STUDIES IN THE LIABEAE (ASTERACEAE). XI.

NEW SPECIES IN THE KEW HERBARIUM

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Materials of Liabeae borrowed from the Royal Botanic Gardens at Kew include many specimens of interest pulled out by R.M.King during a visit. The material contains specimens of one Munnozia and two Liabums described here as new. In addition to the new species, a specimen from Peru: Junin: Huacapistana, Sandeman 4439, represents an unusual form of Ferreyranthus excelsus (Poepp.& Endl.) R.& B. having acuminate leaves and strongly papillose anther filaments. The latter is noted for the benefit of others who might be interested in the Peruvian Liabeae.

Liabum sandemanii H.Robinson, sp. nov.

Plantae herbaceae vel suffrutescentes ca. 0.5 m altae inferne ramosae. Caules leniter hexagonales dense albo-tomentosi non pilosi in nodis non disciferi. Folia opposita, petiolis 3-15 mm longis; laminae ellipticae 4.0-10.5 cm longae et 1.3-3.8 cm latae base anguste cuneatae margine aliquantum dense serrulatae apice breviter argute acuminatae supra glabrae nervis et nervulis prominulis subtus omnino dense canescentiter tomentosae distincte supra basem valde trinervatae, nervis secundariis 3/4 laminarum attingentibus valde ascendentibus ad margine parallelis. Inflorescentiae terminales longe scaposae superne subquadratim et ternate ramosae, ramis ultimis 10-25 mm longis dense tomentosis. Capitula ca. 8 mm alta et 11-12 mm lata. Squamae involucri 80-95 plerumque purpureae ca. 4-5-seriatae lanceolatae vel lineares 2-5 mm longae plerumque 0.7 mm latae apice attenuatae perangustae in sicco contortae extus puberulae et persistentiter arachnoideo-tomentosae; fimbriae receptaculorum ca. 2 mm longae. Flores radii 42-45; corollae flavae; tubis ca. 3 mm longis superne puberulis, pilis plerumque glandulosis, limbis linearibus ca. 7 mm longis et 1 mm latis plerumque glabris base pauce pilosis, pilis plerumque glandulosis. Flores disci ca. 35?; corollae flavae. tubis ca. 2.7 mm longis superne breviter glanduliferis et piliferis, faucis ca. 1 mm longis distincte campanulatis base hirsutis superne glabris,

lobis 1.0-1.2 mm longis et 0.4 mm latis plerumque glabris apice 0-2-spiculiferis; filamenta antherarum in parte superiore 0.35 mm longa; thecae ca. 1.5 mm longae; appendices antherarum oblongo-ovatae ca. 0.35 mm longae et 0.18 mm latae. Achaenia immatura ca. 1 mm longa sparse setifera et dense glandulifera; setae pappi interiores 27-30 ca. 5 mm longae apice vix incrassatae, exteriores subnullae. Grana pollinis 33-35μ diam.

TYPE: PERU: Junin: Huacapistana, alt. 5600 ft., herb with composite yellow flowers & opposite acuminate leaves with grey reverse. Grows in colonies in dense shade in marshy ground. About 2-2½ ft. high. Oct. 1943. Christopher Sandeman 4420 (Holotype,K).

The sparing habit and narrow leaves of the plant with secondary veins paralleling the leaf margin suggest the common Liabum acuminatum Rusby or L. amplexicaule Poepp.& Endl. The differences, however, are so numerous as to preclude close relationship. The inflorescence of the new species is decidedly scapose and the heads are less densely clustered, the involucral bracts are narrower with more attenuate contorted tips, with more persistent tomentum and with a purplish color, the corollas have more campanulate throats and slightly but distinctly spiculiferous lobe-tips. A particularly unique character for Liabum is the glanduliferous achene. The glands are weakly differentiated but are nevertheless numerous. This last character is absent from other Liabums but is found in the closely related genus Oligactis. The leaf venation of the new species and the cymose branching of the inflorescence indicate there is no close relation between L. sandemanii and Oligactis and the glands apparently represent a parallel occurence.

Liabum steinbachii H.Robinson, sp. nov.

