with pale stipitate glands; involucre 8 to 10 mm. long; inner scales narrowly linear, attenuate, glandular, bristly chiefly near the midrib, scarcely at all woolly: achenes columnar, striate, reddish brown, 3 mm. long; pappus slightly tawny. — Jalisco: near Guadalajara, gravelly banks, Pringle, no. 5133 (hb. Gr.), hillsides, Pringle, no. 2990 (hb. Gr.), dry gravelly banks, Pringle, no. 4461 (hb. Gr.). Territory of Tepic: between Dolores and Santa Gertrudis, Rose, no. 2044 (hb. U. S. Nat. Mus.). State of Mexico: Sierra de Ajusco, alt. 2440 m., Pringle, no. 7211 (hb. Gr.).

Var. Ghiesbreghtii, n. var. Pedicels and involucral scales covered with close wool (tawny in dried specimens) as well as stipitate glands: habit, etc., of the typical form. — Chiapas: growing in the plains, cool region, Ghiesbreght, no. 573 (hb. Gr.).

Doubtful Species.


H. frigidum, Wedd. Chloris, And. i. 225 (1855); Klatt in Engl. Jahrb. viii. 52. — Klatt, l. c., ascribes this South American species to Guatemala, a report based upon Lehmann’s no. 1526, which is not now in the Klatt Herbarium. No specimen from north of Panama has been seen by the writers, which corresponds with the South American plant.

IV.—SYNOPSIS OF THE MEXICAN AND CENTRAL AMERICAN SPECIES OF ALNUS.

By M. L. Fernald.

Several Mexican and Central American Alders of very diverse characters have been generally called A. acuminata and A. jorullensis. This disposition of the forms has been most unsatisfactory, and the following synopsis is offered as a partial solution of the difficulties presented by them.
Mature strobiles 2 cm. or more long (rarely shorter in *A. oblongifolia* and *A. glabrata*).

Petioles pubescent.

Leaves ovate to obovate, rounded at base.

*A. acuminata*, HBK. Bark of branches ashy brown, smooth; buds pubescent; leaves short-acuminate, finely and doubly serrate-dentate, 0.5 to 1.5 dm. long, 0.4 to 1 dm. broad, subcoriaceous, sparingly pilose on the midrib above, more abundantly so on the midrib and nerves beneath; petiole about 1 to 1.5 cm. long; peduncles stout, glabrous or minutely puberulent; staminate aments becoming 1 dm. or more long; the ashy-brown strobiles 3 or 4, sessile or short-pedicelled, ovoid-oblong, 2.2 to 2.6 cm. long, about 1.5 cm. thick; nutlet lanceolate, 4 mm. long, 1.75 mm. broad, bordered by an equally broad coriaceous wing. — Nov. Gen. & Sp. ii. 20; Regel in DC. Prodr. xvi, pt. 2, 183. Described from the Andes of Peru, this species has been made to include practically all the forms of South America, Mexico, California and New Mexico. From the original description, however, the species appears to be a well marked plant represented in the Gray Herbarium from Guatemala and Bolivia. Guatemala, San Lucas, Dept. Zacatepequez, alt. 1700 m., April, 1890 (J. D. Smith, no. 2188); Bolivia (Bang, no. 1893).

Leaves oblong-lanceolate or elliptic, subcuneate at base.

*A. oblongifolia*, Torr. Bark of branches reddish brown, smooth; of the branchlets puberulous or glabrate; buds glabrous; leaves acute, sharply double-serrate, 0.5 to 1.5 cm. long, 3 to 6.5 cm. broad, more or less glandular-dotted, coriaceous, pilose or glabrate above, paler and more or less pilose on the prominent veins beneath; petioles slender, 1 to 2.5 cm. long; peduncles puberulent or glabrate; staminate aments becoming 1 dm. long; the brown or slightly ferrugineous strobiles 3 to 5, pedicelled, sub-cylindric, when mature about 2 cm. long, 1 cm. thick; nutlet obovate, 3 mm. long, 2 mm. broad, with a narrow submembranaceous wing. — Bot. Mex. Bound. 204. *A. serrulata*, γ oblongifolia, Regel, l. c. 188. *A. acuminata*, Sargent, Silva, ix. 79, t. 457, in part, not HBK. — New Mexico, banks of the Mimbres and near Santa Barbara, tree 9.23 m. high (Charles Wright, no. 1864): California, San Bernardino, "tree 80 feet high, 2–3 feet in diameter," 1876 (C. C. Parry & J. G. Lemmon). Sonora, Huchuerachi, alt. 1230 m., Dec., 1890 (C. V. Hartman, no. 322, F. E. Lloyd, no. 464).
Petioles glabrous.

