publication would lead to confusion. I am, therefore, not using it. PLATE 432, FIG. 1 shows the type of var. *stenolepis*, × 2/5. In FIG. 2 the involucre is shown, × 5, the same magnification as FIGS. 3–5.

SOLIDAGO **Jacksonii** (O. Ktze.), comb. nov. *S. corymbosa* Ell. Sk. ii. 378 (1822 or 1823), not Poir. Encyc. Suppl. v. 461 (1817). *Aster Jacksonii* O. Ktze., Rev. Gen. i. 316 (1891).

VII. MEMORANDA ON ANTENNARIA

ANTENNARIA **munda**, sp. nov. (TAB. 433). PLANTA FOEMINEA; foliis rosulatis spathulatis vel anguste spathulato-obovatis, apice rotundatis, petiolatis, lamina 2–6 cm. longa 1.3–5 cm. lata, 3–5-nervia supra minute canescenti-tomentulosa; stolonibus assurgentibus vel procumbentibus foliis terminalibus rosulatis; caulibus floriferis crassis 1–4 dm. altis dense tomentosis; foliis caulinis 6–15, imis oblanceolatis vel late lanceolatis vel anguste oblongis 4.5–8 mm. latis, mediis superioribusque lanceolatis attenuatis apice subulatis, subulo 0.6–1.4 mm. longo; capitulis 5–20 glomerulatis vel dense corymbosis, corymbis subglobosis 2–4.5 cm. diametro; involucris 8–10 mm. altis; bracteis 3–4-seriatis, basi brunneis vel purpurascentibus, exterioribus anguste oblongis apice obtusis erosis lacteis, bracteis interioribus angustatis acutis; corollis 5.5–7 mm. longis; stylo rufescente exserto bifido; achaeniis maturis 1.5–1.8 mm. longis; pappi setis longioribus 8–9 mm. longis. PLANTA MASCULA (rarissima); parva, 1 dm. alta; corymbis densis 1.5–2.7 cm. latis; involucris 5 mm. altis; bracteis patentibus ovalibus lacteis apice erosis; pappi setis apice dilatatis integris vel undulatis.—Sandy, gravelly or sterile rocky fields and open woods, rarely damp meadows, central Maine to the Ottawa valley, Quebec, west to Thunder Bay Distr., Ontario, south to Massachusetts, Connecticut, northeastern Pennsylvania, central and western New York, northern Indiana and Minnesota. TYPE: sandy wooded slope, Orono, Maine, May 31, 1901, *Fernald* (in Gray Herb.)

Antennaria munda, named for its neat and comparatively elegant appearance as well as for its nearly spherical inflorescence, is the plant which has erroneously passed as *A. occidentalis* Greene. The latter was merely the prairie specimens of *A. fallax* Greene, Pittonia, iii. 321 (1898). Greene published *A. fallax* as occurring only in the District of Columbia; and he separated from it, on the next page (322) the plant "of the Illinois prairie region, and apparently westward to Kansas. . . . The species, as to the typical plant of central Illinois, was too hastily by me concluded to form a part . . . of what I have now named *A. fallax*" (*Greene*, l. c.). Described as "very similar" to *A. fallax* but with "cymose panicle of large female heads more open than in either," Greene's *A. occidentalis* can have

nothing to do with the more northern *A. munda,* which has been erroneously referred to it. Numerous sheets designated by Greene as *A. occidentalis* clearly demonstrate its essential identity with *A. fallax,* one of the most widely distributed species.

Antennaria munda was early supposed to be *A. Farwellii* Greene, l. c. 347 (1898). Several specimens from Mr. Farwell and a collection made by *Fernald & Pease* (no. 3552) at the type station show it to be a unique species, as yet known only from Keweenaw Co., Michigan and from the Bruce Peninsula, Ontario, a singular localization if those cytologists are correct who maintain that the parthogenetic species are modern "throw-offs" which have been rapidly spreading since the Wisconsin glaciation. The basal leaves (FIG. 3) of *A. Farwellii* are so very characteristic in their subtruncate summits, with the sides abruptly narrowed to a concave curve, that I am showing them in the plate with *A. munda.*

ANTENNARIA FALLAX Greene, var. **calophylla** (Greene), comb. nov. *A. calophylla* Greene Pittonia, iii. 347 (1898).

The southernmost representative of *Antennaria fallax* is striking in its very rounded or rounded-ovate rosette-leaves. The generally more northern *A. fallax* has the leaves rhombic-ovate to -obovate and tapering above to a subacute tip. The variety ranges from Georgia to Texas, coming north to North Carolina, Indiana, Illinois and Missouri, in the northern states passing insensibly into *A. fallax.*

ANTENNARIA NEGLECTA Greene, forma **simplex** (Peck), comb. nov. *A. neglecta,* var. *simplex* Peck, Bull. N. Y. State Mus. lxvii. Bot. vi. 33 (1903).

