

GLYPTOPLEURA Eaton. To the characters of this curious little genus, as made known by Eaton and by Bentham, may here be added

4. M. LACINIATA. *Hymenonema ? laciniatum* Hook. *Scorzonella laciniata* Nutt. *Calais (Scorzonella) laciniata* Gray, l. c., cum

Var. PROCERA. *Calais (Scorzonella) glauca, procera* Gray, Proc. Am. Acad. 7, p. 364. *Hymenonema ? glaucum* Hook., forma minor.

5. M. LEPTOSEPALA. *Scorzonella leptosepala* Nutt. *Calais Bolanderi* Gray Proc. Am. Acad. 7, p. 365. *Calais laciniata* Gray, l. c. 8, p. 392; pl. coll. Hall, 313. — The narrower and gradually tapering scales of the involucre, as well as the smaller and mostly fewer-flowered heads, appear well to distinguish this species, which was indicated by Nuttall.

← ← Involucris squamæ omnes obtusiusculæ: pappus e paleis 5 bifidis arista e sinu exserente dimidio triplove brevioribus constans: ligulæ breviusculæ. Acaulis, scapis simplicissimis nudis.

6. M. PARRYI. *Calais Parryi* Gray in Bot. Whipp. & Bot. Mex. Bound. p. 104. — Akenes unknown, but probably beakless. The species was referred to *Calocalais*, on account of the pappus.

§ 3. EUMICROSERIS. Pappus e paleis aristatis 10 vel pluribus: cæt. *Eucalais*. Species 2 australes.

7. M. PYGMÆA DON. Annuæ, radice exili. — Chili.

8. M. FORSTERI Hook. f. Biennis, radicibus fusiformibus. — New Zealand and Australia.

§ 4. EUCALAIS. Pappus haud plumosus, sordidus, e paleis aristatis 5, raro paucioribus: achenia sæpissime breviuscula, ab apice lato truncato vel infra medium deorsum angustata: involucre duplex, exterius breve calyculatum. Annuæ, acaules, radice exili, scapis simplicissimis nudis. — *Calais* § *Eucalais* DC.

* *Aphantocarphæ*, nempe aristis pappi fragilibus nudis ima basi tantum dilatatis.

9. M. APHANTOCARPHA. *Calais aphantocarpha* Gray in Proc. Am. Acad. 6, p. 552.

Var. TENELLA. Forma pusilla, pappo 2-5-mero deciduo nunc evanido. *Calais (Aphanocalais) tenella* Gray in Bot. Whipp. p. 57, 58, t. 17. — Evidently this is a depauperate state of the species which I later described as *Calais aphantocarpha*. It is so large and tall as to render the older specific name inappropriate, so that in the transference I prefer the later name for the species. The slight contraction of the very summit of the achenium in the *C. tenella* does not seem to be wholly constant, nor of specific value.

* * *Eucarpheæ*, nempe paleis pappi sat magnis,

← Ovato-lanceolatis ovatisve in aristam pl. m. acuminatis.

10. M. BIGELOVII. Acheniis brevibus (lin. 2 longis) subturbinate sub apice non constrictis; pappi paleis ovato-lanceolatis extus tantum scaberulis in aristam gracilem sensim productis. — *Calais Bigelovii* Gray, in Bot. Whipp. p. 57, t. 17. *C. Douglasii* Gray, Bot. Whipp. l. c. (forma paleis pappi fere lanceolatis) &

beak of the achenium is funnel-like or tubular! Also, that Dr. Palmer's plant from southern Utah appears to be of a second nearly related species. The diagnoses of the two may be expressed as follows:—

G. MARGINATA Eaton. Foliis insigniter scarioso-limbatis, summis bracteisque (involucrum circiter 12-phyllum 15-18-florum æquantibus) lacinulis fere filiformibus pectinato-marginatis; ligulis (an semper?) parvis; acheniis cinerascentibus, rostro infundibulari. — Nevada Desert, on the borders of California.

G. SETULOSA. Foliis margine parum callosis, dentibus superiorum calloso-setiferis; bracteis calyculatis involucre angusto 8-12-floro 7-8-phylo dimidio brevioribus; acheniis glabris, rostro usque ad basim

producta. — *Calais Lindleyi* DC. l. c. *Uropappus heterocarpus* Nutt. l. c. ex char. This occurs, mixed with the succeeding, in various collections, with which it has naturally been confounded, and it has sometimes been named *Calais Douglasii*.

