

e basi bulbosa orientibus, minoribus 0.2–0.8 mm. longis antrorse adpressis); ramis et ramulis annotinis delapsu foliorum denudatis non rariter decorticatis apice ramulos foliatis novellos ad 2 dm. longos proferentibus; foliis lanceolatis 2.5–5 cm. longis 6–15 mm. latis subsessilibus vel ad 1 mm. longe petiolatis, apice attenuatis, basi rotundis ad acutis, margine anguste revolutis, supra viridibus venis et costa impressis evidenter notatis bases pilorum antrorse adpressorum rigidorum abundantium 0.2–0.8 mm. longiorum silicosas tuberculatas vel subconicas persistentis gerentibus, subtus griseis costa et venis salientibus donatis pilos gracilis adpressos 0.8–1.2 mm. longos pallidos e basibus pustulatis orientis juventate abundantis maturitate sparsiores proferentibus; floribus apicem versus ramuli gestis; calyce ad anthesin 1 cm. longo 3–8 mm. longe pedicellato, lobis inaequalibus linearibus ca. 1 mm. latis prominenter costatis bases pustulatas pilorum gracilium 0.4–0.8 mm. longorum ascendentium abundantis gerentibus; corolla lutescenti ca. 3.5 cm. longa extus hispidula intus glabra, tubo parte basali ca. 10 mm. longa 1–1.2 mm. crasso deinde sursum abrupte expanso, parte superiore cylindrico ca. 17 mm. longo ca. 5 mm. crasso; lobis corollae triangularibus 6–8 mm. longis 5–6 mm. latis summum ad apicem rotundis; filamentis 4–7 mm. longis ca. 3 mm. longe sub altitudinem sinus affixis; antheris 2.5–3 mm. longis elongatis oblongis medio-affixis; stylo filiformi exserto; nuculis albis osseis levibus ovoideis ad 3 mm. longis.

GUATEMALA: Above San Juan Ixcoy, Sierra Cuchumatanes, dept. Huehuetenango, 2400 m., high bluff in upper reaches of barranco, subligneous and bushy, 1–3 ft. tall, corolla pale yellow, "te de monte," infusion of leaves used for colds, *Steyermark 50069*; dry upper southfacing slope of Volcan Tajumulco, between Las Canoas and top of ridge, 7 mi. from San Sebastian, dept. San Marcos, erect herb 4–5 ft. tall, fl. with yellow tube and green lobes, lvs. stiff, dull green above, gray beneath, "etama real," fruit used for "los cuentas," *Steyermark 35898* (TYPE, Gray Herb.).

A new species of a genus heretofore unknown from south of Mexico. It is related to *M. Pringlei* Greenm. of southern Mexico (Hidalgo, Guerrero and Oaxaca). Unlike its relative it has strong stems that become somewhat woody and function for at least two seasons. The hairs on the plant have excessively developed siliceous bases. They almost pave the upper leaf-surfaces and make the stems verrucose. The calyx-lobes are prominently ribbed and are rough with numerous hair bases. The corolla averages distinctly smaller than in *M. Pringlei*.

*Dasynotus*, gen. nov. Boraginaceae-Boraginoidearum.

Calyx 5-partitus longe pedicellatus segmentis elongatis in statu fructifero fere duplo accrescentibus donatus. Corolla hypocraterimorpha conspicua glabra; lobi 5 elliptico-oblongi imbricati patentes; tubus cylindricus calyce brevior, intus fere ad basim appendiculas 10 minima tumescentes gerens; fauces inconspicuae angustae abrupte expansae. Fornices corollae fundus faucium orientes magni exserti ligulati supra medium extrorse recurvati apice pendentis conspicue breviterque bilobati, medium versus puberulenti, apicem versus minute papillati, infra medium margine minute ciliolati. Stamina 5 inclusa fere ad apicem tubi corollae affixa; filamenta brevia compressa attentuata; antherae anguste oblongae obtusae paulo infra medium affixae. Ovarii lobi 4 distincti in gynobasi pyramidalis oblique affixi. Stylus filiformi-subulatus apice gynobasis inter apices nucularum gestus a nuculis liber; stigma simplex disciformum minimum. Gynobasis maturi-

