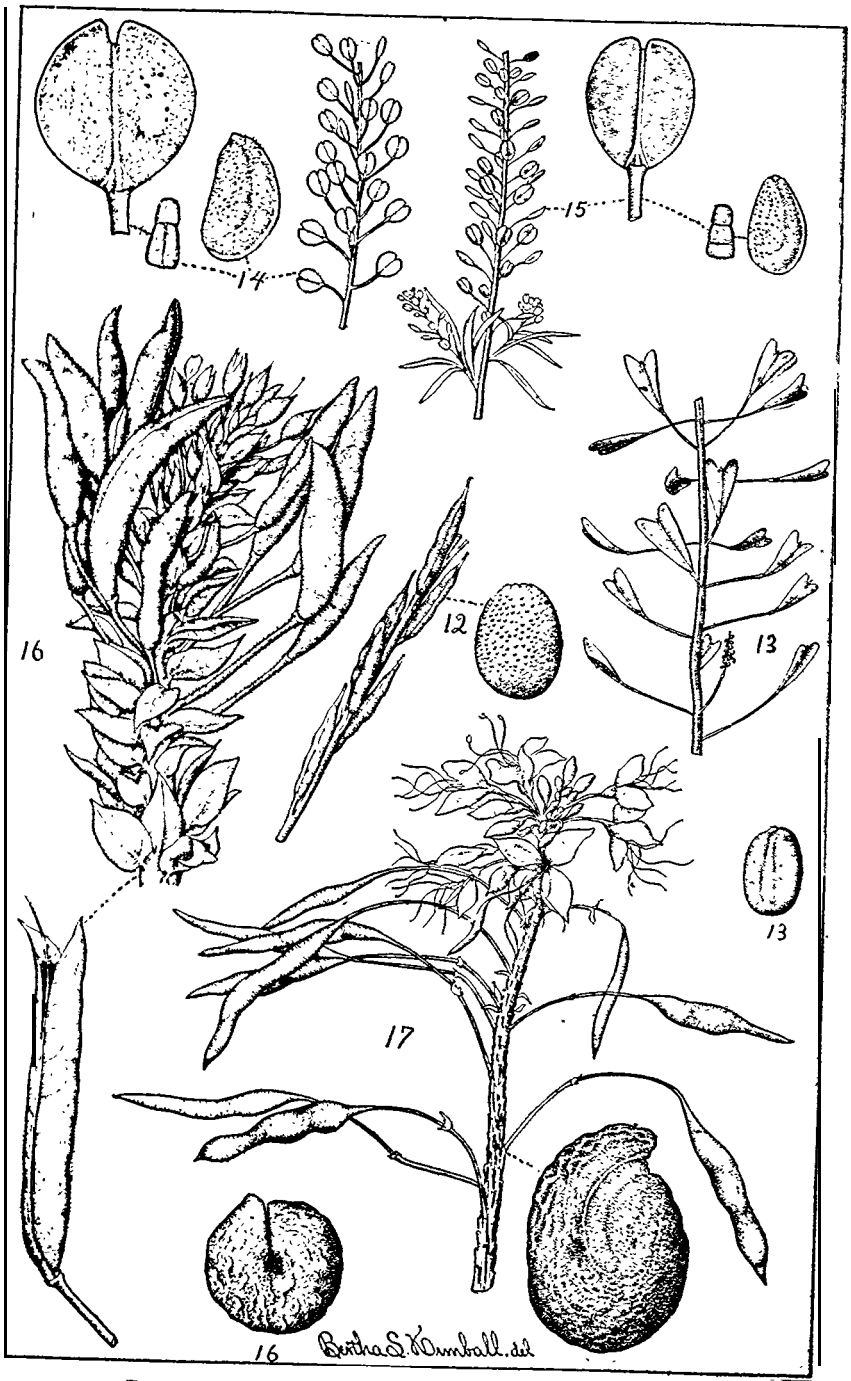


Plate II. Fruits and Seeds of Weeds: Nos. 12–17.