15. **M. LINEARIFOLIA**. Foliis junioribus nunc pubescentibus seu villosulociliatis; acheniis plerisque rostrato-attenuatis; pappi albi paleis achenio sæpius brevioribus lineari-lanceolatis apice mox acute bifidis, costa tenui ex sinu in aristam capillarem ipsa plus dimidio brevioribus producta. — *Calais linearifolia* DC. l. c. excl. syn. *Uropappus linearifolius* & *grandiflorus* Nutt. l. c.

16. **M. MACROCHÆTA**. Pappi paleis oblongis arista sua tenuissima ex sinu exserente achenioque rostrato-attenuato 2-3-plo brevioribus. — *Calais macrochæta* Gray Pl. Fendl. & in Bot. Whipp. l. c.

* * Pappi paleæ 20-24, angustissimæ, in aristam scabridam sensim attenuatæ!

17. **M. TROXIMOIDES**. *Troximo cuspidato* similis, fere acaulis; radice perenni crasso nigricante; foliis crassiusculis linearibus sursum attenuatis integerrimis vel margine undulato; scapo spithamæo ad pedalem foliis 1-2 parvulis nunc instructo; involucre cylindraceo vel subturbinato 20-30-floro e squamis lanceolatis sensim acuminatis subæqualibus; pappo albido achenio lineari sursum parum angustato longiore. — Two forms are known: one from hills on the Clear Water River, Oregon (now Idaho Terr.), collected by Mr. Spalding, and mistaken for *Troximon cuspidatum*, also Montana Territory, from an unknown collector. This has a little pubescence about the head, unripe akenes rather strongly 10-striate-ribbed, and hardly tapering upwards. The other is no. 600 in the collection distributed by Kellogg and Harford, probably from the northern part of the coast of California. The single specimen I have seen of this has a wholly naked scape, a narrower and glabrous involucre, a whiter pappus, the achenia more lightly costate, and apparently more tapering upwards. This and *Troximon cuspidatum* indicate a clear transition between the two rather widely separated genera. The akenes of the present anomalous plant are about four lines long, glabrous: the pappus half an inch long, of uniform awnlike paleæ, which are flat and about a quarter of a line long to near the middle, thence gradually tapering into the slightly rigid and scabrous awn. Calyculate scales of the involucre hardly any.

cavo. — Near St. George, on the southern border of Utah, Dr. Edward Palmer.

MALACOTHRIX DC. In the Flora of North America, thirty years ago, and with very incomplete materials, I ventured to reconstruct De Candolle's *Malacothrix*, founded on a single species in flower only, by adding to it three genera which were shortly before characterized by Nuttall; and later, in *Plantæ Fendlerianæ*, I added another species of anomalous aspect. The characters which confirm this view have one by one come to light, except as to Nuttall's *Malacomeris*, of which nothing more is even now known. The genus was said to be "most allied to *Andryala*." The affinity thus suggested is strengthened by the discovery I have just made that the receptacle of *M. commutata* is foveolate and fimbriate-toothed, and also that in other species, with foveolæ not apparent, there are delicate setæ, usually one to each of the areolæ of the receptacle, or to some of them. These are most conspicuous and persistent in *M. Coulteri*, apparently the most anomalous of the species, on account of its scarious involucre. In *M. sonchoides*, *M. obtusa*, &c., and in the original *M. Californica*, they are sometimes manifest (either caducous or persistent), but usually of extreme tenuity, yet sometimes evanescent or wanting.

In *Plantæ Fendlerianæ* I first noticed the stronger and few or solitary outer bristles of the pappus which characterize certain species of the genus, among them the original *Malacothrix* DC. The mention of *M. sonchoides* was in consequence of my having confounded with Nuttall's species of the Upper Platte two other more western species, one of which (*M. Fendleri*) has this character, and the other (*M. obtusa*) seemed to have it. Later, Dr. Torrey, in Stansbury's Report, corrected what he naturally thought an inexact statement, by saying that "in *M. sonchoides* I believe the outer series always consists of five bristles." Next, in *Plantæ Wrightianæ*, part 2, when distinguishing *M. Fendleri*, I too hastily adopted Dr. Torrey's view, without comparing his supposed *M. sonchoides* of Salt Lake, which has five or more strong persistent bristles, with Nuttall's original specimen, which has none. If it had, they would hardly have escaped Nuttall's attention, who described the whole pappus as soft and "quickly deciduous in the mass." In natural consequence, Torrey's species came to be well described in the Botany of King's Exploration as *M. sonchoides*, while the real *M. sonchoides* of that work, as respects the Utah specimens, is described as *M. obtusa*. In rectifying the synonymy, it will be proper to name the species which brought in this confusion *M. Torreyi*, in memory of its first describer.