

Vaccinium Cavaleriei Léveillé & Vaniot in Fedde, Rep. Spec. Nov. ix. 447 (1911); Fl. Kouy-Tchéou, 154 (1914).

CHINA. Kweichow: Pin-fa, *J. Cavalerie*, no. 20bis, April 4, 1902 (fleurs odorantes, d'une jaune sombre).

(To be continued)

NEW SPECIES, VARIETIES AND COMBINATIONS FROM THE HERBARIUM AND THE COLLECTIONS OF THE ARNOLD ARBORETUM¹

ALFRED REHDER

Lithocarpus aculeata, comb. nov.

Pasania aculeata Markgraf in Bot. Jahrb. LIX. 73 (1924).

SOUTHEASTERN NEW GUINEA.

Lithocarpus aspericupula, comb. nov.

Pasania aspericupula Markgraf in Bot. Jahrb. LIX. 78 (1924).

NORTHEASTERN NEW GUINEA.

Lithocarpus bancana, comb. nov.

Quercus bancana Scheffer in Natuurk. Tijdschr. Neederl. Ind. xxxi. 361 (Obs. Phytog. II. 49) (1869); in Flora, LIII. 251 (1870).—King in Ann. Bot. Gard. Calcutta, II. 62, t. 56B (1889).

Pasania bancana Markgraf in Bot. Jahrb. LIX. 79 (1924).

BANCA, NORTHEASTERN GUINEA.

Lithocarpus Blumeana, comb. nov.

Quercus Blumeana Korthals, Kruidkunde in Verhand. Natuurl. Geschied. Nederl. Bezitt. Bot. 208, t. 44 (1839–42).—King in Ann. Bot. Gard. Calcutta, II. 76, t. 70 (1889).—Koorders & Valetton in Meded. Land's Plantent. LVIII. 57 (Bijdr. Boomsoort. Java, x) (1904).

Pasania Blumeana Gamble in Jour. As. Soc. Bengal. LXXV. 445 (1915).

MALESIA.

Lithocarpus borneensis, comb. nov.

Quercus borneensis Merrill in Philip. Jour. Sci. XXI. 516 (1922).

BORNEO.

Lithocarpus boholensis, comb. nov.

Quercus boholensis Merrill in Philip. Jour. Sci. XXIX. 476 (1926).

PHILIPPINE ISLANDS.

Lithocarpus Cantleyana, comb. nov.

Quercus Cantleyana King in Hooker f., Fl. Brit. India, v. 613 (1890); in Ann. Bot. Gard. Calcutta, II. 64, t. 59 (1890).

Pasania Cantleyana Gamble in Jour. As. Soc. Bengal, LXXV. 433 (1915).—Ridley, Fl. Malay. Pen. III. 381 (1924).

Synaedrys Cantleyana (King) Koidzumi in Tokyo Bot. Mag. xxx. 190 (1916).

MALESIA.

Lithocarpus Ewyckii, comb. nov.

Quercus Ewyckii Korthals, Kruidkunde in Verhand. Natuurl. Geschied. Nederl. Bezitt. Bot. 212, t. 46 (1839–42).—King in Ann. Bot. Gard. Calcutta, II. 68, t. 62a (1890).

¹ Continued from vol. ix. 31.

Cyclobalanus Ewyckii Oersted in Naturh. For. Vidensk. Meddel. xviii. 80 (1866).

Pasania Ewyckii Gamble in Jour. As. Soc. Bengal. LXXV. 431 (1915).

Synaedrys Ewyckii (Korth.) Koidzumi in Tokyo Bot. Mag. xxx. 191 (1916).

MALESIA.

Lithocarpus Falconeri, comb. nov.

Quercus Falconeri Kurz in Jour. As. Soc. Bengal. XLIV. pt. II. 197 (1875).—Hooker f., Fl. Brit. Ind. v. 608 (1890).—King in Ann. Bot. Gard. Calcutta, II. 42, t. 34 (1890).

Pasania Falkoneri [sic] (Kurz) Schottky in Bot. Jahrb. XLVII. 676 (1912).

Synaedrys Falconeri (Kurz) Koidzumi in Tokyo Bot. Mag. xxx. 195 (1916).

BURMA.

Lithocarpus luzoniensis, comb. nov.