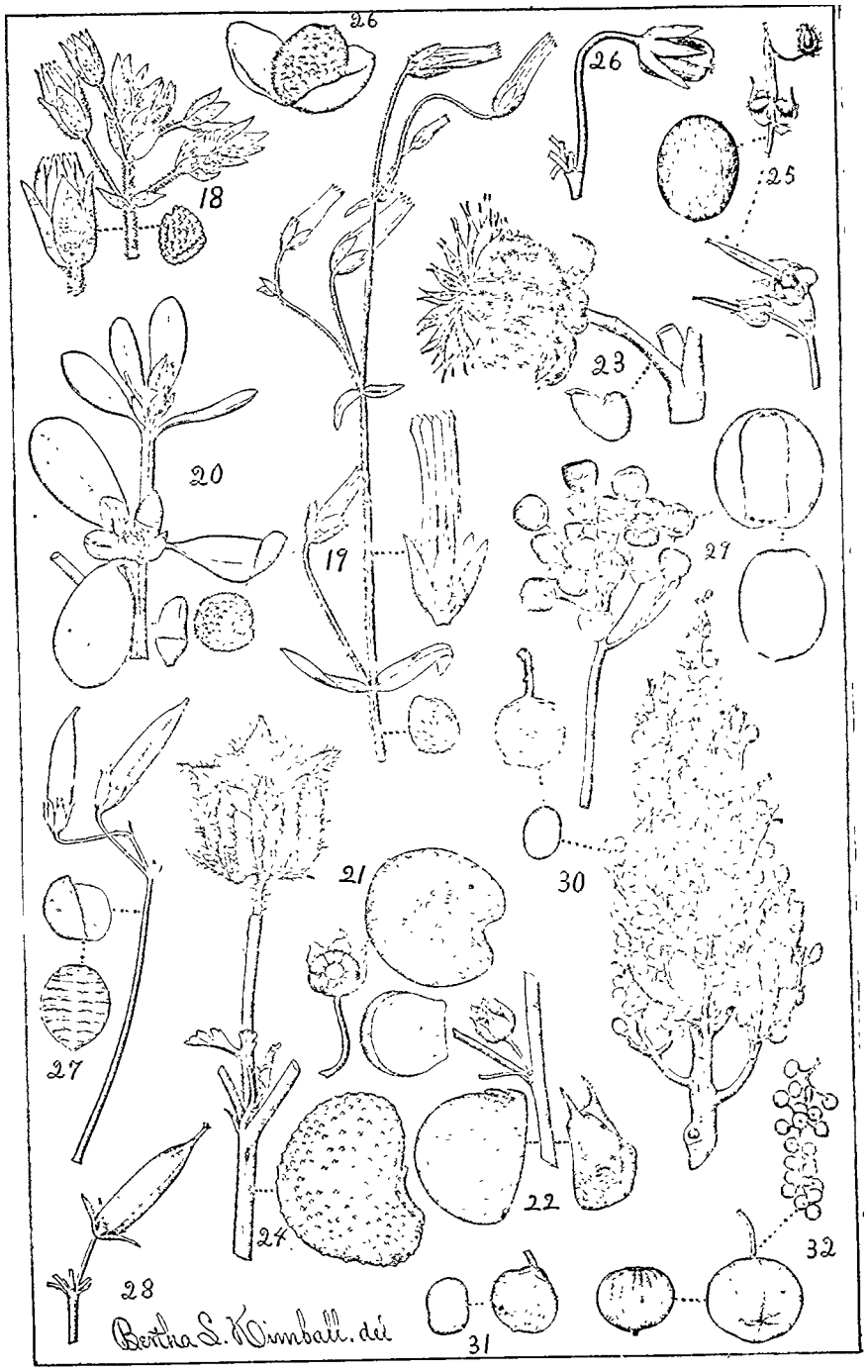


Plate III. Fruits and Seeds of Weeds: Nos. 18

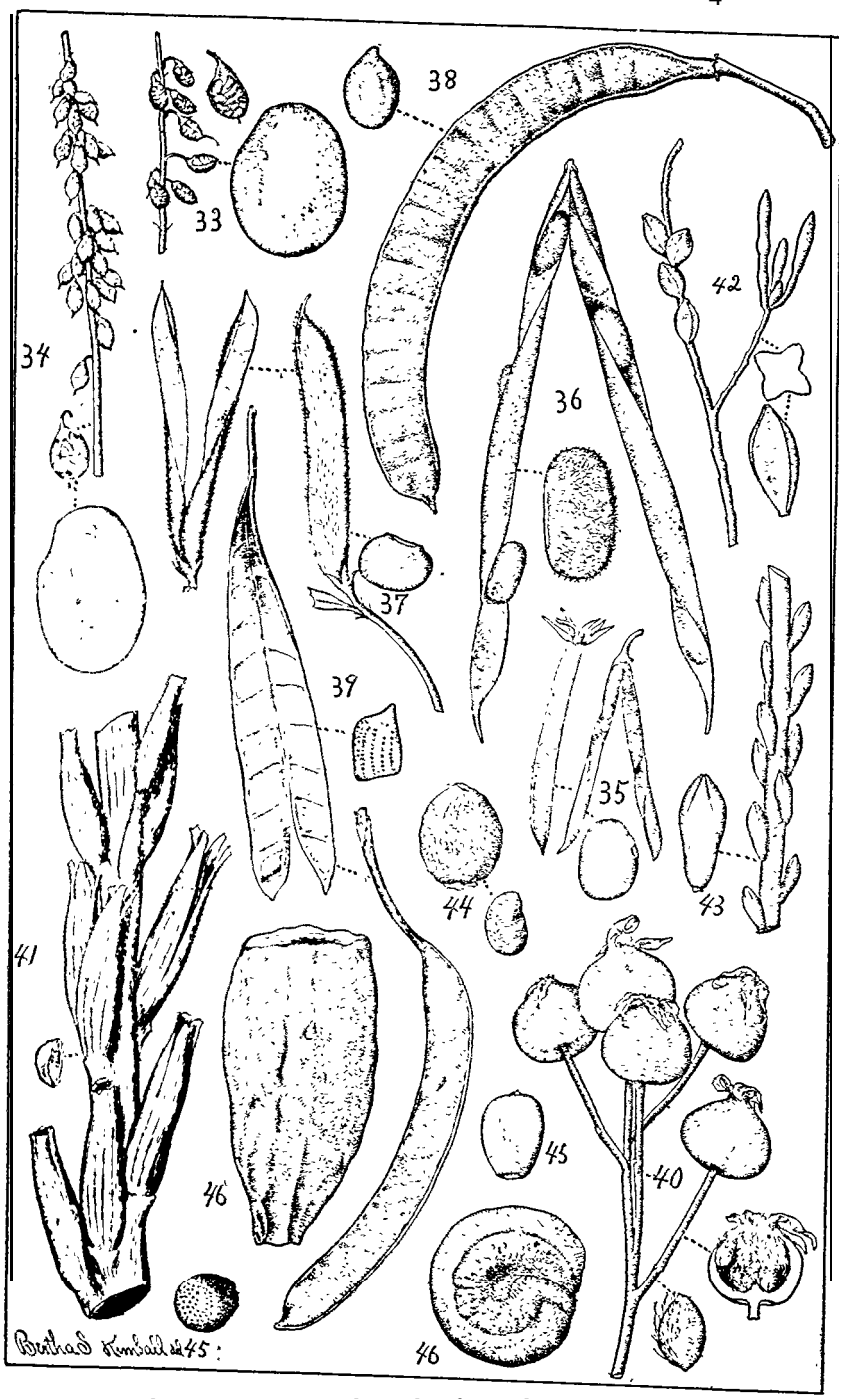


Plate IV. Fruits and Seeds of Weeds: Nos. 33-

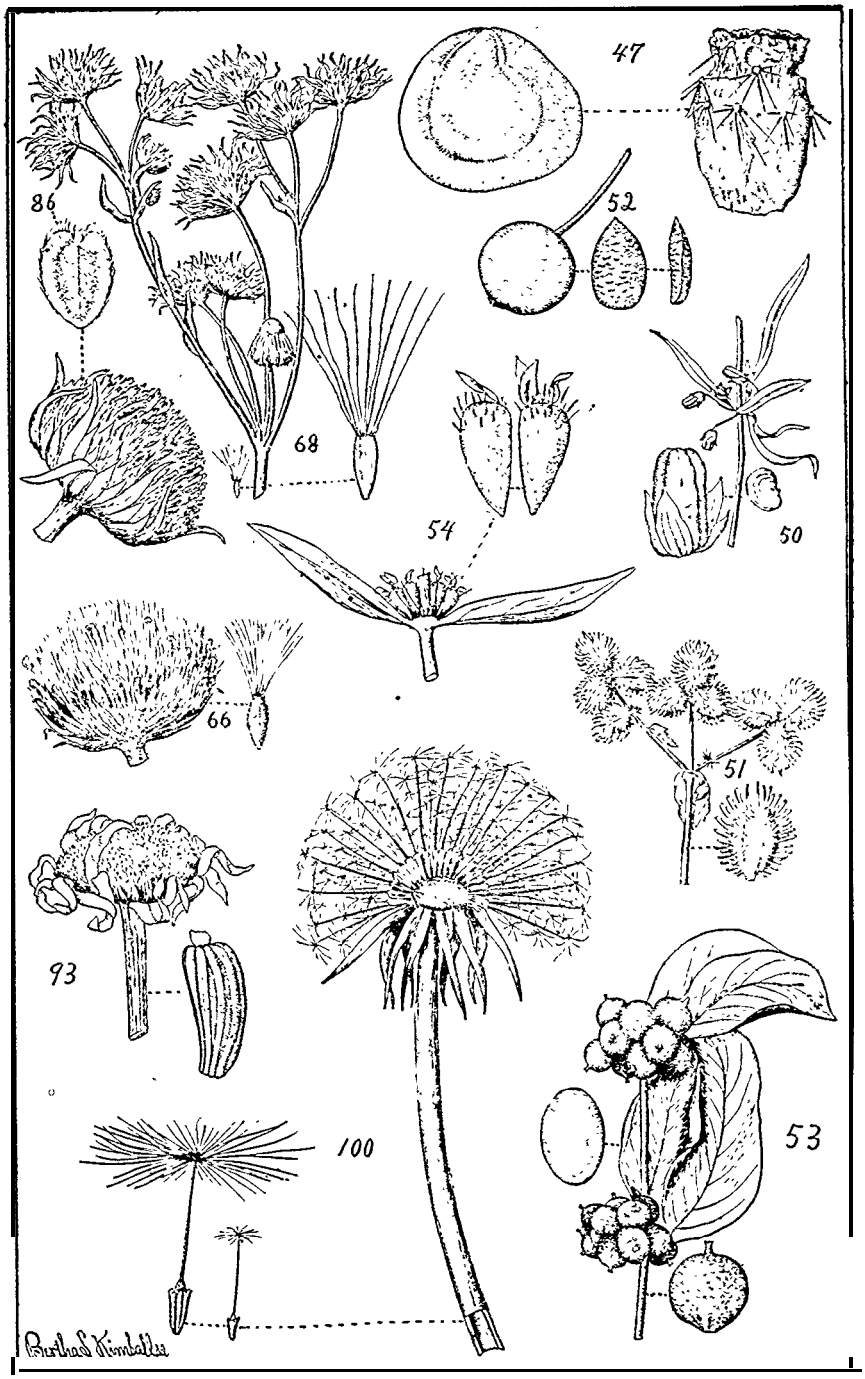


Plate V. Fruits and Seeds, of Weeds: Nos. 47, 50-54, 66, 68, 86, 93, 100

