

The Genus *Lagenophora* in the Hawaiian Islands, with Descriptions of New Species.

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THE first Hawaiian representative of this small genus of the Compositæ was discovered by Horace Mann on the summit of West Maui where it is still a common plant. It also occurs on Eke, a small isolated crater to the west of the summit peak Puu Kukui,¹ but has not been reported from elsewhere. Two undescribed species, noted below, occur in bogs on Kauai, while perhaps these or others may eventually be found in bogs on Molokai, East Maui and Hawaii. The habitats of the Hawaiian species are the open bogs of the humid rain-forests at elevations of 4,000 to 6,000 feet. The rainfall in these localities varies from 200 to 600 inches per annum with some rain or fog practically every day in the year.

While on Eke I noticed two forms of *L. maviensis* Mann which at first sight seemed to be distinct varieties, but further study in field and herbarium shows them to be simply variations of a single species. The species and forms may be described as follows:

ARTIFICIAL KEY TO HAWAIIAN SPECIES.

Flower heads large, over 1 cm. in diameter.

Ray florets entire..... *L. maviensis*.

Ray florets emarginate..... *L. maviensis* forma *emarginata*.

Flower heads small, under 1 cm. in diameter.

Leaves glabrous..... *L. Erci*.

Leaves hirsute..... *L. Helena*.

¹In conversation with Rev. J. M. Lydgate I learn that the Eeka locality of Dr. Hillebrand is the point now generally known as Puu Kukui, and so recorded on the official maps. This fact is of considerable importance to the student of Hawaiian botany because the two localities have similar though slightly different floras. Eeka is given by Hillebrand as the type locality for some of his species, while in reality Puu Kukui is the place where the plants were collected. It is practically impossible to reach Eke from Puu Kukui; and I very much doubt if Hillebrand ever visited the locality. There may be some question as to whether Eke and Feka are the same place.

Lagenophora maviensis Mann.

H. Mann in Proc. Am. Acad. Arts and Sci., Vol. II, p. 172 (1867).

L. maviensis Hbd. in Flora H. I., p. 195 (1888).

Mann's type represents the robust form as compared with other Hawaiian forms and species.

Type locality, top of the mountain of West Maui. Mann & Brigham, No. 440.

Minutely viscous-pubescent herb with a thick creeping rhizome. Leaves radical or crowded on a short stem, coriaceous, sessile, cuneate to spatulate-oblong, acute or rounded at the apex which is coarsely serrate, entire toward the base, covered with resinous glands and a short, evanescent, pubescence above, pale and glabrous below, 4.8 cm. long, 6 mm. wide ("About 2 inches long, 4-6 lines wide," Mann). Scape 18-23 cm. long, distantly foliose with 3-9 linear-spatulate bracts. Heads globose, large for the genus, 1.5 cm. in diameter. Involucral bracts linear-oblong, acute, membranous, pubescent, equaling the disk. Ray florets entire, pointed, in 3-4 series, slightly longer than the yellow disk florets, reddish purple. Achenes narrow-lanceolate, the beak glandular-hispid.

Specimens in B. P. B. M. Herbarium. Type, Mann & Brigham, No. 440. Top of mountain of W. Maui, 6,500 feet; Dr. Hillebrand and J. M. Lydgate, Eeka (Puu Kukui, W. Maui); C. N. Forbes, No. 55, M., Puu Kukui, W. Maui, May 1910; Forbes, No. 378, M., Eke, W. Maui, October 1917; G. C. Munro, No. 622, open bog, Puu Kukui, W. Maui, September 1916.



1. *LAGENOPHORA MAVIENSIS* MANN.