The unusual plants of *Antennaria neglecta* with a single terminal pistillate head are strikingly unlike the common plant with glomerulate to spiciform or racemose inflorescences, but the colonies occur sporadically and have no definite range.

ANTENNARIA NEODIOICA Greene, var. **argillicola** (Stebbins), comb. nov. *A. virginica,* var. *argillicola* Stebbins, RHODORA, xxxvii. 232 (1935). *A. virginica* Stebbins, l. c. 230 (1935).

Var. *argillicola* is well marked by its combination of often low stature, very narrow cauline leaves, relatively small pistillate involucres and the abundant staminate plants with involucres shorter than in the very few and rare staminate plants which are known in *A. neodioica* and its other varieties. The herbarium-specimens sent out indicate that Dr. Stebbins originally treated both his *A. virginica* and

its var. *argillicola* as separate species, though in his paper he treated them as a single species. In some characters *A. virginica* is the greater departure from *A. neodioica* var. *attenuata* Fernald, Proc. Bost. Soc. Nat. Hist. xxviii. 245 (1898), in having the pistillate involucres "4.5–6.5 mm." high (Stebbins, p. 231), though changed by Stebbins on p. 234 to "5–6.5," whereas his var. *argillicola* was described on p. 232 with them "5.–6.5 mm." high, changed on p. 234 to "5–7." The change of measurements on the two pages seems to reflect the lack of fundamental differences in the two; and, although in his tabulation of characters on p. 234 Stebbins makes the involucres of the almost strictly pistillate and wide-ranging northern *A. neodioica* var. *attenuata* vary from "7–8" mm. high, it is easy to find northern tall plants of var. *attenuata* with them down to 5.5–7 mm., these too much overlapping the upper measurements given by Stebbins for his *A. virginica*. Furthermore, the small rosette-leaves of the bisexual Alleghenian plants are easily matched by those of the unisexual northern series. As a notable variety of Alleghenian range with both sexes well developed it is definite. As a distinct species it shows altogether too much overlapping of characters. Phylogenetically it may be, as Stebbins maintains, the bisexual and fertile progenitor of the widely dispersed northern and parthenogenetic var. *attenuata*. If, however, we are to follow Stebbins's principle and to distinguish as species the bisexual and the parthenogenetic series which show no other appreciable differences, it should be noted that the northeastern *A. Parlinii* and *A. fallax* are chiefly parthenogenetic, though southward frequently bisexual.

VIII. VARIETIES OF GNAPHALIUM OBTUSIFOLIUM

GNAPHALIUM OBTUSIFOLIUM L., var. **praecox**, var. nov. (TAB. 434, FIGS. 1–3), foliis supra glabris lucidisque; panicula elongata cylindracea vel thyrsoidea ramis vix furcatis; glomerulis hemisphaericis 1.2–2 cm. diametro; involucris 6–7 mm. altis.—Virginia to Georgia and Alabama. VIRGINIA; without stated locality (presumably near Portsmouth), *Rugel*. SOUTH CAROLINA: sandy roadside by pine woods, 2 miles east of Walterboro, Colleton Co., July 17, 1927, *Wiegand & Manning*, no. 3301 (TYPE in Gray Herb.). GEORGIA: sandy field, 4 miles southwest of Hinesville, Liberty Co., July 23, 1927, *Wiegand & Manning*, no. 3302; dry bank, River Road, Athens, August 5, 1929, *J. H. Pyron*. ALABAMA: dry oak-pine thicket, 10 miles north of Dothan, Houston Co., August 11, 1927, *Wiegand & Manning*, no. 3305.

Var. *praecox*, in its elongate inflorescence and very early flowering

Photo. E. C. Ogden

ANTENNARIA MUNDA: FIG. 1, portion of small pistillate plant, × 1, from Vermont; FIG. 2, portion of staminate plant, × 1, from Vermont.
A. FARWELLII: FIG. 3, characteristic basal leaves, × 1, from Michigan.

PLATE 425. SOLIDAGO ELLIOTTII, var. PEDICELLATA, n. var.: TYPE, × ⅔, from Eastville, Virginia, *Fernald & Long*, no. 5520.

PLATE 426. SOLIDAGO RUGOSA Mill., var. TYPICA: FIG. 1, plant, × ⅔, from Esker Point, Groton, Connecticut, September 7, 1903, *C. B. Graves;* FIG. 2, internode and leaf-bases, showing decurrent lines, × 5, from Bingham, Maine, August 29, 1902, *Collins & Chamberlain;* FIG. 3, lower surface of leaf, × 10, from Baddeck, Nova Scotia, *Fernald & Long*, no. 22,702; FIG. 4, involucre, × 5, from no. 22,702.