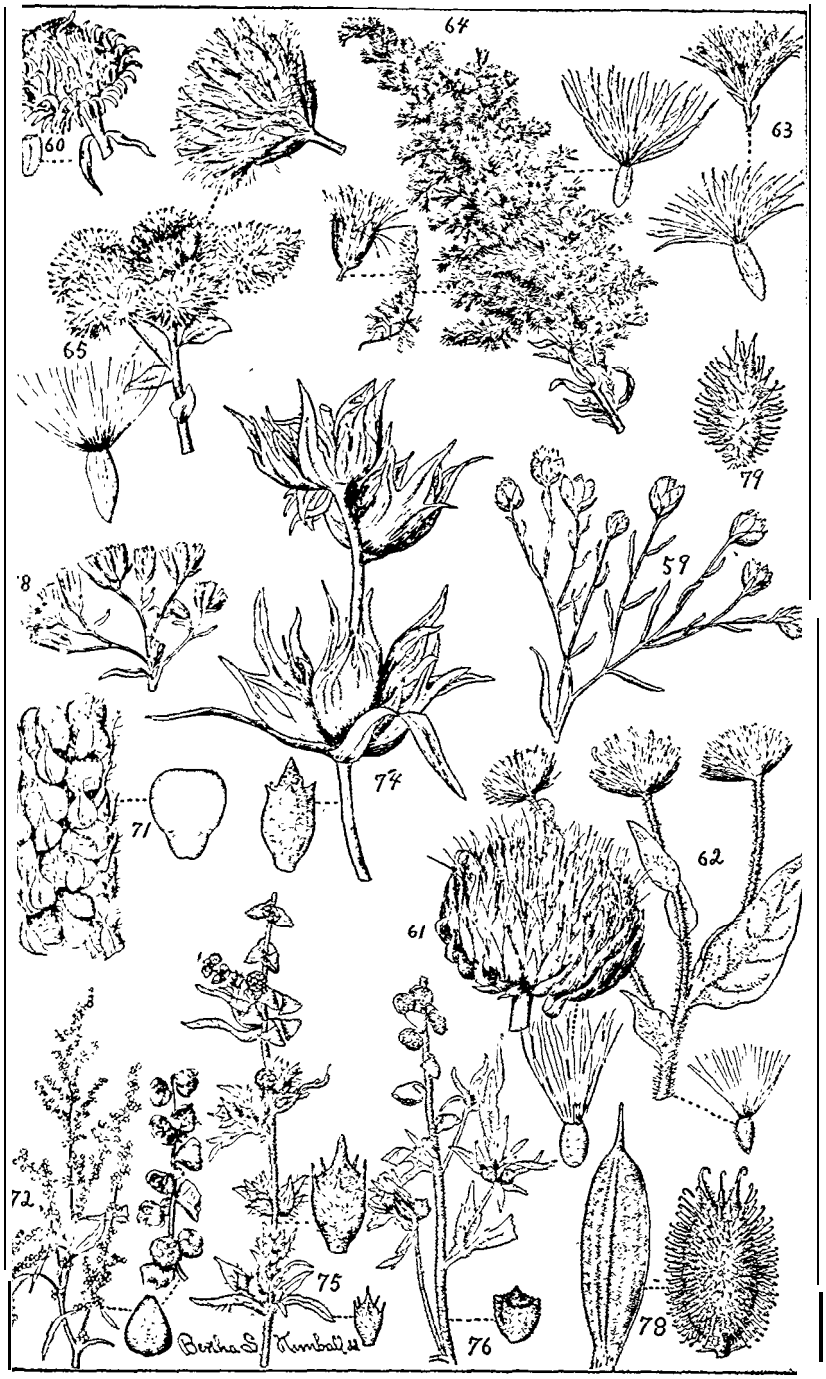


Plate VI. Fruits and Seeds of Weeds: Nos. 58-65, 71, 72,74-76, 78, 79.

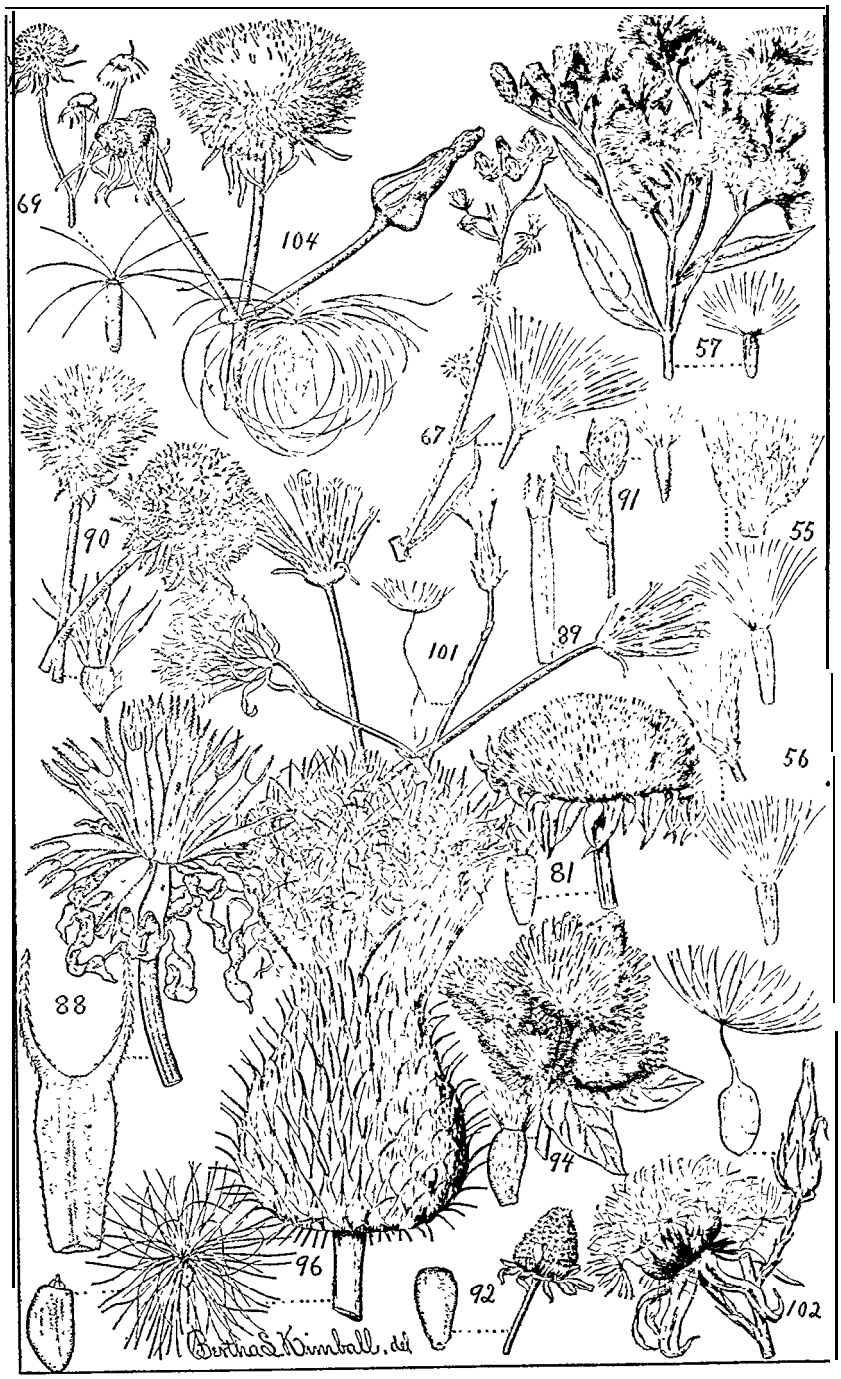


Plate VII. Fruits and Seeds of Weeds: Nos. 55-57, 67, 69, 81, 88 92, 94, 96, 101, 102, 104