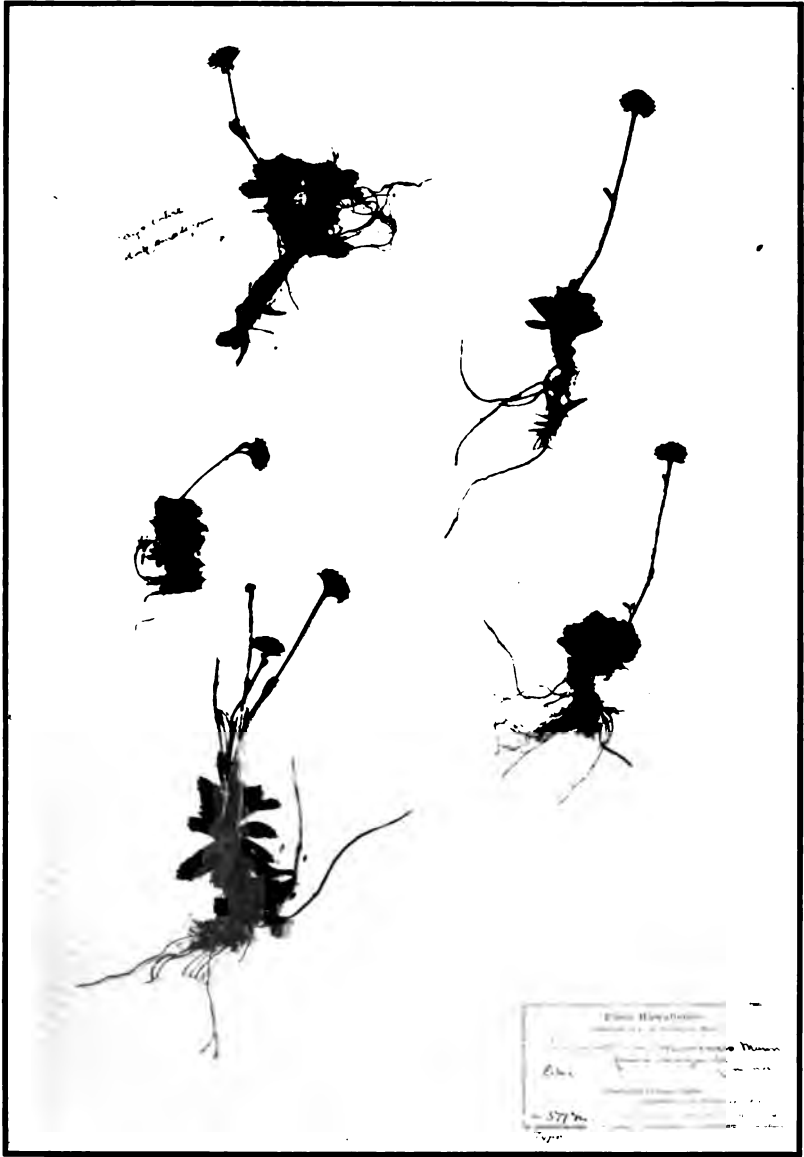
(Reduced $2\frac{3}{4}$ times.)

Lagenophora maviensis forma **emarginata** f. nov.

This form is generally a smaller plant with shorter scapes of 3-8 cm. in length. The flowers are often darker colored, and the rays are emarginate, usually conspicuously so. The common occurrence of small plants with entire rays, and the rare occurrence of large plants with emarginate rays prevent the separation of varieties. Forma *emarginata* looks very distinct when growing.

Specimens in B. P. B. M. Herbarium. Type, C. N. Forbes, No. 379, M. Eke, W. Maui (one specimen on this sheet is the small form with entire rays); Forbes, No. 378, M. Eke, W. Maui. (With typical specimens.)

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2. *LAGENOPHORA MAVIENSIS* FORMA *EMARGINATA* FORBES.
(Reduced $2\frac{3}{4}$ times.)

Lagenophora Ericsi sp. nov.

Herba glabra vel minutim viscoso-pubescentis; foliis cuneatis vel spatulato-oblancoelatis, coriaceis, sessilibus, glabris, ad apicem serratis, 1.1-1.6 cm. longis, 3-4 mm. latis; scapo 6-7.4 cm. longo; capitulo parvo, 8 mm. crasso; involucri-bracteis oblongo-cuneatis, acutis, viscoso-pubescentibus; ligulis disco equalis; acheniis obovaido-oblongis.

Type locality, Alakai swamp, Waimea drainage basin, west side, Kauai. C. N. Forbes, No. 882, K. July 3 to August 18, 1917. Collected while in the company of Hon. Eric A. Knudsen and others.

Glabrous or slightly viscous herb with slender creeping rhizome. Leaves very small, radical or crowded on a short stem, coriaceous, sessile, cuneate to spatulate-oblancoelate, rounded at the coarsely serrate apex with one or two minute teeth below, glabrous, pale below, 1.1-1.6 cm. long, 3-4 mm. wide. Scape 6-7.4 cm. long, distantly foliose with 1-2 minute leaf-like bracts. Heads small, 8 mm. in diameter. Involucral bracts oblong-cuneate, acute, membranous, glandular-pubescent, equaling the disk. Ray florets entire, pointed, as long as the disk florets, purplish. Achenes obovoid-oblong.

This species differs from other Hawaiian species in its small, glabrous leaves, and in the small flower heads. It remains to be seen whether robust forms of this species do not occur in the Alakai swamp country.



3. LAGENOPHORA ERICI FORBES.
 (Reduced 2 $\frac{1}{4}$ times.)

Lagenophora Helena Forbes & Lydgate, sp. nov.

Herba hirsuta; foliis obovatis vel spathulatis, coriaceis, hirsutis, ad apicem minutim serratis, 1.6-1.7 cm. longis, 6-7 mm. latis; scapo 7 cm. longo, hirto; capitulo 9 mm. crasso; involucro-bracteis oblongis, acutis, hirsutis; ligulis disco equalis. Achenia ignota.