Plate 427. SOLIDAGO RUGOSA Mill., var. VILLOSA (Pursh) Fernald: FIG. 1, inflorescence, × ⅔, from Rivière du Loup, Quebec, August 3, 1902, *Williams & Fernald;* FIG. 2, inflorescence, × ⅔, from Grindstone Island, Magdalen Islands, *Fernald, Long & St. John*, no. 8123; FIG. 3, internode and base of leaf, showing decurrent lines, × 5, from St. John's, Newfoundland, *Fernald, Long, & Dunbar*, no. 27,128; FIG. 4, involucre, × 5, from same plant as FIG. 1.

PLATE 428. SOLIDAGO RUGOSA Mill., var. SPHAGNOPHILA Graves: FIG. 1, plant, × ⅔, from Fog Plain Brook, Waterford, Connecticut, August 9, 1903, *Graves* (TYPE-collection); FIG. 2, internode and base of leaf, showing decurrent lines, × 5, from TYPE-collection; FIGS. 3 and 4, involucres, × 5, from TYPE-collection.

PLATE 429. SOLIDAGO RUGOSA Mill., var. ASPERA (Ait.) Fernald: FIG. 1, plant, × ⅔, from Chilmark, Massachusetts, *F. C. Seymour*, no. 1362; FIG. 2, internode and leaf-base, showing decurrent lines, × 5, from Franklin, Connecticut, September 1, 1911, *R. W. Woodward;* FIG. 3, lower surface of leaf, × 10, from Sunkipaug, East Lyme, Connecticut, September 16, 1904, *Graves;* FIG. 4, involucre, × 5, from same specimen as FIG. 3.

PLATE 430. SOLIDAGO RUGOSA Mill., var. CELTIDIFOLIA (Small) Fernald: FIG. 1, ISOTYPE of *S. celtidifolia* Small, × ⅔, from Biloxi, Mississippi, *Tracy*, no. 5058; FIG. 2, involucre, × 5, from Pulaski Heights, Arkansas, *Demaree*, no. 8181; FIG. 3, involucre, × 5, from ISOTYPE; FIG. 4, involucre × 5, from Capeville, Virginia, *Fernald, Long & Fogg*, no. 5522.

PLATE 431. Habit, × ⅔; involucres, × 5. SOLIDAGO NEMORALIS Ait.: FIG. 6, involucre, from South Harpswell, Maine, *Greenman*, no. 3502; FIG. 7, from Peters Mountain, Virginia, *Steele & Steele*, no. 275; FIG. 8, from Reading, Pennsylvania, September, 1890, *H. M. Cushman;* FIG. 9, from Ammendale, Maryland, *Hyacinth*, no. 1717; FIG. 10, from Providence, Rhode Island, August, 1844, *Thurber;* FIG. 11, from Hudson Falls, New York, September 25, 1896, *S. H. Burnham;* FIG. 12, from Malpeque, Prince Edward Island, July 26, 1904, *J. Fowler.*

Var. DECEMFLORA (DC.) Fernald: FIG. 4, involucre from an ISOTYPE, Texas, *Berlandier*, no. 1924; FIG. 3, from ISOTYPE of *S. longipetiolata* Mackenzie & Bush, Jackson Co., Missouri, August 19, 1897, *Mackenzie;* FIG. 5, from ISOTYPE of *S. pulcherrima* Nelson, Platte Canon, Wyoming, *Nelson*, no. 2761.

Var. HALEANA, n. var.: FIG. 1, TYPE from Louisiana, *Joshua Hale;* FIG. 2, involucre from TYPE.

PLATE 432. Habit × ⅔; involucres, × 5. SOLIDAGO RADULA Nutt.: FIG. 3, involucre from Grand Tower, Illinois, *Gleason*, no. 1844.

Var. LAETA (Greene) Fernald: FIG. 4, involucre from ISOTYPE of *S. laeta* Greene, from Weatherford, Texas, *Tracy*, no. 8137; FIG. 5, involucre of extreme plant, from Boot Springs, Chisos Mts., Texas, *Cory*, no. 7238.

Var. STENOLEPIS, n. var.: FIG. 1, TYPE, from near Carthage, Jasper Co., Missouri, *E. J. Palmer*, no. 22,161; FIG. 2, involucre from TYPE.

PLATE 433. ANTENNARIA MUNDA, n. sp.: FIG. 1, portion of small pistillate plant, × 1, from Middlebury, Vermont, May 16, 1899, *Brainerd*, no. 29; FIG. 2, portion of staminate plant, × 1, from Middlebury, Vermont, May 10, 1902, *Brainerd.*

A. FARWELLII Greene: FIG. 3, characteristic basal leaves, × 1, from Keweenaw Co., Michigan, *Farwell*, no. 78.

PLATE 434. GNAPHALIUM OBTUSIFOLIUM L. FIG. 4, characteristic inflorescence, × ⅔, from East Jaffrey, New Hampshire, September 2, 1901, *E. F. Williams;* FIG. 5, upper surface of leaf, × 10, from the same collection.