tate cartilaginea late pyramidalis magna excavationibus conspicuis ovatis apice attenuatis crasse marginatis ornata. Nuculae 4 conformes late ascendentes ovatae dorsi-ventraliter compressae laeves pro tribu Eritrichiae magnae, facie dorsali pilis albis simplicibus erectis gracilibus abundantibus obsitae margine erecto vel ascendenti angusto humuli inermi cinctae, facie ventrali glabrae cicatrice majusculo convexo prominulo medio vel paulo supra medium donatae in tertiam partem superiorum prominenter carinatae alibi valde convexae. Semina recta supra medium lateraliter affixa, cotyledones planae indivisae, radícula superior. — Herba perennis multicaulis erecta semi-metralis viridis. Folia alterna oblanceolata. Cincinni terminales pauci laxi sparsiflori solum basim versus paucibracteati. Pedicelli elongati maturitate saepe deflexi tandem basi ima disarticulati. — Nomen derivatur a *δασυς* (hispidum) et *νωτον* (dorsum), quia nuculae dorse hispidulosae sunt.

*Dasynotus Daubenmirei*, sp. nov.

Herbae radice perenni valida oriens; caulibus numerosis fistulosis erectis ad 5 dm. altis simplicibus foliosis 2–5 mm. crassis sparse hispidulosis (pilis 0.5–2 mm. longos gerentibus); foliis caulinis infimis reductis, ceteris 1–2 cm. distantibus oblanceolatis evidentiter costatis 9–13 cm. longis 1.5–3 cm. latis supra medium latioribus deinde basim sessilem 2–4 mm. latum versus attenuatis, ubique pilos 0.5–1.5 mm. longos antrorse appressos vel ascendentes non rariter e basi plus minusve pustulato haud conspicuo erumpentes vix abundantes gerentibus, subtus pallidioribus nervos primarios utroque laterae costae 5 gestos haud ramosos graciles inconspicuos proferentibus; inflorescentia apice caulis gesta racemosa laxissima basim versus folios parvos 1–2 ad 6 cm. longos et 1.5 cm. latos proferenti alibi ebracteata, rhachi in statu fructifero ad 10 cm. longa flores 0–3.5 cm. distantes gerenti; pedicellis sub anthesi 1–2.5 (–3) cm. longis erectis mox divaricatis vel decurvatis, maturitate divergentibus vel basi deflexis et tandem ibique disarticulatis; calyce plus minusve strigoso, lobis cuneatis vel cuneato-lanceolatis acutis sub anthesi 6–8 mm. longis 1–1.5 mm. latis erectis, fructiferis ad 14 mm. longis et infra medium ad 3 mm. latis evidentiter costatis ascendentibus; corolla alba ad 22 mm. diametro, tubo 4.5–5 mm. longo 4–4.5 mm. diametro, lobis 6.5–8 mm. latis 8–9 mm. longis apice rotundis; fornicibus ad 4 mm. longis supra medium ad 0.8 mm. latis deinde deorsum basim 1.5–1.7 mm. latum versus latioribus, apice pendenti bilobulata 0.5 mm. profunde emarginatis; filamentis ad 1 mm. longis ca. 1 mm. infra apicem tubi corolla affixis, antheris 1.5–2 mm. longis; stylo 3–5 mm. longo; nuculis saepissime 4 ascendentibus 5–6 mm. longis 4–4.5 mm. latis 2–2.5 mm. crassis in ambitu late ovatis, facie exteriori dense hispidulosis (pilos 0.5–0.9 mm. longos uniloculares gerentibus) maturitate interdum subglabrescentibus margine rugae angustae 0.2–1 mm. altae erectae glabrae circumdatis, facie interiori sublucentibus cicatrice centrali vel supra centrali 1–1.2 mm. longa ad 1 mm. lata donatis; gynobasi fructiferi 2 mm. alta basi ima 3–4 mm. diametro deinde sursum abrupte contracto pyramidali, faciebus pyramidis sub angulo 40° inclinatis excavationes basi 1–1.5 mm. latos supra medium abrupte contractos gerentibus.

IDAHO (Idaho Co.): Moist roadside in draw, vicinity of Walde Mt. L. O., open place in spruce-fir zone, June 24, 1945, *R. F. Daubenmire* 4535; near Walde Mt. L. O., July 14, 1945, *R. F. Daubenmire* 45131; near Walde Mt. L. O., clearing in forest, July 24, 1946, *R. F. Daubenmire* 46289 (TYPE, Gray Herb.).