Leaves pilose on the nerves beneath.

**A. arguta**, Spach. Bark of the branches and branchlets brown, glabrous: buds short-stalked, glabrous: leaves ovate or obovate, acute or bluntish, rounded or somewhat narrowed at base, finely but sharply double-serrate, 0.4 to 1 dm. long, 3 to 7.5 cm. broad, sparingly glandular-dotted, but glabrate above, paler beneath and pilose especially along the nerves; petiole slender, 1 to 2.5 cm. long: peduncles slender, glabrate; staminate aments 4 to 7 in terminal panicles (becoming about 1 dm. long): the dark reddish-brown strobiles 3 or 4, sessile, sub-cylindric, when mature 2 to 3 cm. long, about 1 cm. thick: the cuneate obovate or oblong nutlet 2.5 cm. long, 1.5 mm. broad, somewhat broader than the coriaceous wing. — Ann. Sci. Nat. ser. 2, xv. 205. **A. acuminata**, a genuina, Hemsl. Biol. Cent.-Am. Bot. iii. 165, not Regel. **A. jorumellensis**, var. castaneaefolia, Hemsl. l. c. 166, not Regel. **Betula arguta**, Schlecht. Linnaea, vii. 139. — Vera Cruz, Mt. Orizaba, April 10, 1867 (Bilimek, no. 404), without date (Botteri, no. 857); alt. 3400 m., Aug., 1891 (H. E. Seaton, no. 231). Originally described from Vera Cruz and Tamaulipas.

Leaves glabrous, or at most only slightly pubescent when young.

**A. glabrata**, n. sp. Bark of the branches brown, glabrous: buds short-stalked, sparingly puberulent or glabrous: leaves oblong-lanceolate or elliptic, long-acuminate, narrowed or slightly rounded at base, coarsely and doubly serrate-dentate especially above, paler and dull beneath, the yellowish or brownish nerves prominent; petiole to 1 to 3.5 cm. long: peduncles thickish, glutinous; staminate aments 3 or 4, becoming 7 or 8 cm. long; the dark brown or blackish strobiles oblong or cylindric, sessile or short-stalked, in maturity 1.8 to 2.8 cm. long, 9.5 to 14 mm. thick: nutlets oblong to oblong-lanceolate, 3 to 5 mm. long, 1.5 to 2 mm. broad, with slightly narrower coriaceous wings. — **A. acuminata**, Sargent, l. c., in part, not HBK. — Guanajuato, Mt. San Nicholas, April, 1882, and Santa Rosa, April, 1901 (A. Dugès). **Queretaro**, between Mexico and Queretaro, November, 1827 (Berlandier, no. 1294): Hidalgo, Dublan, December 4, 1902 (C. G. Pringle, no. 11,179): Mexico, Valley of Mexico, June 1, 1865–66 (Bourgeois, no. 244), Dec. 9, 1892 (C. G. Pringle, no. 4361); near Tizapan, alt. 2300 m., Jan. 30, 1899 (C. G. Pringle, no. 8022): Oaxaca, Valley of Oaxaca, alt. 1570 to 1786 m., Sept. 8, 1894 (E. W. Nelson, no. 1254); near Huajuapan, alt. 1725 to 2000 m., Nov. 16, 1894 (E. W. Nelson, no. 1976); Coyula.
de Cuyamecalco, alt. 2155 m., Apr. 24, 1895 (L. C. Smith, no. 495). Said to be a large tree.

** Mature strobiles less than 2 cm. long (exceptional plants of *A. oblongifolia* and *A. glabrata* may be looked for here).

** Mature leaves ferrugineous-velutinous beneath.

*A. ferruginea*, HBK. Branches brown, the younger parts more or less pubescent; buds very pubescent; leaves ovate, acuminate at tip, rounded or narrowed at base, coarsely and doubly serrate, 0.5 to 1.5 dm. long, 3.5 to 8 cm. broad, dull green and minutely pilose above; petiole thickish, 1 to 2 cm. long; peduncles villous or glabrate, the staminate aments becoming 1.5 dm. long; the dark brown short-oblong strobiles subsessile or short-stalked, in maturity 1.5 to 1.9 cm. long, about 1 cm. thick; nutlets cuneate-ovoblate, 3 mm. long, 2 mm. wide, with narrower coriaceous wings.—HBK. l. c. 21. *A. acuminata*, Regel, l. c. 184; Hemsl. l. c. 165. — Described from Colombia. Extending into Central America and Southern Mexico. Chiapas (Ghiesbrecht, no. 160): Guatemala, Coban, Alta Verapaz, alt. 1488 m., Feb. 1886 (H. von Tuerckheim in Exsicc. J. D. Smith, no. 351).