Quercus luzoniensis Merrill in Philip. Jour. Sci. III. Bot. 323 (1908); v. Bot. 342 (1910); Enum. Philip. Flow. Pl. II. 28 (1923).

Synaedrys luzoniensis (Merr.) Koidzumi in Tokyo Bot. Mag. xxx. 197 (1916).

PHILIPPINE ISLANDS.

Lithocarpus minahassae, comb. nov.

Quercus minahassae Koorders apud Elmer in Leaflet. Philip. Bot. III. 941 (1910).—Koorders in Koorders-Schumacher, Syst. Verz. Herb. Koorders, III. 28 (1911), nomen.—Merrill, Enum. Philip. Flow. Pl. II. 28 (1923).

CELEBES, PHILIPPINE ISLANDS.

Lithocarpus Nymanniana, comb. nov.

Pasania Nymanniana Markgraf in Bot. Jahrb. LIX. 77 (1924).

NEW GUINEA.

Lithocarpus papuana, comb. nov.

Quercus pseudo-molucca var. *papuana* Warburg in Bot. Jahrb. XIII. 286 (1891).—Seemen in K. Schumann & Lauterbach, Fl. Deutsch. Schutzgeb. Südsee, 263 (1901).

Quercus grandifrons Seemen, op. cit. Nachtr. 240 (1905).—Non King.

Quercus lamponga Warburg in Bot. Jahrb. XIII. 286 (1901).—Non King.

Pasania papuana Markgraf in Bot. Jahrb. LIX. 74 (1924).

NEW GUINEA.

Lithocarpus rizalensis, comb. nov.

Quercus rizalensis Merrill in Philip. Jour. Sci. XIII. Bot. 272 (1918); Enum. Philip. Flow. Pl. II. 30 (1923).

PHILIPPINE ISLANDS.

Lithocarpus rufo-villosa, comb. nov.

Pasania rufo-villosa Markgraf in Bot. Jahrb. LIX. 74, fig. 3, fig. 4 B, C (1924).

NEW GUINEA.

Lithocarpus spicata (Sm.) Rehd. & Wils. var. **placentaria**, comb. nov.

Quercus depressa Blume in Verh. Bat. Genootsch. IX. 209, t. 2 (1823).

Quercus placentaria Blume, Bijdr. 518 (1825); Fl. Javae Cupulif. 19, t. 9 (1829-52).—DeCandolle, Prodr. XVI. pt. II. 87 (1864).—Non Wallich.

Quercus spicata var. *placentaria* Miquel, Fl. Ind. Bat. I. 849 (1855); Fl. Ind. Bat. I. pt. I. 849 (1855).

Quercus spicata var. *depressa* King in Ann. Bot. Gard. Calcutta, II. 48 (1890).—Koorders & Valetton in Meded. Land's Plantent. LXVIII. 42 (Bijdr. Boomsoort. Java, x) (1904).

Pasania spicata (Sm.) Oerst. var. *placentaria* (Miq.) Schottky in Bot. Jahrb. XLVII. 664 (1912).—Markgraf in Bot. Jahrb. LIX. 79, fig. 4a (1924).

JAVA, NEW GUINEA.

Lithocarpus Vidalii, comb. nov.

Quercus Vidalii Fernandez-Villars, Nov. App. Fl. Filip. 209 (1880).—Vidal, Sin. Pl. Leñ. Filip. Atl. 41, t. 92, fig. B (1883); Rev. Pl. Vasc. Filip. 260 (1886).—Elmer in Leaf. Philip. Bot. VI. 1981 (1913).—Merrill, Enum. Philip. Flow. Pl. II. (1923).

PHILIPPINE ISLANDS.

Sophora secundiflora Lag. f. *xanthosperma*, forma nov.

A typo recedit seminibus flavis.

TEXAS: San Antonio, on the north side of a low ridge running west from the extreme north end of Brackenridge Park and San Antonio River, L. W. Nuttall, February and March, 1927 (Type); also in other counties in southwestern Texas (L. W. Nuttall in a letter of Dec. 15, 1928).