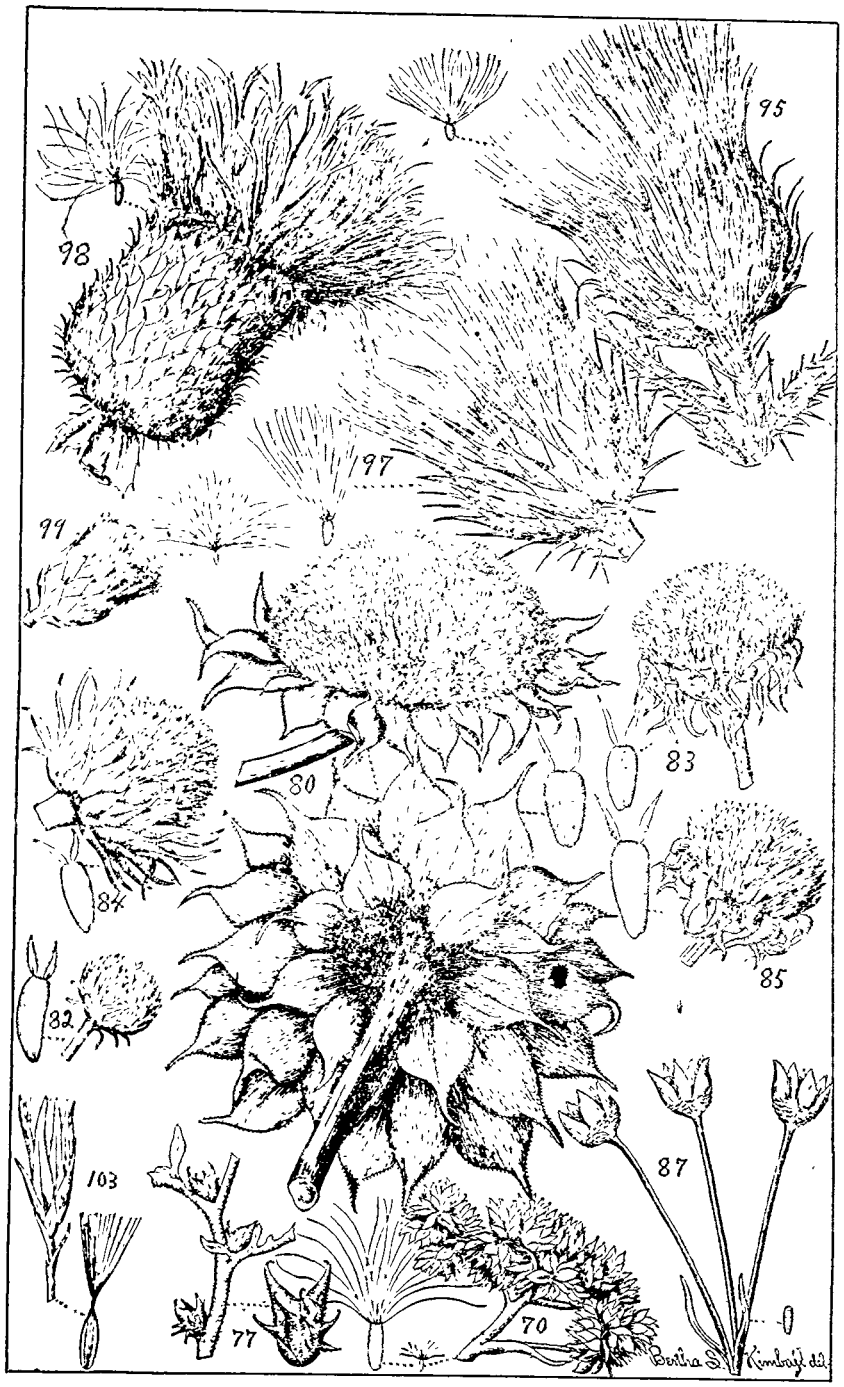


Plate VIII. Fruits and Seeds of Weeds: Nos. 70, 77, 80, 82–85, 87, 95, 97, 99, 103

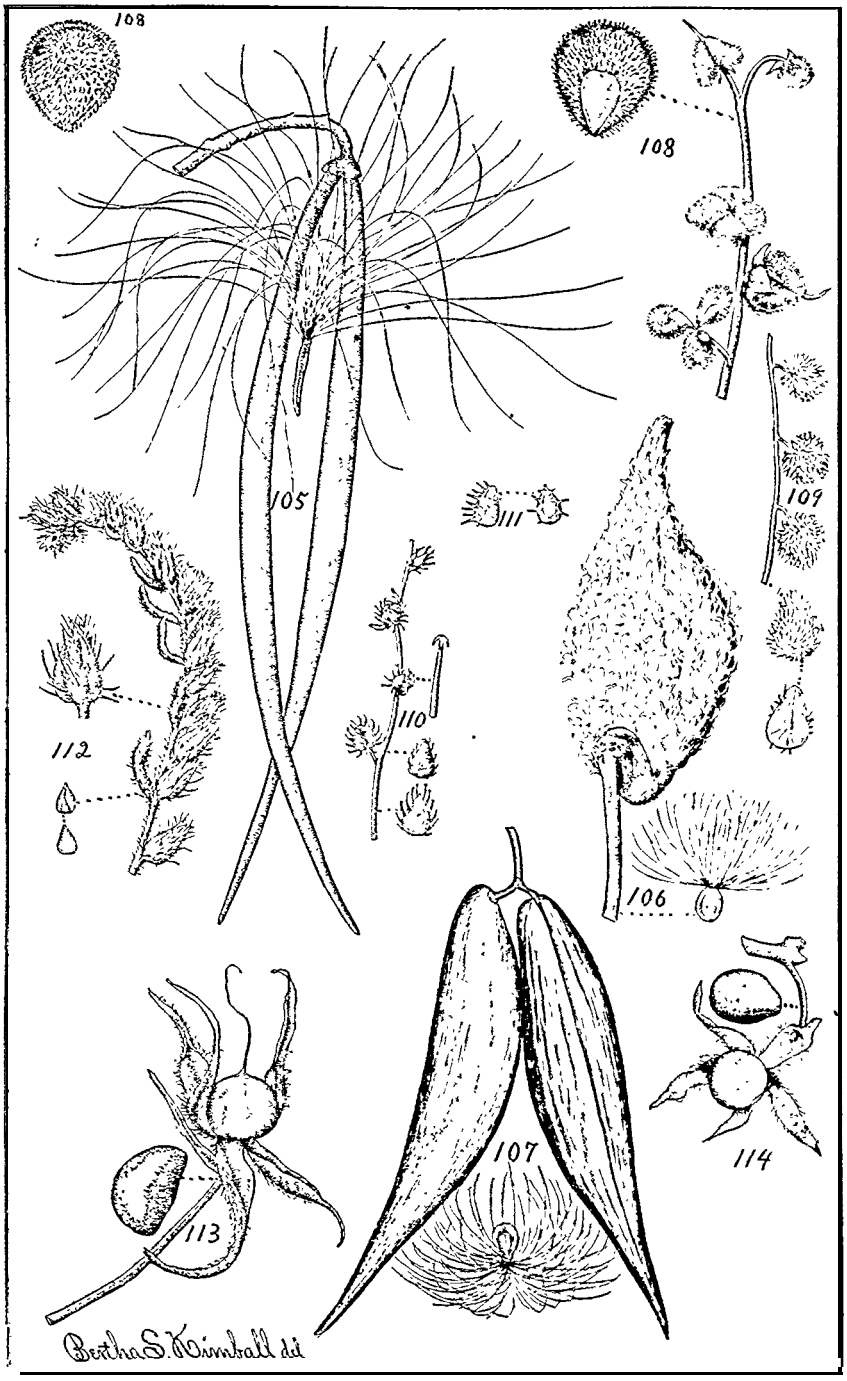


Plate IX. Fruits and Seeds of Weeds: Nos. 105-114.

