

A. MODOCENSE. Allied to the last, the somewhat larger leaves apparently as constantly 5-lobed and with lobes radiant rather than pointing forward, the surface not wholly glabrous, some soft hairs appearing along the veins in some: flowers rather small, sepals, petals and even the anthers green, or greenish-white; sepals mostly (all the outer ones) merely oval, little exceeding the whitish petals, both sepals and petals sparingly hairy; fruit unknown.

Represented by only some flowering branches, with young foliage, collected near the Warm Springs, Modoc Co., California, 4 June, 1892, by M. S. Baker and Frank Nutting. While the leaves here are almost those of *A. Macounii* the flowers are very notably different; for in both that and *A. circinatum* the sepals are narrow, elongated to twice or thrice the length of the petals, and are of a dark red-purple. In *A. Modocense* they are not only green, but very short for those of any maple at all.

A NEW STUDY OF MICROSERIS.

Although the type of this genus is Chilean, the species are most numerous in California. My first critical study of them was made in San Francisco twenty years ago. I proposed then the two new species, *M. attenuata*, and *acuminata*, both of which have since obtained universal recognition.

The researches of three more seasons carried on in that field led to the expression of views that were published in 1886,¹ according to which, out of the heterogenous "*Microseris*" of Gray's *Synoptical Flora*, *Calais* of De Candolle, and *Scorzonella* of Nuttall were restored, and two new genera, *Ptilocalais* and *Nothocalais* were proposed; while for the genuine *Microseris*, the new discovery was made that its species fell into two natural groups, according as the paleæ of the pappus are triangular and plane, or rounded and cymbiform. In this paper I added but

¹ Bull. Calif. Acad. ii, 41-55.

not unite this and the preceding as forms of one species on account of the marked differences in the achenes, though as to pappus they are quite alike. But the two are different habitally; and the geographical reason for holding them apart is cogent. The Santa Lucia Mountains, and the foothills of the Sierra Nevada opposite are two very distinct climatic regions. Mr. Parish's n. 1902, as in my herbarium, seems to represent *M. proxima* south of the Tehachapi Divide. It is from Elizabeth Lake, Los Angeles Co. Its pappus is rather more elongated than in the type specimens, but it does not otherwise differ.

M. FURFURACEA. Low, the many decumbent-scapes only 3 or 4 inches high and almost equalled by the loosely pinnatisect leaves, the whole plant, even to the involucre furfuraceous and also somewhat villous-hairy: involucre round-ovate achenes less than 2 lines long, nearly columnar, the outer somewhat shorter, white-villous in lines between the ribs, the others brownish, their ribs minutely and closely scabrous-serrulate; pappus of very short deltoid-ovate white glabrous paleæ broader than long, the slender fragile awn more than twice as long, the whole as long as the achene.

Only a single but excellent specimen, collected by the writer near Midway, Alameda Co., Calif., 3 May, 1895. The species may perhaps better stand in another group, near *M. aphantocarpa*; but the paleæ if not cymbiform are evidently concave.

M. OLIGANTHA. Plants small, the leaves mostly narrowly oblanceolate, obtuse and entire or sparingly toothed, some broader and more or less pinnatifid: scapes usually solitary, 3 to 6 inches high, decumbent: involucre cylindraceous, very few-flowered: achenes all very light-colored, the outer lightly villous, the inner with ribs very minutely and obscurely scabrous-serrulate, all about 2 lines long and linear-fusiform; pappus of short ovate glabrous white-paleæ and awn about twice as long.

Near Ashland, Oregon, April, 1889, Thomas Howell, distributed for *M. Douglasii*. I have little doubt that a similar plant

from Vancouver Island, distributed by Mr. Macoun, may be the same, but I have seen no specimens in fruit.

The species next following may be regarded as segregates of *M. attenuata*, though the plants were not known at the time that species was published, and consequently have not affected the diagnosis of it; but several of them since have been referred to it by me as manuscript labels show. They are all at agreement with it as to the attenuation of the achene, which is only partly filled by the seed, the upper portion of the pericarp being vacant.

M. CALLICARPHA. Leaves pinnatifid but not very deeply so, the divisions from triangular to subulate-lanceolate or subfalcate: involucre oval: achenes scarcely 3 lines long, dark chestnut-brown, the ribs sharply serrulate-scabrous, a few of the outer villous; pappus about 4 lines long, the oval and distinctly cymbiform palea dull-brownish, white-flecked with the usual minute appressed scaberulous hair, but not in the least villous, the awn of less than twice the length of the palea.

Known to me only in a specimen preserved in my herbarium, taken out of the Botanic Garden at Berkeley in 1894, and named *M. attenuata*. I can not now recall from what part of California the seeds were derived.

M. PICTA. Leaves narrowly lanceolate, entire, or some with a few coarse teeth or short-lobes: involucre oblong, $\frac{1}{2}$ inch long: achenes 3 lines long, slender-fusiform, rather abruptly narrowed under the pappus and much more than half filled by the seed, white, but with numerous large oblong-linear flecks of black, the ribs very sharply serrulate-scabrous, a few of the outer very villous; pappus $4\frac{1}{2}$ lines long, the palea cymbiform sordid-brown, oblong-lanceolate, the awn one and a half times as long.

Salinas Valley, Monterey Co., Calif., May, 1889, E. K. Abbott; the type in my own herbarium.

M. LEIOSPERMA. Large; the many scapes stout, decumbent: leaves rather coarsely pinnate-parted: involucre very many-