

V. NOTES ON MEXICAN AND CENTRAL AMERICAN ALDERS.

BY HARLEY HARRIS BARTLETT.

ALNUS ACUMINATA HBK. *A. acuminata a genuina* Regel, Monog. 89 (1861), *A. jorullensis* var. *acuminata* (HBK.) Ktze. Rev. Gen. ii. 638 (1891), not *A. acuminata* Mirb. Mém. Mus. Par. xiv. 464, t. 22 (1827), not *A. acuminata a genuina* Hemsl. Biol. Cent.-Am. Bot. iii. 165 (1883), not *A. acuminata* Sarg. Silva ix. 79, t. 457 (1896), not *A. jorullensis* var. η *acuminata* Winkl. Pflanzenreich, iv. 61, 127 (1904), not *A. acuminata* Fern. Proc. Am. Acad. xl. 25 (1904). Here are placed *Seemann*, no. 942, Loja, Ecuador, and, with considerable doubt, *Tonduz*, no. 11,680, "Bords des rivières au Copey," Costa Rica. The latter specimen is much more ferrugineous than the former and forms a transition to what has been called

ALNUS ACUMINATA var. FERRUGINEA (HBK.) Regel. ?? *Alnus ferruginea* HBK. *A. ferruginea* Fern. Proc. Am. Acad. xl. 27 (1904) *pro parte*. This name may be provisionally accepted for *Tuerckheim*, no. 351, Coban, Department of Alta Verapaz, Guatemala, which seems to be a very ferrugineous extreme of the plant here called *A. acuminata*. The pubescence is very dense, and is persistent on all but the oldest leaves.

ALNUS ARGUTA (Schlecht.) Spach. *Betula arguta* Schlecht. *Alnus arguta* Spach *a genuina* Regel, Monog. 93 (1861). In its typical form this species is accepted as interpreted by Professor Fernald. It presents, however, two variations which seem worthy of recognition. Neither of them appears to fall into any of Regel's four varieties. His var. *genuina* is here taken up as the type form of the species. Var. *Benthami* is so inadequately characterized as to be unrecognizable without access to the type. Moreover it came from Zacualtipan, to the north of the known range of either of the two varieties here proposed. Var. *ovata* was based upon material from three Mexican localities, and one Peruvian locality, but since Regel cited as a synonym *A. Mirbelii* var. Grisb. in Lechl. Pl. Peruv. the type is definitely fixed as the Peruvian element, which it is almost inconceivable should be the same as the Mexican. Var. *punctata* was purely South American.

***Alnus arguta* var. *cuprea*, n. var.** Arbor aspectu inter formam speciei typicam *Alnusque glabrata* Fern. media. Ramuli glabri juventate rubescentes aetate griseo-brunnei. Folia magnitudine valde variabilia, usque ad 8.5 cm. lata 14 cm. (petiolo excluso) longa, basi rotundata vel leviter cordata, apice acuta vel acuminata, argute dupliciter vel irregulariter dentata, utrinque paene glabra, subtus vel nihil vel minus quam ea formae typicae glauca, colore saepe cuprea, supra atriora. Amenta ♀ pedunculata 9–11 mm. crassa ca. 2 cm. longa. — Oaxaca: wet cañon near base of the summit ridge of the Sierra de San Felipe above the City of Oaxaca, alt. 2135 m., *Pringle*, no. 10,251; west slope of Mt. Zempoaltepec, alt. 2350–2440 m., *Nelson*, no. 599; road from Juquila to Nopala, alt. 1220–2135 m., *Nelson*, no. 2415; vicinity of Cerro San Felipe, alt. 2900–3350 m., *Nelson*, no. 1154. Vera Cruz: Orizaba, *Bilimek*, no. 404; Mt. Orizaba, alt. 1830–2440 m., *Nelson*, no. 296; Orizaba, *Botteri*, no. 191.

***Alnus arguta* var. *subsericea*, n. var.** *A. ferruginea* Fern. Proc. Am. Acad. xl. 27 (1904) *pro parte, non* HBK. ? *A. rufescens* Liebm. ex Hemsl. Biol. Cent.-Am. Bot. iii. 165. Arbor ramulis griseo-brunneis, junioribus ferrugineo-puberulis. Folia laminis late ovatis maximis 14 cm. longis 9 cm. latis, basi leviter cordatis vel rotundatis, apice acutis vel breviter acuminatis, supra atroviridibus tenuiter sericeo-pilosis demum glabratis, pilis longis rectis valde appressis, subtus molliter glauco-pubescentibus, nervis rufescentibus in foliis maximis utrinque 16; petiolis subferrugineo-pubescentibus saepissime quam 2 cm. brevioribus. Gemmae parvae glutinosae puberulae pedicellis suis valde longiores nec raro sessiles. Amenta ♀ maturitate ca. 1 cm. crassa 3 cm. longa vel multo breviora. Nuculae alis percoriaceis angustissime cinctae. — Oaxaca: wet cañon near the base of the summit ridge of the Sierra de San Felipe, above the City of Oaxaca, *Pringle*, no. 10,252. This is also the locality cited by Hemsley for *A. rufescens* Liebm. From the name which Liebmann chose there can be little doubt that he had this plant before him, for the only other reddish-leaved *Alnus* from the same locality is so glabrous that Hemsley would certainly not have placed it with *A. acuminata* var. *ferruginea*. Since Liebmann's name is a *nomen nudum* it does not seem at all desirable to take it up in a changed category without having seen his type. To var. *subsericea* may be referred *Ghiesbreght*, no. 160, from Chiapas, the plant upon which Mr. Fernald's description of *A. ferruginea* is largely based.