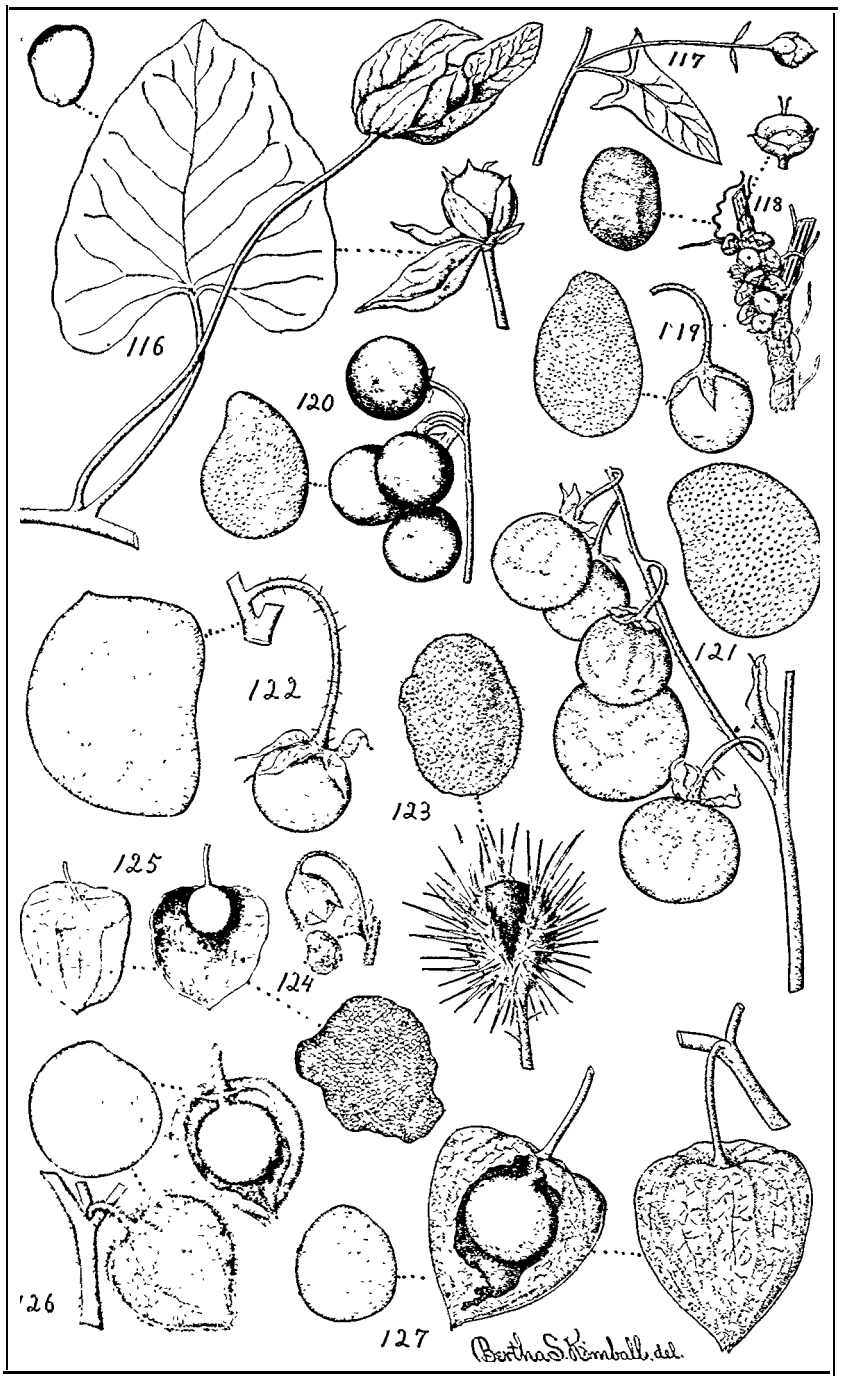


Plate X. Fruits and Seeds of Weeds: Nos. 116-127.

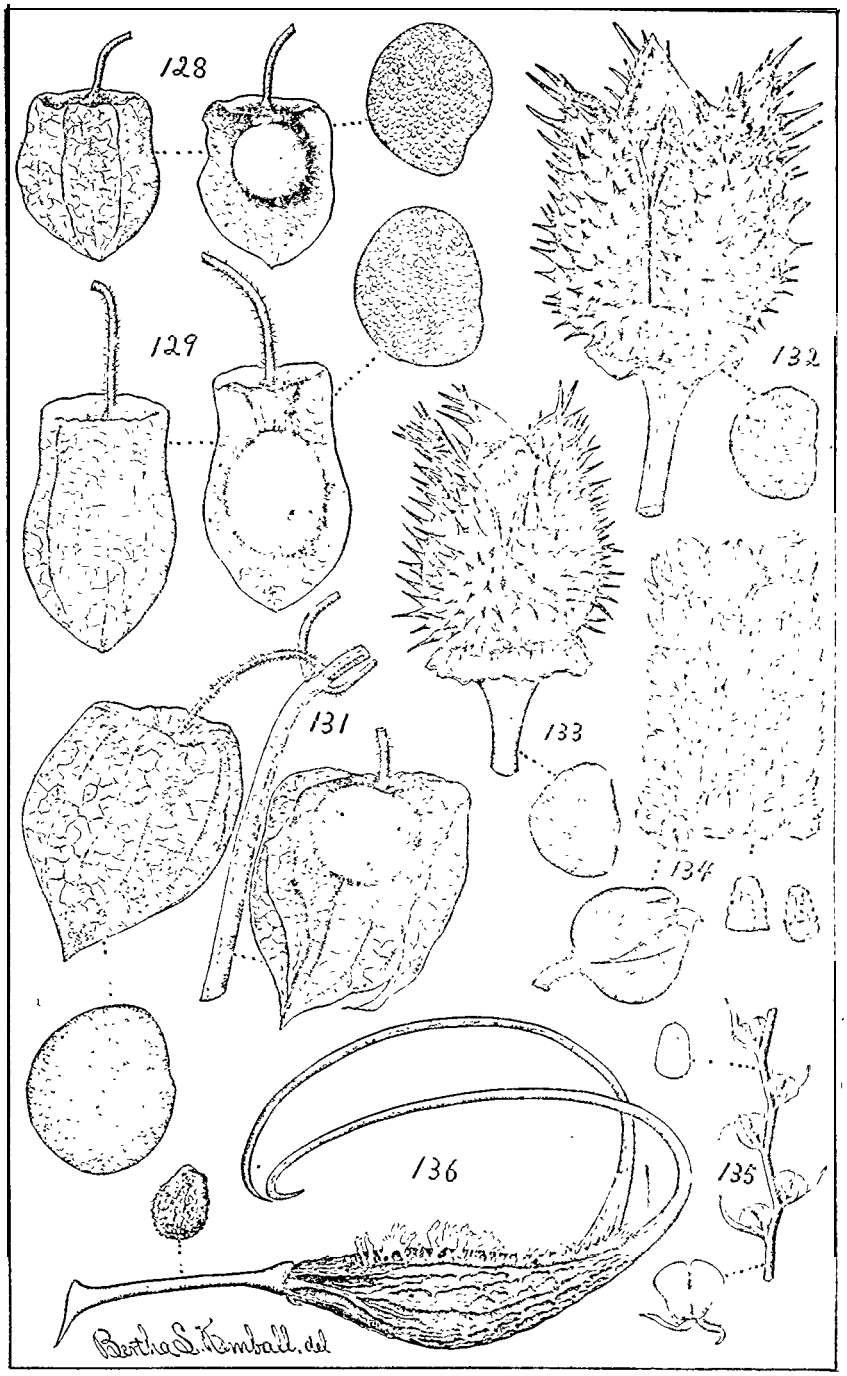


Plate XI. Fruits and Seeds of Weeds: Nos. 128, 129, 131-136.