Plantae herbaceae vel suffrutescentes ca. 4 dm altae base ramosae. Caules distincte hexagonales dense albo-tomentosi non pilosi in nodis disciferi, discis reniformibus ca. 5 mm longis. Folia opposita, petiolis 2.0-2.5 cm longis; laminae ovatae 6-8 cm longae et 3.5-5.5 cm latae base late acutae sensim acuminatae in partibus superioribus petiolorum decurrentes margine minute serrulatae apice breviter abrupte acuminatae supra glabrae ad marginem nervorum distincte anguste canaliculatae subtus omnino albo-tomentosae fere ad basem trinervatae, nervis secundariis 2/3 laminarum attingentibus inferne ab margine remotis. Inflorescentiae terminales, ramis secundariis subquadratim dispositis, ramis ultimis 1-3 cm longis

dense albo-tomentosis. Capitula 10-11 mm alta et 14-17 mm lata. Squamae involucri extus glabrae vel glabrescentes ca. 100 ca. 5-6-seriatae 1-7 mm longae ovatae vel lineares plerumque virides et flavescentes argute acutae apice breviter purpureae; fimbriae receptaculorum ca. 1 mm longae. Flores radii ca. 50?; corollae flavae; tubis 5 mm longis superne puberulis, limbis linearibus ca. 12 mm longis et 1.5 mm latis base puberulis. Flores disci ca. 35?; corollae flavae, tubis ca. 4 mm longis superne sparse puberulis, faucis 1.5 mm longis base puberulis et subabrupte constrictis superne glabris, lobis 2 mm longis et ca. 0.5 mm latis apice pauce minute spiculiferis; filamenta antherarum in parte superiore 0.25 mm longa; thecae ca. 2.5 mm longae; appendices antherarum oblongo-ovatae 0.35 mm longae et 0.15 mm latae. Achaenia ca. 1.8 mm longis dense breviter setifera; setae pappi interiores 35-40 plerumque 5 mm longae apice vix incrassatae, exteriores ca. 30 tenues 0.5-1.0 mm longae. Grana pollinis 32-35 μ diam.

TYPE: BOLIVIA: Santa Cruz: Cerro Tres Cruces, elev. 1400 m, 8 Oct. 1928. Jose Steinbach 8152 (Holotype, K).

The genus Liabum has previously been known in Bolivia by only two species now placed in the genus, L. solidagineum (H.B.K.) Less. and L. acuminatum Rusby, both primarily Peruvian in distribution. The third species described here represents a distinctive apparently endemic entity from the central part of the country. The involucres of L. steinbachii are mostly greenish and glabrous becoming yellowish in maturity, characters reminiscent of the L. floribundum Less. — L. eggersii Hieron group of Colombia, Ecuador and northern Peru. Species of the latter group differ by being larger usually subscandent plants with smaller heads in denser clusters. The leaves of the more northern group are also generally larger with more truncate bases.

Munnozia karstenii H.Robinson sp. nov.

Plantae herbaceae 0.5-1.0 m altae? Caules hexagonales late fistulosi extus dense fulvo-pilosi et dense evanescentiter arachnoideo-tomentosi in nodis non disciferi. Folia opposita, petiolis 3-9 cm longis distincte anguste alatis, alis mucronato-denticulatis; laminae deltoideo-ovatae plerumque 8-19 cm longae et 6.5-14.0 cm latae base truncatae in angulis retrorsis vix latissimae margine multo dentatae et dense mucronato-denticulatae apice breviter argute acuminatae supra minute pilosae et aliquantum persistentiter

arachnoideo-tomentosae subtus dense fulvo-tomentosae fere ad basem trinervatae, nervis lateralibus 2/3-3/4 laminarum attingentibus. Inflorescentiae terminales pauce ramosae, ramis plerumque in ramulis brevioribus divisis, ramis et ramulis ultimis 2-7 cm longis dense aliquantum persistentiter albo-tomentosis et sparse fulvo-pilosis. Capitula 12-13 mm alta et 15-25 mm lata base dense albo-tomentosa. Squamae involucri 35-40 subaequilongae 11-12 mm longae, exteriores late ovatae vel suborbiculares 5-6 mm latae margine minute fimbriatae apice abrupte longe anguste acuminatae extus ca. 15-striatae sparse pilosae evanescentiter arachnoideo-tomentosae, interiores lanceolatae vel lineares longe attenuatae; receptacula fimbrillifera, fimbriis usque ad 1 mm longis. Flores radii ca. 40; corollae flavae, tubis 4.5-5.0 mm longis superne dense hirsutis, limbis ca. 14 mm longis et 1.5 mm latis inferne sparse hirsutis fere ad apicem sparse glanduliferis, glandulis plerumque longe stipitatis. Flores disci 50-75; corollae flavae, tubis ca. 3.5 mm longis supra basem dense hirsutis, faucis ca. 2.5 mm longis glabris base vix abrupte constrictis, lobis ca. 2 mm longis et 0.4 mm latis superne glanduliferis apice longe hirsutis, pilis in fasciculo 0.7-0.8 mm longis; filamenta in parte superiore 0.35 mm longa; thecae 2.8 mm longae, cellulis exothecialibus solum in parietibus transversalibus noduliferis; appendices antherarum ovatae 0.4 mm longae et 0.2 mm latae. Achaenia immatura 0.9 mm longa dense setifera ca. 8-costata; setae pappi ca. 35 plerumque 5.0-7.5 mm longae pallide rufescentes apice attenuatae non incrassatae, setae exteriores breviores 0.5-0.8 mm longae ca. 10 tenues. Grana pollinis ca. 30-33 μ diam.

