

BOTANY.—*A remarkable new species of Ichthyothere.*¹ S. F. BLAKE,
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The genus *Ichthyothere* of the *Asteraceae* is of some economic importance among the native tribes of South America, since the bruised leaves and stems, placed in water, possess the property of stupefying fish and rendering them easy to capture. This property is shared with the closely allied genus *Clibadium* and with many other genera of various families, among which the *Fabaceae* and *Sapindaceae* are conspicuous.

Ichthyothere itself, as at present constituted, contains about a dozen species, all South American. All are low herbs or suffrutescent, with the few small whitish discoid heads in close clusters at the tips of the stems. In most species the heads are sessile, but in a few they are distinctly pedicellate.

While engaged in the preparation of a key to the species, I found in the National Herbarium a specimen from Colombia, doubtfully referred to this genus, and differing from all the species hitherto described in its loosely racemose-panicled heads and climbing habit. Through the courtesy of Dr. F. W. Pennell, the collector, I have had for study the more complete specimen of the same collection in the New York Botanical Garden. Detailed comparison with specimens of *Ichthyothere terminalis* (Spreng.) Blake,² the type of the genus, shows that its differences in habit and inflorescence are not associated with any important difference in technical characters, and, although so distinct in appearance, the plant is best considered a species of *Ichthyothere*. It may be recognized by figure 1 and by the following description.

***Ichthyothere scandens* Blake, sp. nov.**

Shrubby vine; stems slender, branching, obscurely sordid-pilose with appressed hairs, glabrescent; leaves opposite; petioles slender, sparsely sordid-pubescent, 3 to 10 mm. long; blades ovate or lance ovate, 7 to 11 cm. long, 2 to 4.5 cm. wide, falcate-acuminate, at base acute or acuminate, finely serrulate, membranaceous, green on both sides, sparsely sordid-pubescent on the veins, glabrescent, tripli- or quintuplinerved; panicles axillary and terminal, very loose, dichotomous, obscurely puberulous, 16 cm. long or less; bracts minute, about 1.5 mm. long; heads loosely racemose along the branches, on pedicels about 4 mm. long, compressed, 4.5 mm. high, 5.5 mm. wide in fruit; outer phyllaries 5, subulate-triangular, coriaceous-herbaceous,

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²*Rolandra terminalis* Spreng. Syst. Pl. 3: 673. 1826, *fide* BAKER in Mart. Fl. Bras. 6³: 154. 1884. *Ichthyothere cunabi* Mart. in Buchn. Rep. Pharm. 35: 195. 1830. For full synonymy see BAKER, *loc. cit.*