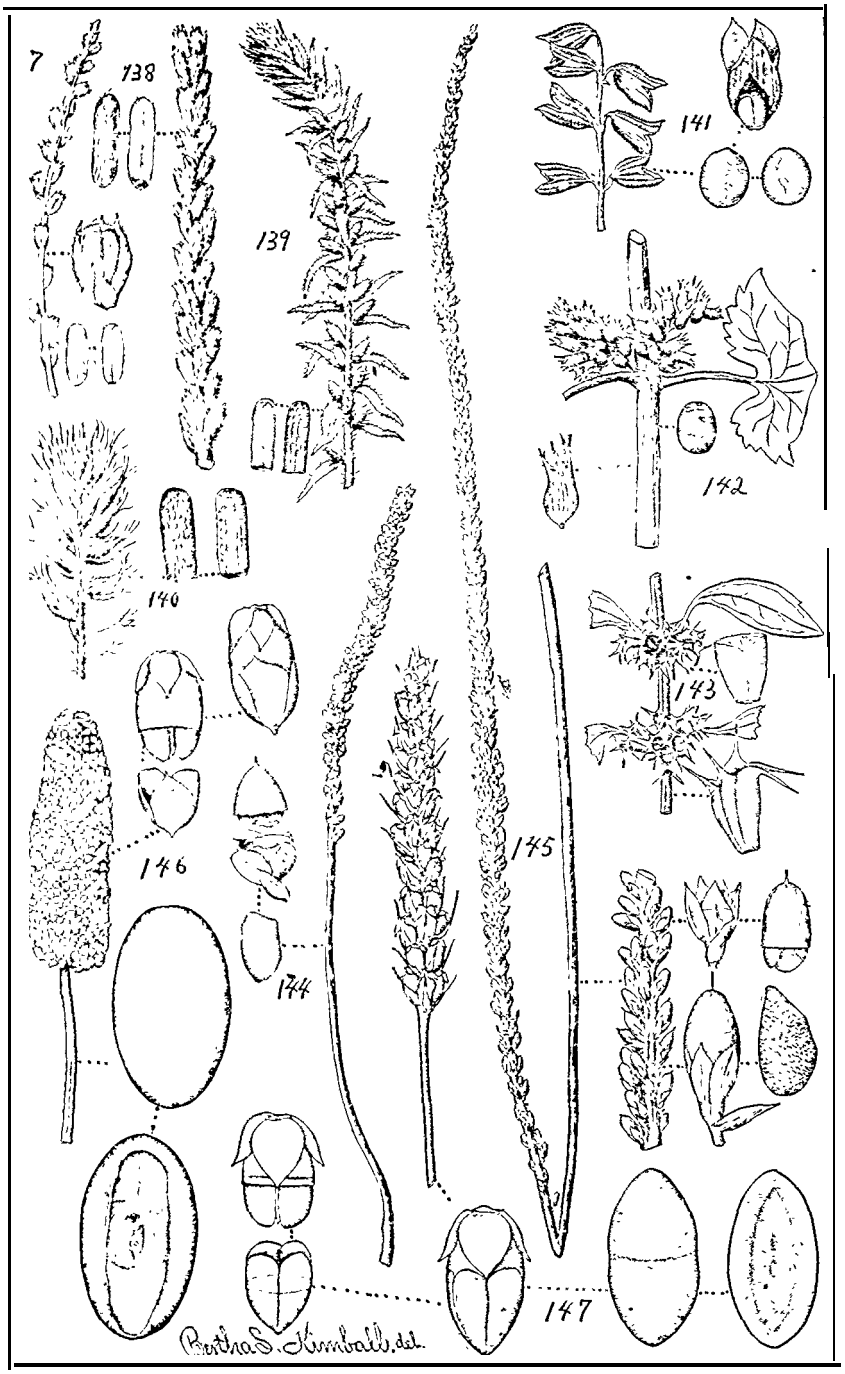


Plate XII. Fruits and Seeds of Weeds: Nos. 137-147.

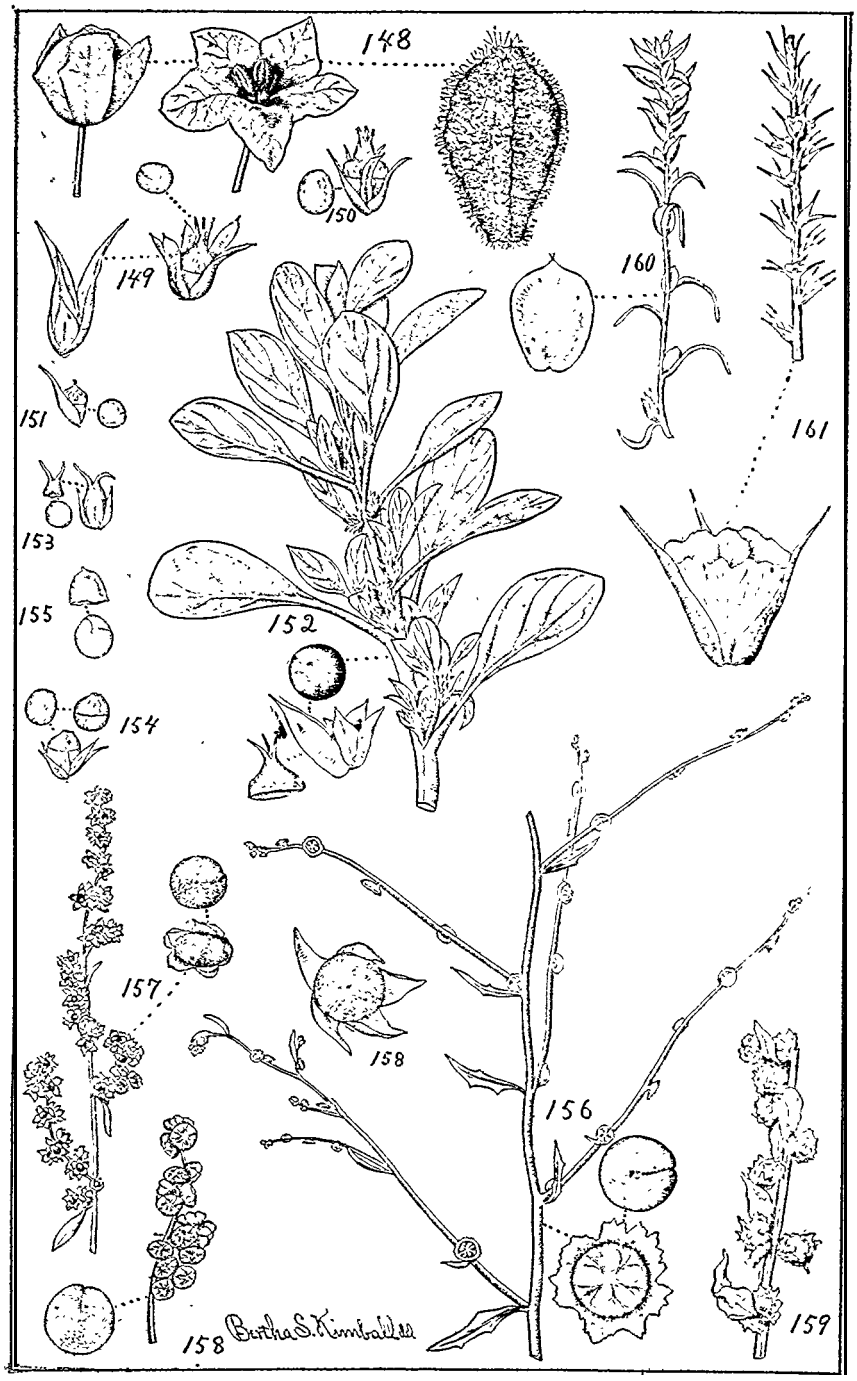


Plate XIII. Fruits and Seeds of Weeds: Nos. 148-161.