ALNUS CASTANAEAFOLIA Mirb. It is clear from the original plate and characterization that this species can have no close affinity to the Mexican plant cited by Hemsley under the name *A. jorullensis* HBK. *β castaneaefolia*. The latter name should be placed, as to the Mexi-

can element, in the synonymy of *A. arguta* (Schlecht.) Spach var. *cuprea* Bartlett.

7 *Alnus glabrata* var. *durangensis*, n. var. Arbor trunco a cortice griseo sublevi tecto. Ramuli glabri ochracei modice graciles. Folia lanceolata 14 cm. longa infra mediam 6 cm. lata argute dentata, dentibus subremote serratis, supra glabra olivaceo-viridia, subtus glauca glabra vel secus nervos minute pubescentia, exigue resinoso-punctata, apice longe acuminata, basi acuta in petiolum 1.5 cm. longum decurrentia; nervis utrinque 9-10; petiolis anguste canaliculatis exigue albido-pubescentibus. Amenta ♀ ca. 4 maturitate cylindrica 2.5 cm. longa 8 mm. crassa, pedunculis saepe 6 mm. longis. Nuculae alis coriaceis anguste cinctae. — Collected in the vicinity of the City of Durango, State of Durango, April to November, 1896, *E. Palmer*, no. 965 (type, in hb. Gray). Readily distinguished from the typical form of the species by the glaucous lower leaf-surface.

ALNUS JORULLENSIS HBK. This species has been seen from the States of Jalisco, Michoacan, Mexico, Hidalgo, and Oaxaca, the var. *EXIGUA* Fern. from the States of Guanajuato and Oaxaca. The material from Oaxaca, both of the species (*Pringle*, no. 10,248) and of the variety (*Pringle*, no. 10,249), is in young foliage, and future collections may show that it belongs elsewhere.

ALNUS JORULLENSIS var. *E. W. Nelson*, no. 3661, collected near the Hacienda of Chaucol, Guatemala, has small sessile buds and cuneate leaves very much like those of *A. jorullensis*, but since the pistillate strobiles are unknown it seems better to leave the form undescribed rather than to risk adding another name to the involved synonymy of this species.

A. MIRBELII Spach. The only material in American herbaria which answers to the description and plate of this species is *Bang*, no. 1893, from Bolivia. Perhaps a sheet in the Gray Herbarium collected by *Seemann* and labelled by Dr. Gray "And. Quitensis — Panama" should be placed here also.

Alnus ovalifolia, n. sp., *A. acuminata* Fern. pro parte, non HBK. Arbor ramulis junioribus brunneis glabris subangulatis. Gemmae glutinosae brevipedicellatae sparsim pubescentes vel glabratae. Folia ovalia subregulariter denticulata, apice basique rotundata obtusa vel raro acutiuscula, supra solum in nervis perexiguae pilosa, subtus secus nervorum latera plus minusve pilosa, alias glabra, laminis 1.5-5.5 cm. latis 2.5-8.0 cm. longis; petiolis 2-10 mm. longis, supra canaliculatis pilosis, subtus glabratiss. Amenta ♂ 4-6 usque ad 13 cm. longa fere sessilia vel longipedunculata. Amenta ♀ in uno ramulo 3-4 ovoidea ca. 2.5 cm. longa 1.4 cm. crassa maturitate plerumque fide sessilia

recte divergentia, duo summa propinqua. Nuculae 4 mm. longae 2.5–3 mm. latae basin versus angustatae, quam in speciebus affinibus latius coriaceo-alatae, apice saepius auriculatae. — GUATEMALA: San Lucas, Department of Zacatepequez, alt. 1700 m., *J. Donnell Smith*, no. 2188 (type, in hb. Gray); Antigua, Department of Zacatepequez, *Kellerman*, no. 4966; San Miguel Uspantán, Department of Quiché, alt. 1800 m., *Heyde et Lux*, no. 2923. It was from the type of this species, in the main, that Professor Fernald drew up the description of *Alnus acuminata* in his Synopsis of the Mexican and Central American Species of *Alnus*. There the peculiar ashy-brown color of the bark and strobiles is mentioned, a character afterward emphasized as of diagnostic worth in his characterization of *Alnus Pringlei* Fern. The color is peculiar to the type specimen and seems to be due to a thin deposit of clay, perhaps wind-borne dust. Professor Thaxter has kindly examined the specimen for fungi, with negative results.

ALNUS PRINGLEI Fern. The range of this species probably extends northward to Durango. At least the following specimens in the National Herbarium are nearer to *A. Pringlei* than to any other species: Terreria, Jalisco, *M. E. Jones*, no. 439 a; San Ramon, Durango, 21 April–18 May, 1906, *Palmer*, no. 207.

ALNUS RHOMBIFOLIA Nutt. The accrediting of this species to Mexico in the Pflanzenreich is based upon an error in determination. The number cited as *A. rhombifolia* is *A. glabrata* Fern.



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