The discovery of a plant representative of a new genus is always of interest. The recent discovery in the mountains of Idaho of this new monotype is not merely interesting but also a surprise. Among North American Boraginaceae well-marked new species continue to turn up from time to time, but with the sole exception of *Mimophytum* (a Mexican monotype discovered in 1905) all the hitherto recognized American genera have had representatives known to science for at least a century. The prospects have been that the only additional genera recognized would result from the segregation of old concepts or from the possible discovery of a new species set off from some old genus by one or more striking characters that might possibly justify the erection of a new genus. The discovery in Idaho of a new borage which is not merely a very well marked species obviously derived from some recognized genus, but rather a wholly new generic type of very uncertain relationships, is accordingly unexpected. The plant is so distinct, in fact, that, had it been presented to me devoid of geographical data, I would have failed to recognize it as American; I would probably have guessed that it was another one of those very distinct new genera that are from time to time detected in southeastern Asia. As a matter of fact, however, it is no more closely related to the Asiatic Boraginaceae than to the American ones.

In the system of genera the new genus seems best placed near *Hackelia* and *Eritrichium*, preferably just before the former. The plant in gross habit rather suggests *Hackelia* but is very different in inflorescence, nutlets, and faucal appendages. Only in a few details of nutlet structure does it much suggest *Eritrichium*.

The inflorescence of *Dasynotus* is a very loose racemose cyme of slenderly long-pedicellate flowers. In general appearance it is somewhat reminiscent of that of *Borago officinale* L., and so very different from the slender, elongate, secund, racemose flower-clusters of *Hackelia*. The pedicels may become very elongate and are spreading, decurved, or basally abruptly deflexed. At extreme maturity they disarticulate at the very base.

The faucal appendages are certainly unusual and apparently unique in the family. They are about 4 mm. long, ligulate, swollen, and above the middle gracefully and outwardly decurved with the pendent end distinctly cleft. The margin below the middle is ciliolate. The surface of the middle section is pubescent. On the arched outer portion of the appendage the minute pubescence becomes reduced and towards the distal end represented only by very minute papillae. Faucal appendages in some borage genera curve inward and partially close the throat of the corolla. The appendages of *Dasynotus*, however, are not only strongly decurved but they arch outward over the base of the corolla-lobe.

Seated on the cartilaginous pyramidal gynobase the nutlets of *Dasynotus* ascend at a wider angle and protrude more basally than is customary in members of the tribe *Eritrichieae*. In these details the plant simulates members of the *Cynoglosseae*. The nutlets of *Dasynotus*, however, are free from the style, devoid of appendages, and have a central (not apical)

attachment scar, all important details that clearly ally it with the *Eritrichieae*.

The individual nutlets are thickish but distinctly dorsi-ventrally compressed. They are broadly ovate in outline and are 5–6 mm. long and so large for one of the *Eritrichieae*. Ventrally they have a slightly protrudent, convex, ovate, central or somewhat supra-central attachment scar, and above the latter a prominent short ventral keel. The keel, formed of unbroken pericarp and bearing no groove nor thickened tissue, is distinctly elevated above the level of the scar. Except for the keel on its upper third most of the ventrum is convex. It is rather smooth, somewhat lustrous, and light in color. In general plan the ventrum of these nutlets is reminiscent of that in the nutlets of *Plagiobothrys* Sect. *Euplagiobothrys*. I doubt, however, if this resemblance can have any phylogenetic significance.

The dorsal surface of the nutlets of *Dasynotus* is nearly flat or slopes very gently on either side of the medial line. It bears an abundance of slender, white, single-celled hairs that are at first straight and vertical but later may become bent and disarranged. These hairs are neither hooked nor barbed. There may be a very slight swelling on the pericarpial surface where each is attached. When they fall away, as may happen on very old nutlets, the surface of the ventrum may accordingly be very obscurely and minutely tuberculate. Surrounding the hairy ventrum, like a tiny wall about a miniature grainfield, is a narrow glabrous elevated flange that rises vertically all around the margin. This erect flange is a tight projecting fold or wrinkle of pericarpial tissue. It is not differentiated in texture, color, nor surface from tissue adjoining, and has an even height and bears absolutely no appendages, teeth, or any sort of roughenings. It is accordingly very different from the marginal ridge in the nutlets of *Hackelia* and *Lappula*. Among the Boraginaceae nutlets with a dorsum simulating that in *Dasynotus* are to be found only in certain species of *Eritrichium*. In most species of the latter genus the nutlets have a toothed margin, but in some, e. g., *E. elongatum* (Rydb.) Wight of the northern Rocky Mts., the margin is unarmed, even, and seemingly only a protruding wrinkle in the pericarp, much as that found in the nutlets of *Dasynotus*. Also interesting is the fact that some Asiatic species of *Eritrichium* also bear numerous erect straight hairs on the margined dorsum of their nutlets. As a general rule most species of *Eritrichium* have a smooth lustrous pericarp rather similar to that found in *Dasynotus*. The similarities mentioned possibly may be indicative of some relationship between the two genera, though certainly it cannot be a very close one. *Dasynotus* and *Eritrichium* differ in habit of growth, inflorescence, and flower structure, as well as in form, scar, and ventral keeling of nutlets.

