

point where they empty into the Chesapeake Bay. The soil is sand of the lower coastal terrace. Matted in the sand along the inner beach at Stingrey Point was found a small *Vicia*-like plant without flower or fruit. Specimens were taken and attempts at determination were unsuccessful. Handling of sheets of undetermined material recently brought these specimens to attention again. Some of them were sent to Mr. Robert F. Martin, of the Bureau of Plant Industry, Washington, D. C., for comparing with herbarium material. He has determined it as *Vicia lathyroides* L., a European species apparently not previously reported in North America. Professor Fernald informs me, however, that there is flowering and fruiting material in the Gray Herbarium, collected on May 21, 1931 and again in May, 1933 on Nantucket Island, Massachusetts, by Mr. and Mrs. Alfred F. Shurrocks, who wrote of it: "there are carpets, covering acres. . . . It also covers large portions of a field—an old barn lot— . . . and in scattering quantities in other fields." Sheets of the Virginia material have been placed in the Herbarium of the National Arboretum and in the Gray Herbarium.

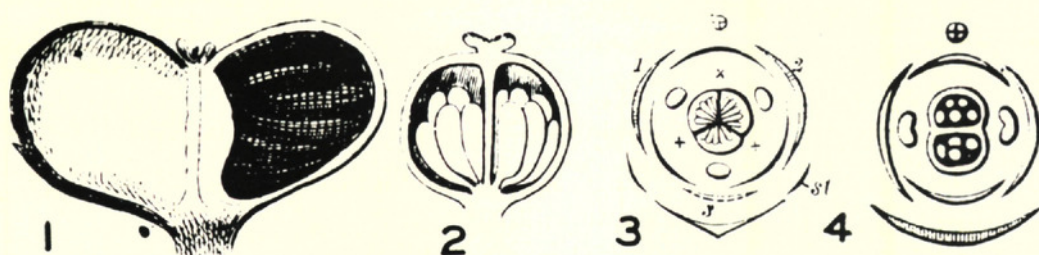
The species will be studied more closely in the field during 1941 and carefully compared with European material.—A. B. MASSEY, Virginia Polytechnic Institute, Blacksburg, Virginia.

ELATINE AMERICANA AND E. TRIANDRA

M. L. FERNALD

The eastern North American *Elatine americana* (Pursh) Arn. has been generally recognized as an endemic species—by Pursh, Arnott, Torrey & Gray, Seubert, Fenzl and others. The habitally similar *E. minima* (Nutt.) Fisch. & Meyer was long confused with it, but in RHODORA, xix. 12 and 13 (1917), I pointed out the differences between them. Subsequently, Fassett, in RHODORA, xxxiii. 72 (1931), has differed from me, in treating *E. americana* as a variety of the largely Old World *E. triandra* Schkuhr and he has reaffirmed this opinion in vol. xli. 373 (1939). His reasoning, as stated in 1931, was, that in its terrestrial state *E. triandra* simulates *E. americana* which has only the terrestrial state and, although in deep water *E. triandra* elongates, like the

aquatic species of *Callitriche*, while *E. americana* does not do so, "an aquatic state like [*E. triandra*] forma *callitrichoides* should be sought in *E. americana*." Furthermore, Fassett felt that "The lack of an elongate aquatic form of the estuarine plant [*E. americana*] has a parallel in the case of *Eriocaulon*. *E[riocaulon]. septangulare*, growing sometimes in as much as 2 m. of water, produces elongate scapes raising the heads to the surface. But the doubtfully distinct *E[riocaulon]. Parkeri* of estuaries, alternately deeply submerged and left stranded on the mud, remains short and stocky like the *E. septangulare* found on the shore." Further assumed parallelisms were given by Fassett, one of them leading him to the conclusion that "*E[latine].*



ELATINE TRIANDRA: FIG. 1, vertical section of fruit, after Seubert; FIG. 3, horizontal section of flower, after Eichler.

E. MINIMA (with seed attached much as in *E. AMERICANA*): FIG. 2, vertical section of fruit, after Gray; FIG. 4, horizontal section of flower, after Eichler (copied from Gray).

triandra . . . var. *americana* has somewhat the relation to *E. triandra* that *Limosella subulata* has to *L. aquatica*."