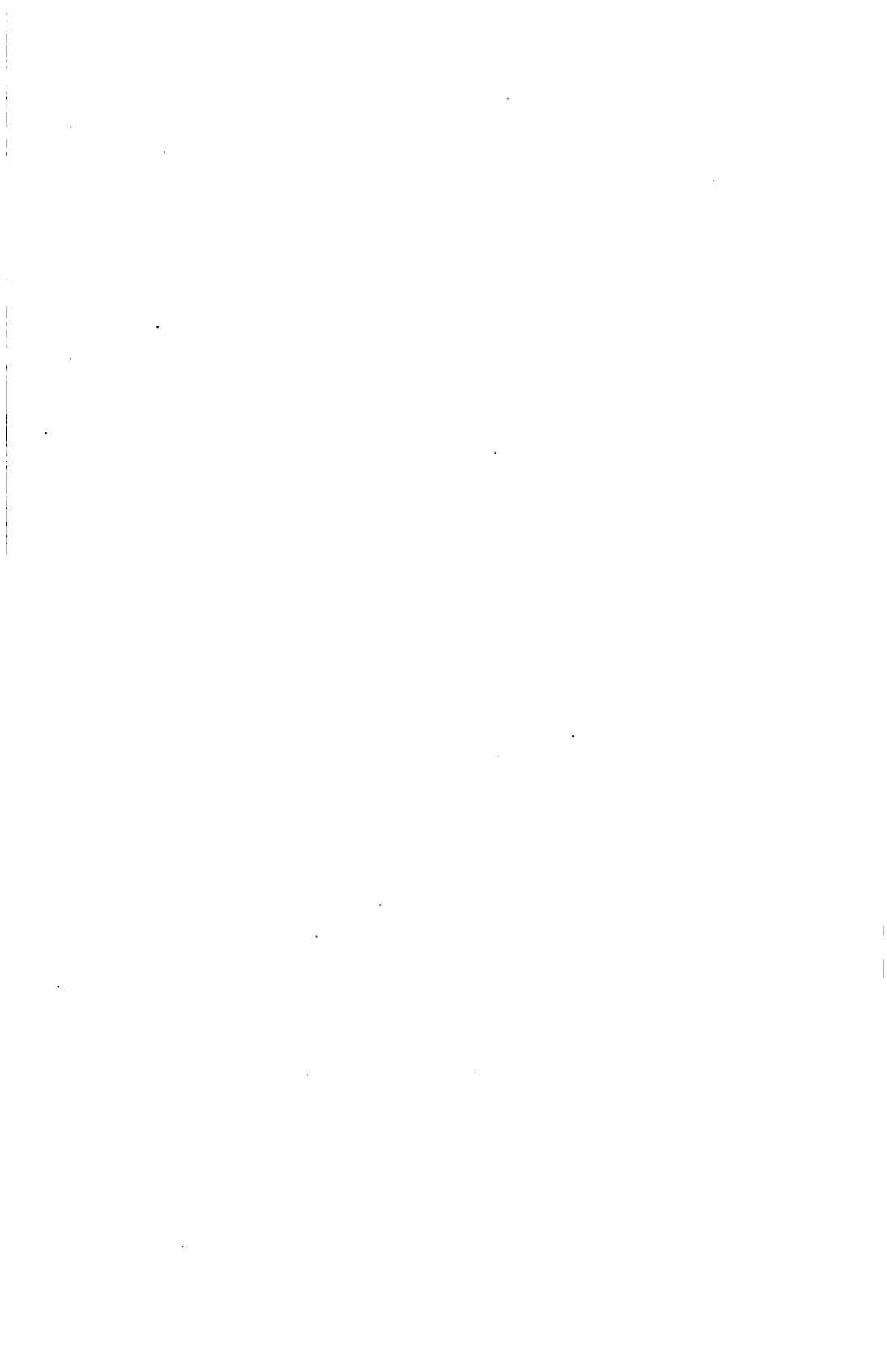
Type locality, swamp near Kaholuamano, Kauai. J. M. Lydgate (1915?).

Small, hirsute herb with slender, creeping rhizome. Leaves very small, radical, coriaceous, obovate to spatulate, contracting at the base into a very short-margined petiole, rounded and finely serrate at the apex, hirsute on both faces, 1.6-1.7 cm. long, 6-7 mm. wide. Scape 7 cm. long, hirsute, foliose near the head with linear-spatulate bracts. Heads globose, 9 mm. in diameter. Involucral bracts oblong, acute, equaling the disk. Achenes not seen.

This species is evidently very rare as only a single specimen was collected, but is, however, so distinct as to warrant description. The species can be recognized at once by the hirsute pubescence, and shape of the leaves. It is hoped to obtain further material in the future for a more minute examination of ray flowers and achenes.



4. LAGENOPHORA HELENA FORBES & LYDGATE.
(Natural size.)



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