The region in Idaho where *Dasynotus* grows is one that exploration during the past decade has shown to be not only rich in local endemics but also notable for outlying inland congregations of species formerly thought to be confined to the coastal mountains of Oregon and Washington. Dr.

Daubenmire's discovery there of *Mertensia bella* Piper, formerly thought to be confined to the Siskiyou region of adjacent Oregon and California, is an example of this.

The particular place where the new genus was discovered lies 65–70 miles ESE from Lewiston in the watershed of the Lochsa River and about 5–10 miles northerly from the town of Lowell at the junction of the Lochsa and Selway rivers. It is in Idaho County near the northern boundary of Nez Perce National Forest and in the vicinity of Walde Mt. Lookout. On July 24, 1946, Professor Daubenmire made the following notes to accompany his no. 48289, the type collection: "A few plants observed in near-climax arborvitae forest 7.6 mi. east of Waldo Lookout on road towards Frenchman Butte. Plants growing in dense shade send up only a few stems from the crown. Those growing along trails and on cleared areas are much more robust. Eighty-nine stems were counted on one individual, these making a cluster about 25 cm. in diameter at the soil surface. The color of the corollas is pure white." Judging from the collections available the plant appears to flower in June and fruit in July.

*Hackelia longituba*, sp. nov.

Herba perennis 5–10 dm. alta pilis gracillimis mollibus brevibus adpressis incano-pubescentibus; foliis inferioribus oblanceolatis ad 15 cm. longis 10–18 mm. latis, infra medium in petiolum 2–3 mm. latum gradatim attenuatis, apice acutis, facie superiori medio costatis sed enervatis, facie inferiori pallidioribus obscure nervatis; foliis caulinis superioribus lanceolatis sessilibus numerosis saepissime 2–3 cm. distantibus ascendentibus majoribus supra basim 8–12 mm. latis, basi rotundis vel subcordatis, apice acutis; inflorescentia sub anthesi densiflora subcylindrica 3–4 cm. crassa 3–9 cm. longa, fructiferi laxa ramulis 6–15 cm. longis ascendentibus laxe 3–10-floris gesta; pedicellis ad anthesin 3–5 mm. longis, fructiferis ad 12 mm. longis; lobis calycis pilis adpressis mollibus incano-pubescentibus, sub anthesi 2–3 mm. longis 0.5–1.2 mm. latis oblongis vel cuneato-oblongis erectis, fructiferis reflexis triangularibus ad 2 mm. latis; corolla infundibuliformi caerulea, limbo 10–15 mm. diametro, tubo cylindrico conspicuo 2–3 mm. crasso 5–7 mm. longo quam lobis calycis duplo longiori, lobis ascendentibus late obovatis 5–7 mm. latis, appendiculis faucium erectis ad 2 mm. altis apice revolutis et conspicue transverseque dialatis pubescentibus subprotrudentibus; filamentis medio tubi affixis 0.2–0.5 mm. longis; nuculis 4 ovatis (sine aculeis ad 5 mm. longis) margine dorsoque aculeos 2–2.5 mm. longos apice glochidiatos saepissime distinctos armatis, cicatrice ovata.

CALIFORNIA: Leland Meadow, Tuolumne Co., 1940, *Quick* 5; Fahey Meadow, Tuolumne Co., 1935, *Quick* 1449; 3 mi. NE of Grohl, Tuolumne Co., 1935, *Roseberry* 262; Big Tree Grove, Calaveras Co., 1884, *Ball*; Big Tree Grove, *Mann*; near Big Trees, 1940, *Eastwood & Howell* 8593 (TYPE, Gray Herb.); Camp Echo, El Dorado Co., 1915, *Heller* 12185; Fallen Leaf Lake, Tahoe Region, 1906, *Eastwood* 1047; Lake Valley, Tahoe Region, 1911, *Abrams* 4766; Sunnyside, Tahoe Region, 1909, *Eastwood* 34; Cisco, Placer Co., *Rixford*.

A well-marked species which has passed as "*H. velutina* (Piper) Johnston." The type of that latter species, however, came from General Grant Park in Fresno County, and represents the plant with short-tubed subrotate corollas which ranges along the Sierra Nevada of California from