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SYSTEMATIC STUDIES ON OENOTHERA,— I.
OENOTHERA TRACYI, SP. NOV.

HARLEY HARRIS BARTLETT.

(Plate 93.)

AN adequate systematic treatment of *Onagra*, the subgenus of *Oenothera* typified by *Oenothera biennis*, is greatly needed by students of heredity, who have been led by the work of de Vries to choose material for investigation from this complex and little understood group. On account of the fact that the species can not be correctly interpreted without studying living plants, it is not likely that such a treatment will be soon available. Miss Vail, however, has made a beginning in the careful definition of wild forms tested for constancy by cultivation under controlled conditions. The writer is carrying on a series of cultures at Bethesda, Md., for the purpose of continuing this line of work, and will publish the results as fast as practicable in order to make them available to other students. It is hoped that the work may culminate in a much needed revision.

The desirability of determining the geographic ranges of the allies of *Oenothera biennis* should commend these plants to the attention of collectors. Specimens of the evening-primroses are at best far less satisfactory than most herbarium material, and should therefore be prepared with especial care. They should show all parts of the plant, even if several sheets are required to represent one individual. It is especially desirable to obtain seeds, so that rosettes, or even a second generation of mature plants, may be grown if needed. Our public herbaria do not contain a tithe of the material which a student of the evening-primroses would wish to see before attempting a revision, and many of the available specimens are very poor in quality.

The name *Oenothera Tracyi* is proposed for a southern plant which has appeared in cultures of *Oe. grandiflora* from wild seed collected in 1907 by Prof. S. M. Tracy at Dixie Landing, near Tensaw, Alabama. Several plants grew from the wild seed in the garden at Bethesda, Md., in 1910, from one of which a second generation is now under observation. An identical strain also originated from part of the same lot of seed grown by Dr. B. M. Davis at the Harvard Botanic Garden in 1910, from which a second generation has been grown from self-pollinated seed both at Bethesda and Cambridge in 1911.

Type specimens of the species will be prepared from an individual of the latter strain growing at Bethesda under the collection number 2749. The seed was received from Dr. Davis under the designation "strain S." Photographs by Dr. Davis, from which the illustrations accompanying this article have been prepared, represent plants of the same strain, grown at Cambridge. A description of *Oe. Tracyi* is presented at this time at the request of Dr. Davis, who is preparing a report upon the behavior of certain of its hybrids with *Oe. grandiflora*. The species is named for Prof. S. M. Tracy, to whom students of the evening-primroses are so greatly indebted for the rediscovery of Bartram's locality for *Oe. grandiflora*.

Oenothera Tracyi, sp. nov. Annuæ. Rosula cito evanescens, paucifolia, foliis spatulatis vel oblanceolatis, maximis ca. 9 cm. longis, 2.5 cm. latis, rubromaculatis, apice obtusiusculis, margine sinuatis. Planta matura 1.5–2.0 m. alta, deorsum ramos cauli primario fere aequilongos, sursum usque ad inflorescentiae basin ramos brevis rosulatos ferens. Caules viridis vel roseo-tincti, pilis aliis sparsis patentibus basi rubrotuberculatis aliis densis minutissimis crispis albis vestiti. Folia approximata vix sessilia, remote denticulata, atroviridia, utrinque molliter pubescentia, apice basique acuta, inferiora oblanceolata, ca. 17.5 cm. longa, 3.7 cm. lata, superiora lanceolata. Inflorescentia ex spicis pluribus densis composita, ramulis rubris. Bracteae infimae textura formaque foliis superioribus simillimae, prope basin latissimae, apicem versus angustatae, supremæ angustae fere subulatae, omnes divergentes ciliatae, semper ovario longiores, plerumque fructu breviores. Flores suaveolentes. Hypanthium pallido-viride ca. 34 mm. longum, pilis aliis sparsis curvatis vel subappressis acutis, aliis brevioribus numerosis erectis apice rotundis viscidulis tectum. Calycis segmenta nondum explicata gemmam conicam diametro ad basin 4.5 mm. sub apice 4.0 mm. formantia, 15–22 mm. longa hypanthio sparsius puberula, apicibus liberis 2–3 mm. longis terminalibus inter se appressis, dense pilis acutis crispis pubescentibus. Corolla petalis prima vespera flavis,

altero die, marcescentibus, pallidis, basi carneis, 20–25 mm. longis, 17–23 mm. latis, obcordatis. Stamina petalis paulum breviora valde declinata. Pistillum antheras attingens, stigmatibus 4–6 mm. longis patentibus. Ovarium 8 mm. longum pilis acutis curvatis plerisque non rubrotuberculatis tectum. Fructus maturus 20–28 mm. longus infra mediam 5 mm. crassus, ad apicem versus angustatus, pilis aliis sparsis eis ovarii immaturi similibus, aliis densis minutissimis crispis acutis; apicibus valvulorum liberis brevibus truncatis.—Dixie Landing, near Tensaw, Alabama, seed collected by S. M. Tracy.

BUREAU OF PLANT INDUSTRY, Washington, D. C.

EXPLANATION OF PLATE 93.

- Fig. 1. *Oenothera Tracyi*. Mature rosette, a transitory stage, the main stem beginning its upward growth almost immediately. (Culture of B. M. Davis 11.15).
 Fig. 2. *Oenothera Tracyi*. Mature plant, showing branches 1.5–2.0 m. long from the base of the stem. (Culture of B. M. Davis 10.22.)
 Fig. 3. *Oenothera Tracyi*. Inflorescence, showing the numerous crowded lateral spikes. At the right is a leaf from the lower portion of the main stem. (Culture of B. M. Davis 10.22.)

LYCOPODIUM COMPLANATUM NEAR HARTLAND,
VERMONT.

W. H. BLANCHARD.

MR. HAROLD G. RUGG of Hanover, New Hampshire, has sent me some specimens of *Lycopodium complanatum* L. which seem to match exactly those which I collected in Caribou, Maine, Oct. 3, 1909, and described in the July number of RHODORA. Mr. Rugg gives an interesting account of the discovery of the station which is in the nearby town of Hartland, Vermont. His letter was written August 16, 1911.

“The *Lycopodium complanatum* was growing in mossy ground near the edge of some woods, somewhat shady, in the Lull Brook valley, near Hartland village. In May, 1910, five or six of the members of the Hartland Nature Club were on a bird and plant walk. One of the members asked what Lycopodium we were passing, and I at once recognized it as *L. complanatum* and took a specimen (the fruit had



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