TYPE: COLOMBIA: Meta: Moscofio, alt. 2028 m, 31 Dec. 1875. André 1105 (Holotype, K). PARATYPE: COLOMBIA: Meta: Villaricencio? or Magdalina? André 1105 (K).

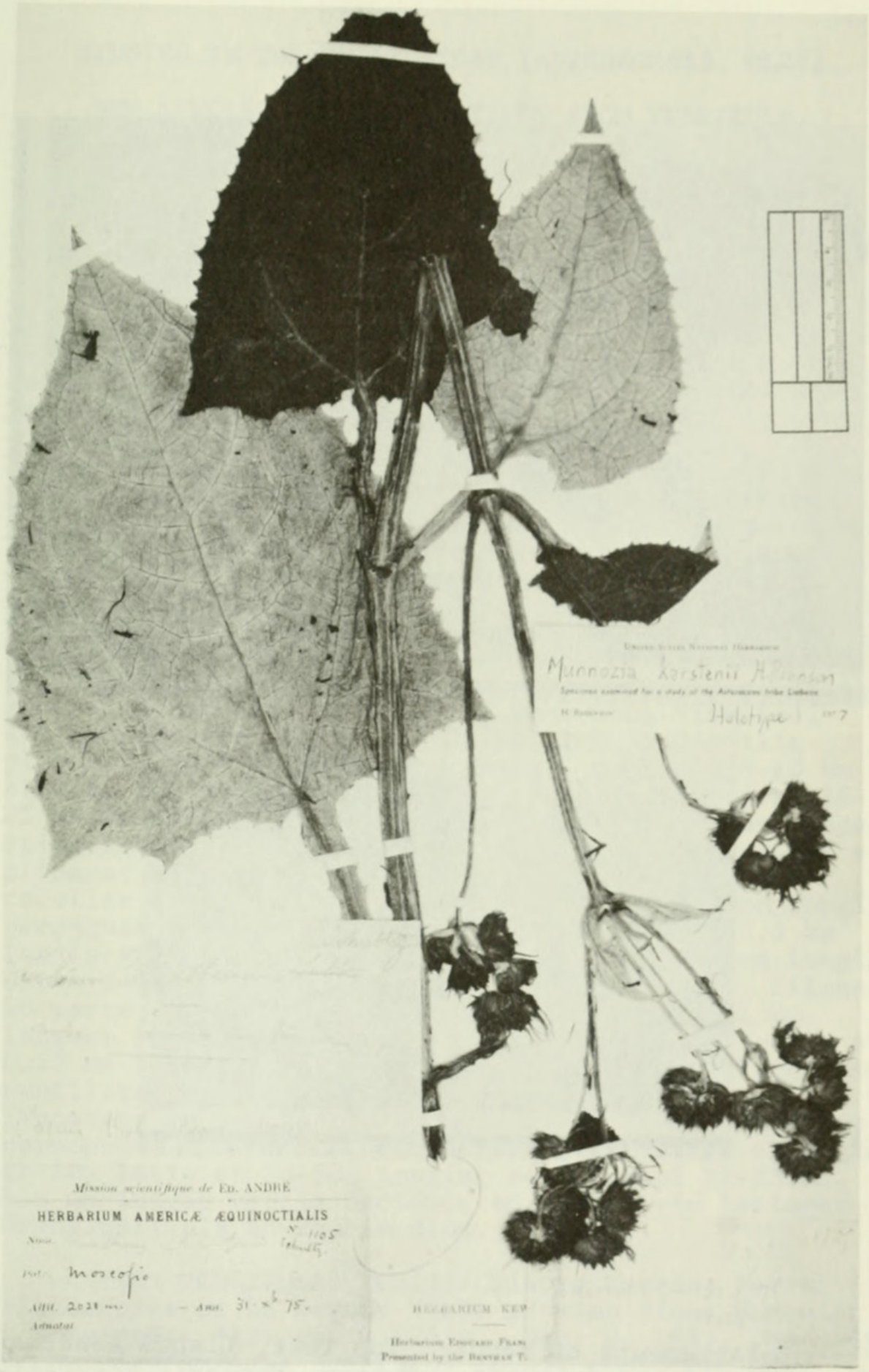
Munnozia karstenii seems closely related to M. gigantea (Rusby) Rusby of Bolivia and but for the wide geographic separation perhaps it would be regarded as only subspecifically distinct. The involucral bracts are the most distinctive feature with their long-attenuate and abruptly acuminate tips. These tips are particularly abrupt and obvious in some of the outer bracts which are much more broadly ovate and more scarious-margined than the equivalent bracts in M. gigantea. The outer bracts also seem distinct in the less persistent arachnoid tomentum, such tomentum being restricted to the base of the head. In M. gigantea, all specimens seen show persistent tomentum

completely covering a number of the outer bracts. The leaf shape seems slightly different from M. gigantea. The blade is longer compared to its width being always obviously longer than wide. Also the lower angles of the leaves rarely seem to extend outward beyond the general outline of the leaf blade. In M. gigantea the basal angles are usually strongly projecting.