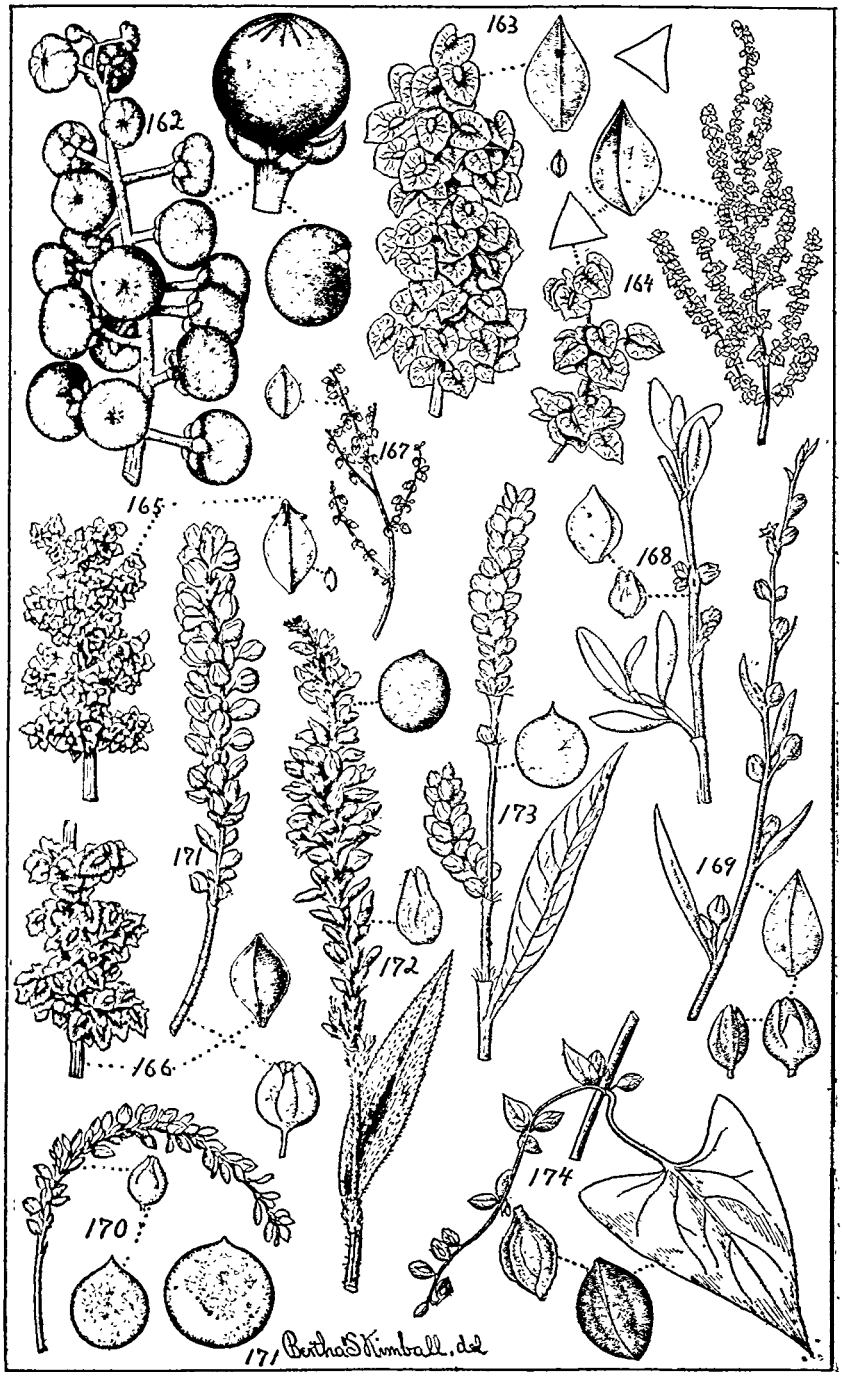
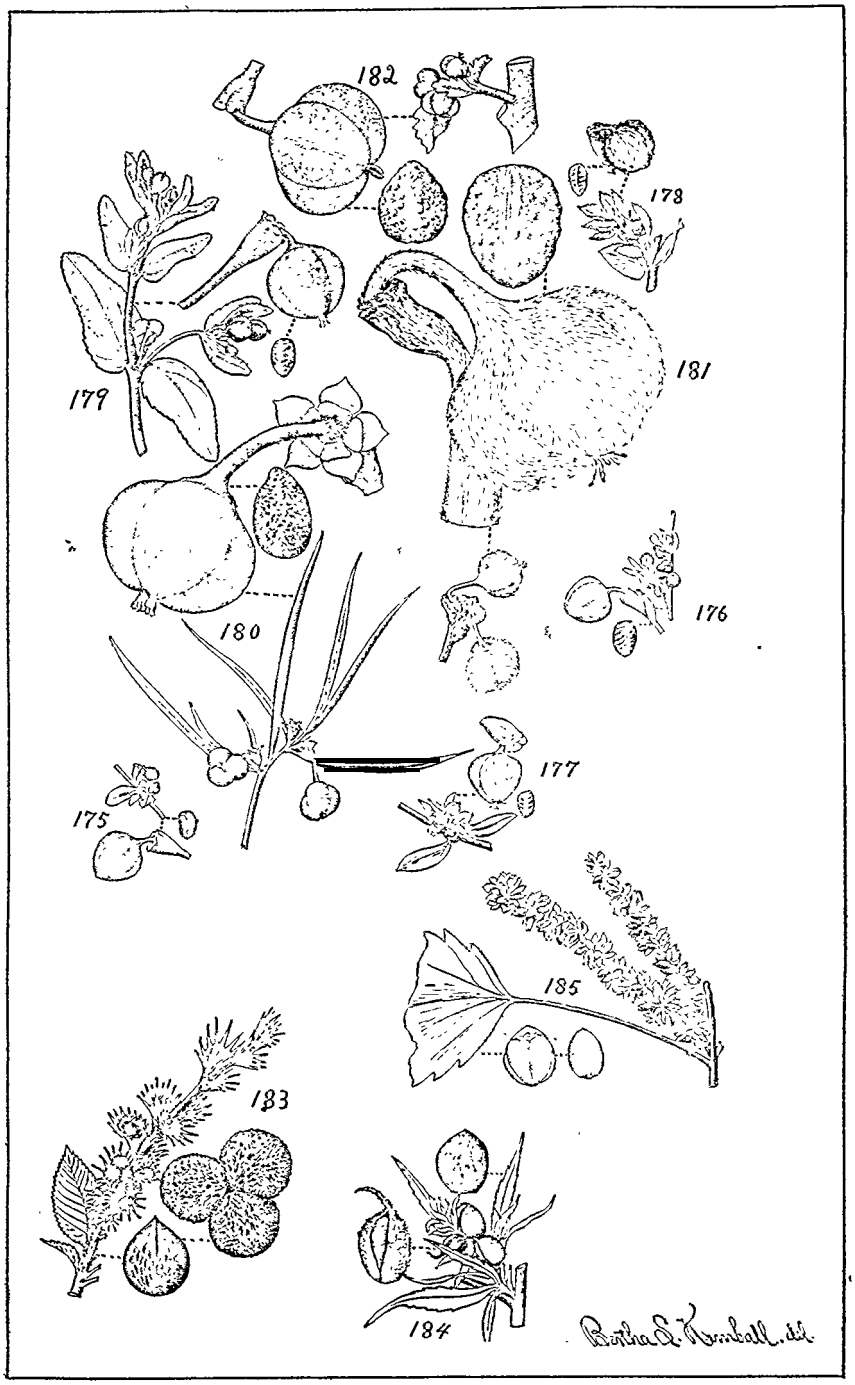


Plate XIV. Fruits and Seeds of Weeds: Nos. 162-174.