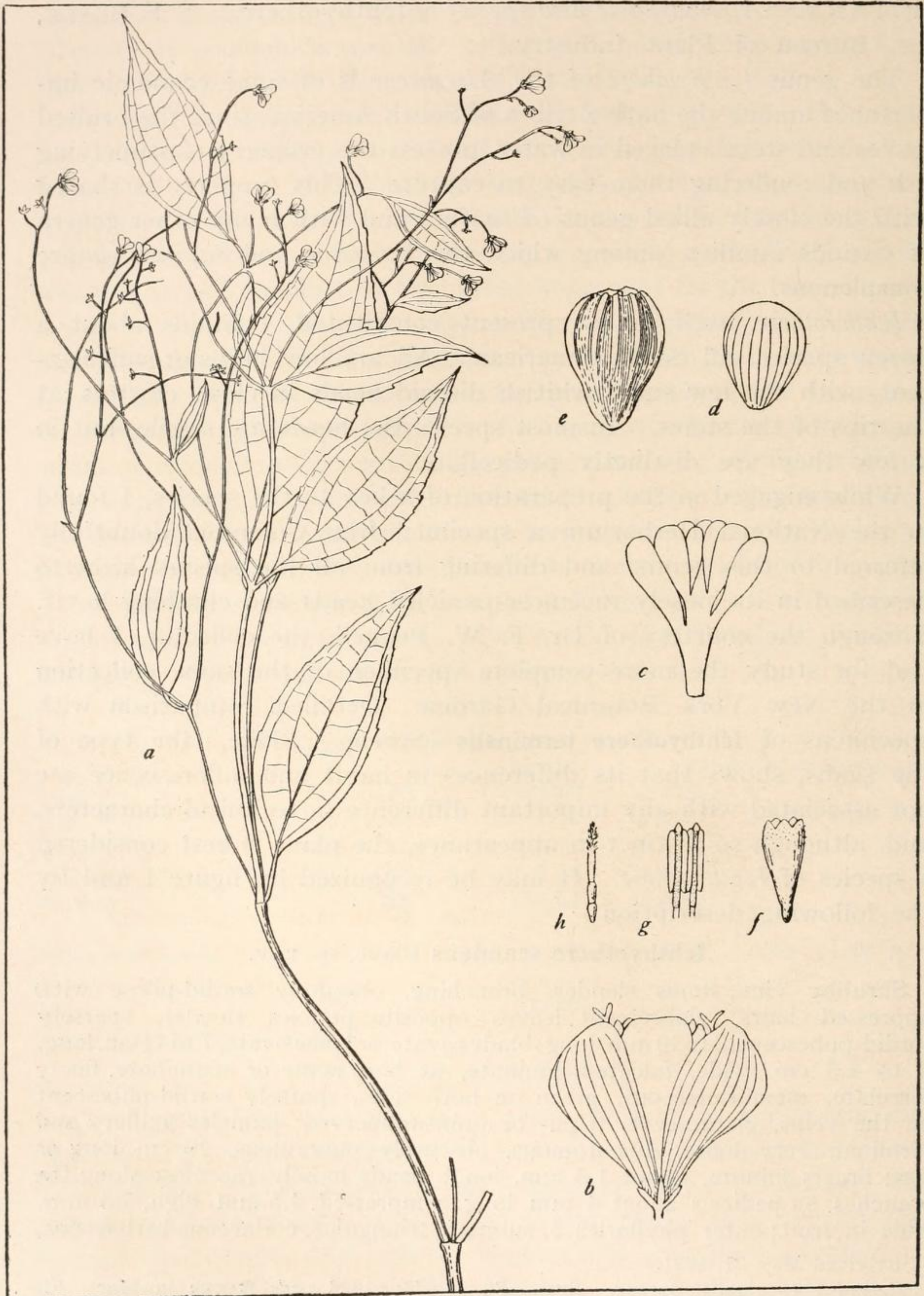


Fig. 1. *Ichthyothere scandens* Blake. *a*, branch, $\times 1/2$; *b*, head, $\times 5$; *c*, receptacle and pales, $\times 5$; *d*, phyllary subtending female flower, $\times 5$; *e*, achene, $\times 5$; *f*, disk flower, $\times 5$; *g*, stamens, $\times 5$; *h*, disk flower with corolla and stamens removed, showing ovary, gland surrounding base of style, and style, $\times 5$.

ciliate, 1 mm. long; inner phyllaries (subtending the female flowers) 2, obovoid, subherbaceous with thin margin, obtuse, glabrous, many-nerved, 5.5 mm. long; receptacle stipitate, bearing nine hermaphrodite sterile flowers; female flowers 2, their corollas tubular, annulate-pilose at apex, very short; corolla of the hermaphrodite flowers tubular-funnelform, greenish-white, 1.8 mm. long; achenes obovoid-turbinate, thick but somewhat obcompressed, truncate, about 8-ribbed, glabrous, 4.2 mm. long; pales of the disk suborbicular-cuneate to (inner) cuneate, glabrous, truncate or rounded, many-nerved with thinner apex, 2 to 3 mm. long.

Type in the U. S. National Herbarium, no. 1042822, collected in forest at Libano, Department of Tolima, Colombia, altitude 1100 to 1300 meters, December 26-29, 1917, by F. W. Pennell (no. 3430). Duplicate in the herbarium of the New York Botanical Garden.

Although in all its technical characters this species is clearly a member of the genus *Ichthyothere*, it is very distinct from all the previously known species in its scandent habit and its very loose inflorescence.

RADIOTELEGRAPHY.—*A chronographic recorder of radio time signals.*¹ E. A. ECKHARDT and J. C. KARCHER, Bureau of Standards. (Communicated by S. W. Stratton).

The problem of recording radio signals is one of amplifying the feeble energy in the radio signal to such a degree that in the amplified amount it is sufficient to operate a recording device. Whether the recording be done photographically or by means of some form of stylus, the electrical energy of the radio signal at some stage of the process gives rise to a mechanical motion. The aim of the experimenter is to make the chain of events between the receiving antenna and the mechanically moving element, as well as the apparatus embodying it, as simple and reliable as possible. If it is desired to use the recording apparatus in field service these considerations are especially important. Ruggedness then becomes an additional imperative requirement. The recording apparatus described in this paper was intended primarily for field use, since with it the U. S. Coast and Geodetic Survey wishes to record Annapolis time signals at any field station which it may desire to occupy within the borders of the United States.

So far as we know, success in recording radio signals at long range has heretofore been attained only by the use of amplifiers of many stages. Despite the great progress which has been made in the design and construction of such devices, a field party, which needs to give considerable attention to the weight of its equipment and which in general is not accompanied by a qualified radio engineer, will not

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