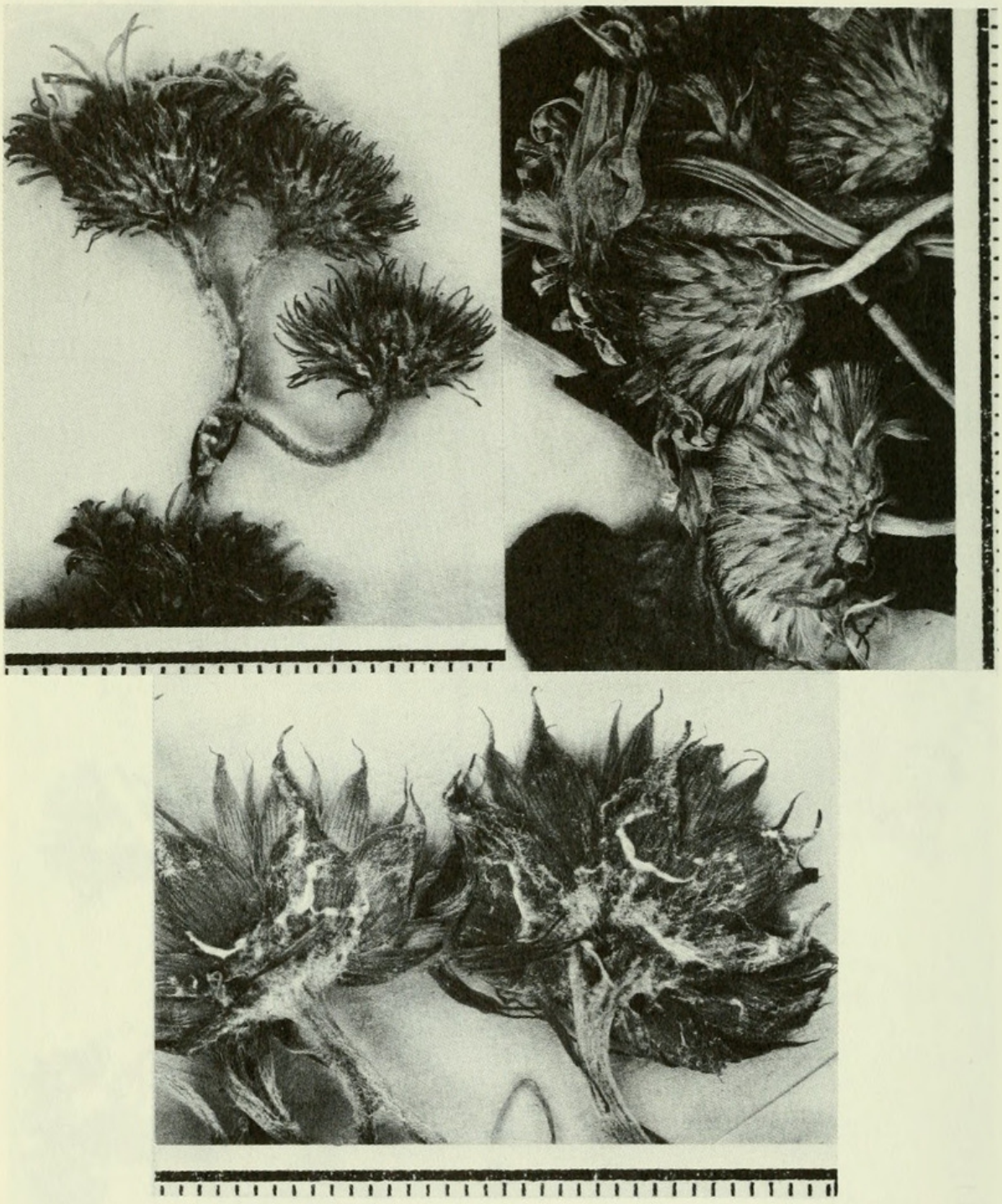
The name of the species is derived from the herbarium name Liabum karstenii Schultz that was on the specimens. The Schultz name has evidently never been published.

Liabum sandemanii H.Robinson, Holotype, Kew. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.

Liabum steinbachii H.Robinson, Holotype, Kew.



Munnozia karstenii H.Robinson, Holotype, Kew.



Enlargements of heads: Top left, Liabum sandemanii. Top right, L. steinbachii. Bottom, Munnozia karstenii.