[Plate XV. Fruits and Seeds of Weeds: Nos. 175-185.

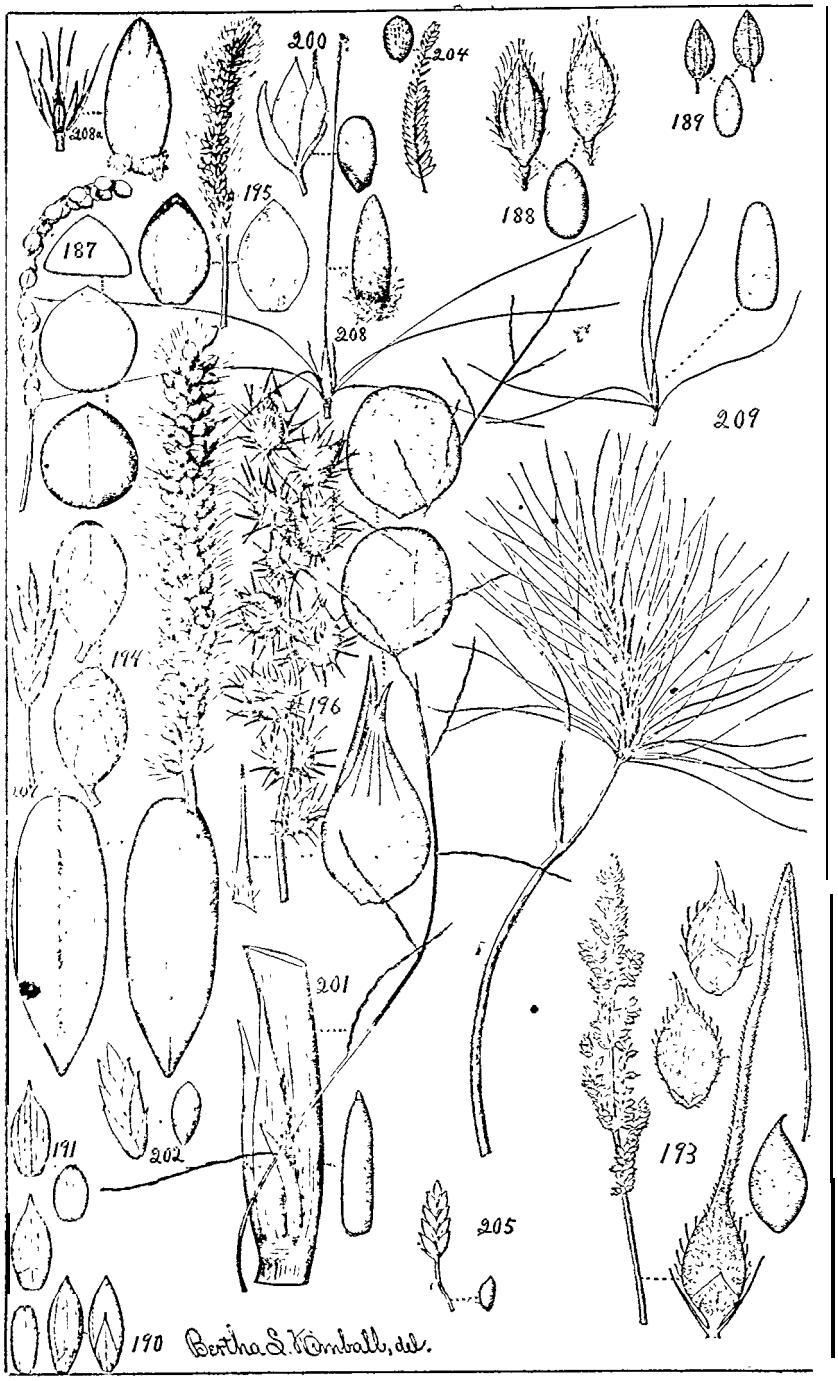


Plate XVI. Fruits and Seeds of Weeds: Nos. 187-191,193-196,200-202,204,205,207-209

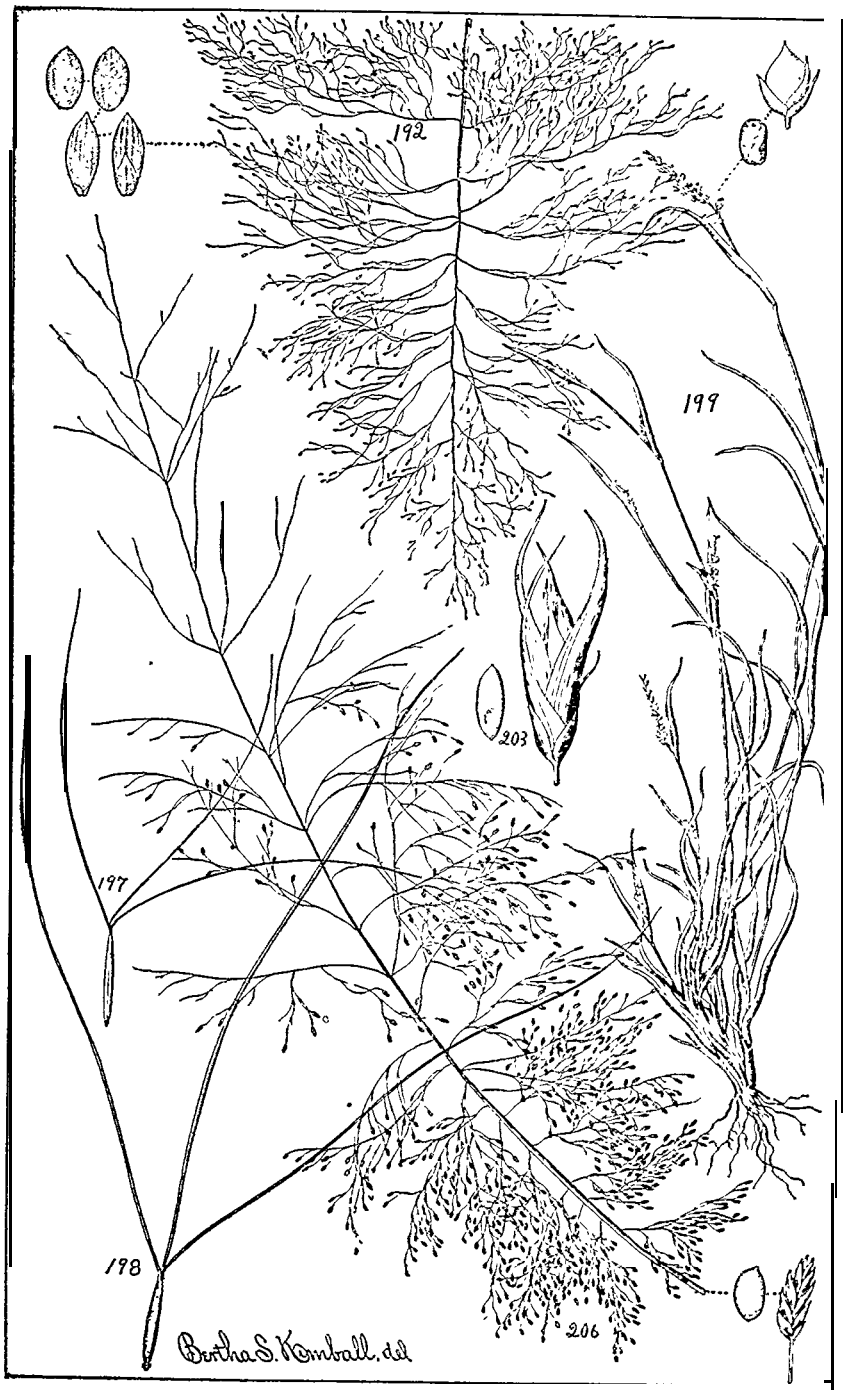


Plate XVII. Fruits and Seeds of Weeds: Nos. 192, 197-199, 203 206.