Since I have not been able to follow Fassett in reducing *Elatine americana* to varietal rank under *E. triandra* and have, consequently, been several times challenged and tacitly reproved for holding to my earlier decision, in keeping *E. americana* apart, it becomes necessary, in the interest of exact taxonomy, to state my reasons. So far as I can detect Fassett has not discussed the fundamental differences in position of ovules and seeds, so clearly understood by Nuttall, Eichler, Asa Gray and others, which seem to me far more significant than variations of leaf-outline. *E. triandra*, as beautifully shown by Seubert in his *Elatinorum Monographia* in Acad. Caes. Leop. Nova Acta, xxi. t. II. fig. 6 (1845), here reproduced as FIGURE 1, has the seeds borne the whole length of the central axis and horizontally divergent; whereas the seeds of the American *E. americana* and

E. minima are borne at the base of the central axis and stand vertically. This fundamental morphological difference has been recognized by most students of the group since Nuttall published the genus *Crypta* in Journ. Acad. Nat. Sci. Phila. i. 117 (1817), based upon *C. minima* Nutt. (*Elatine minima*) of which he gave a most detailed analysis, including "seeds attached to a small basilar and common receptacle". Gray, Gen. Pl. U. S. Ill. i. 219 (1848), set up for *E. americana* (in which he included *Crypta minima*) the subgenus *Crypta* (Nutt.) Gray, with "Placentae basilares, oligospermae . . . a basilar placenta bearing 6 to 12 erect seeds". In the same work subgenus *Crypta* was illustrated by Sprague's drawings of details of *E. minima*, the type of the subgenus, in plate 95. Sprague's drawing of the basally attached and erect seeds, such as can be seen by slight magnification in fruit of *E. americana* and *E. minima*, is here reproduced as FIGURE 2, although Gray later wrote of this figure, "In good fruits, the seeds are rather more numerous . . . in insertion they are not so basal, yet all are ascending.¹ The contrast in position of the seeds in *E. triandra* on the one hand and *E. americana* and *E. minima* on the other was well brought out by Eichler, Blüthendiagramme, ii. fig. 95 C, of *E. triandra*, and fig. 96, of *E. minima* (1872). These diagrams, here reproduced as FIGURES 3 and 4, show in the ovary of *E. triandra* (viewed from above) the horizontally divergent ovules, in *E. minima* the vertical ones. Without enumerating all the careful studies of *Elatine* in which this fundamental morphological difference is brought out, it is sufficient to note that Gray regularly recognized it, saying in his treatment of *Elatine* in the Synoptical Flora of North America, 1¹. 281 (1897), under *E. triandra* "seeds ascending over the whole thickened axis of the capsule", under *E. americana* (including *minima*), "in aquatic form [i. e. *E. minima*] . . . ovules and seeds mainly basilar", "in terrestrial form [i. e. *E. americana*] . . . more axile". In Gray's Manual, ed. 7: 579 (1908) the same morphological difference was expressed under *E. americana* by "seeds . . . rising from the base", under *E. triandra* by "seeds . . . covering the axis." Reexamination convinces me that I am not in error in following Nuttall, Gray, Seubert, Eichler and many others in keeping *E. americana* apart from *E. triandra* and

¹ Gray, *Elatines Americanae* in Proc. Am. Acad. xiii. 363 (1878), Gray here referring to fruiting *E. americana*, rather than *E. minima*.

in following Gray in recognizing as a species *E. brachysperma* Gray.

In view of the implication that *Eriocaulon Parkeri* is "doubtfully distinct" from *E. septangulare*, it may be pointed out that I propose to use the following key-characters in the next edition of Gray's Manual.

E. SEPTANGULARE: mature heads depressed-globose, the abundant and crowded marginal flowers tending to push back and hide the involucre; chaff and flowers fringed by abundant, elongate white club-shaped trichomes; seeds subglobose, rarely globose-ellipsoid.

E. PARKERI: mature heads depressed-hemispherical, loosely few-flowered; involucre not reflexed nor hidden; chaff and flowers glabrous or nearly so; seeds ellipsoid, rarely subglobose.

In eastern Canada and the Atlantic States the ranges and habitats of *Eriocaulon Parkeri* and of *Elatine americana* largely coincide; in the same region *Elatine minima* is found within the broad range of and often associated with *Eriocaulon septangulare*.

GNAPHALIUM OBTUSIFOLIUM VAR. MICRADENIUM IN NEW HAMPSHIRE AND SOUTH CAROLINA.—It may be worth while to record, somewhat belatedly, the occurrence of *Gnaphalium obtusifolium* var. *micradenium* Weath. in New Hampshire. A small colony of it was found Sept. 2, 1936, during a field-trip of the New England Botanical Club, along a wood-road in dry sandy woods in the township of Ossipee. This station does not constitute an extension of range, the variety having been found by Fernald and Long in Limington, Maine, a few miles to the east. It is, however, so far as I know, the first record for New Hampshire. No other New England stations than these two are known to me north of Cape Cod.

Another collection has recently been received at the Gray Herbarium which does extend, southward, the range as given when the variety was published in RHODORA xxv. 22 (1923),—pine barren, near Pineville, Berkeley County, South Carolina, Sept. 11, 1939, *Godfrey* 8195. Messrs. Fernald and Long have added several localities in southeastern Virginia. Specimens from Pike County, Arkansas, *Demaree* 9373A, distributed as var. *micradenium*, are var. *Helleri* (Britton) Blake.—C. A. WEATHERBY, Gray Herbarium,



Fernald, Merritt Lyndon. 1941. "Elatine americana and E. triandra." *Rhodora* 43, 208–211.

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