** Mature leaves merely pilose on the nerves beneath.

*A. jorullensis*, HBK. Branches reddish brown, smooth, the younger parts puberulent or glabrate; buds pruinose; leaves oblong or oblong-ovoblate, thick, mostly 7 to 13 cm. long, 2.5 to 5.5 cm. wide, rounded or acute at tip, subcuneate or rounded at the subentire base, crenate-serrate toward the tip, glaucous and sublucid above, brownish beneath and closely pruinose with glandular or waxy atoms, the prominent nerves more or less pilose; petioles thickish, 3 to 10 mm. long, pubescent or glabrate; peduncles thick, pruinose or glabrate; staminate aments 3 or 4, becoming 6 cm. long; the reddish-brown strobiles 3 or 4, sessile or subsessile, oblong-ovoid, 1 to 1.8 cm. long, barely 1 cm. thick; nutlets cuneate-ovoblate to suborbicular, 2.5 mm. long, 2 to 2.5 mm. broad, with narrow membranaceous wings.—HBK. l. c. 20; Regel, l. c.; Hemsl. l. c. 166, in part. *A. acuminata*, Sargent, l. c. in part, not HBK. Sierra Madre of Central and West-Central Mexico. Described from Volcan de Jorullo, Michoacan. Michoacan, mountains near Patzcuaro, Dec. 21, 1891 (C. G. Pringle, no. 5057); Sierra Madre, without locality (Seemann): Mexico, foothill of Mt. Ixtaccihuatl, Jan. 5, 1899 (C. C. Deam, no. 130).

** Var. exigua**, n. var. Leaves short-oblong, 2 to 4 cm. long, 1 to
2.4 cm. broad, the nerves conspicuously pilose beneath; petioles 2 to 4 mm. long, pilose: strobiles globose or short-oblong, about 1 cm. long. — Guanajuato, mountains of Santa Rosa, April, 1901 (A. Dugès.)

V. — DIAGNOSES AND SYNONYMY OF MEXICAN AND CENTRAL AMERICAN SPERMATOPHYTES.

By J. M. Greenman.

Echeandia Pringlei, n. sp. Roots fascicled, tuberiform; the tuberous portion 1 to 2 cm. long, 5 to 7 mm. in diameter; leaves chiefly radical, 1 to 4 dm. long, 2 mm. broad, about 9-nerved, glabrous on both surfaces, more or less involute, hirtellous-ciliolate-margined, firm in texture, yellowish in the dried state, sometimes falcate; the fibrous portion of the bases of the older leaves persistent around the base of the scapiform stem: scape simple or branched, 2.5 to 4 dm. high, bearing 1 to 3 leaf-like bracts: floral bracts lance-ovate, acute, scarious: flowers two in the axil of each bract; pedicels 5 to 10 mm. long, jointed below the middle: perianth white; divisions lanceolate, about 1 cm. long, 1.5 to 2.5 mm. broad, acute, 3-nerved: stamens nearly or quite as long as the perianth-divisions: anthers united into a tube 6.5 to 8 mm. in length: capsule oblong, 6 mm. long, transversely nervetd. — Mexico. State of Jalisco: Etzatlan, collection of 1903, C. G. Pringle, no. 11,852 (hb. Gr.).

Sisyrinchium macrophyllum, n. sp. Erect, 4 to 6 dm. high, glabrous throughout: roots long, fleshy, almost tuberous: stems narrowly winged, leafless to the first fork, branched above into a several-headed inflorescence: leaves lance-attenuate, 5 to 6 dm. long, 1 to 5 cm. broad, acute, prominently nervetd, narrowly subcartilaginous-margined: bracts of stem and inflorescence lance-acuminate, 8 cm. or less long: peduncles in fruiting specimens 5 to 8 cm. in length; spathes 2–5-flowered; valves lanceolate, 3 to 3.5 cm. long, acute, the outer slightly shorter than the inner: capsules oblong, triangular, 1.2 to 2 cm. long, one half as broad, glabrous; seeds subspherical, 2 mm. in diameter. — Mexico. State of San Luis Potosí: Alvarez, 28 September to 3 October, 1902, Dr. Edward Palmer, no. 205 (hb. Gr. and hb. U. S. Nat. Mus.).

Phoradendron Palmeri, n. sp. Pubescent throughout; younger parts subtomentose: stem and branches terete: leaves narrowly oblong or oblong-spatulate, 1 to 3.5 cm. long, 3 to 8 mm. broad, obtuse, entire, narrowed below into a subpetiolate base: spikes of fertile flowers solitary,

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