No yellow-seeded form of *S. secundiflora* has been so far recorded. The seeds collected by Mr. Nuttall vary somewhat in color; most of them are antimony yellow running to ochraceous-orange (Ridgway, pl. xv) while the palest run to mustard-yellow (Ridgway, pl. xvi). There are also shrubs which bear seeds mottled yellow and red, but the great majority of shrubs in that particular locality bear pods with the typical red seeds which run from nopal red to Brazil red and scarlet (Ridgway, pl. I). Regarding the frequency of the shrubs which bear yellow seeds, Mr. L. W. Nuttall, in a letter of March, 1927, writes as follows: "A few days ago I spent several hours in further investigation of the *Sophora* shrubs on which the yellow seeds are found. I went with a preconceived idea that I would find them on old injured or partly dead specimens. I found them on sound specimens 20 feet high and the clearest and palest were on one that was not over 4 feet high. I also found that some produce only dark rich red seeds, these constitute the bulk and are of various heights. There are others, perhaps one in a thousand, that have more or less mottled seeds, all having at least a slight tint of yellow, then there are those that have pale yellow seeds, these I judge number about one in ten thousand." In a letter dated December 15, 1928, Mr. Nuttall writes that the yellow-seeded form grows in more than one county in southwestern Texas and adds that it "has been much used by the children in playing games, when added to the true species they are used as counters, etc., the red, yellow and spotted ones having different values."

The fact that it is much used by children in their play shows that it is of fairly frequent occurrence in that part of the country and it seems strange that the form has not been recorded before.

Hypericum kouytchense Lévillé in Bull. Soc. Agric. Sarthe, XXXIX. 322 (Bouquet Fl. Chine, 7) (1904); in Bull. Soc. Bot. France, LIV. 592 (1907); Fl. Kouy-Tchéou, 198 (1914).

Hypericum spec. Rehder in Sargent Pl. Wilson. III. 452 (1917).

CHINA. Kweichow: mountains of Lou-tsung-koan, *Em. Bodinier*, no. 1603, May 31, 1897 (common in the mountains; handsome yellow flowers). Eastern Szechuan: Wushan, cliffs and thickets, alt. 1000 m., *E. H. Wilson*, Arnold Arb. Exp. no. 256, 1907 (shrubby, 0.6 m. tall; flowers yellow. Seeds only).—Plants raised from seed of no. 256: Aldenham House Gardens, Elstree, Herts, England, *S. Beckett*, 1928.

This species belongs to the sect. *Norysca* and seems intermediate between *H. lysimachioides* Wall. and *H. patulum* Thunb.; it is most closely related to the latter, but differs in the ovate-lanceolate acuminate sepals, the obovate-oblong petals, the shorter stamens, the longer styles, longer than the elliptic-ovoid ovary and the stamens, and the generally more pointed leaves. By its rather narrow sepals and petals it resembles *H. lysimachioides* Wall., but that species has still narrower sepals and petals, longer stamens and shorter styles. As Lévillé's description is incomplete, I give here a description chiefly based on the specimens received from Aldenham: Much-branched shrub about $\frac{1}{2}$ m. tall; branchlets slightly two-edged, usually purplish; leaves subsessile, elliptic-ovate to elliptic-oblong, acute or acutish, broadly narrowed at base, 2–4.5 cm. long and 0.8–2 cm. broad, glaucescent beneath. Flowers golden-yellow, about 5 cm. across, in 3-flowered cymes, pedicels 5–10 or rarely to 15 mm. long, the lateral ones with small lanceolate or linear lanceolate bracts; sepals ovate-oblong or oblong-lanceolate, acuminate, 5–10 mm. long and 2.5–4 mm. broad; petals obliquely oblong-obovate, 2–2.5 cm. long and 1.2–1.5 cm. broad, minutely denticulate on one side above the middle; stamens about half as long as petals; styles 5, slender, straight, recurved only at apex, exceeding the stamens, longer or as long as the elliptic-ovoid ovary.

✓ *Pertya discolor*, spec. nov.

Frutex metralis, valde ramosus, ramis gracilibus erecto-patentibus cortice fibroso solubili flavido-griseo obtectis; ramuli juniores tenuiter adpresse pubescentes; gemmae ovoideae, obtusiusculae, pauciperulatae, griseo-pubescentes. Folia decidua, membranacea, sparsa, alterna, in ramulis annotinis 2–3-fasciculata interdum paucis minoribus additis, brevipetiolata, anguste vel lineari-lanceolata, acuta, basi attenuata, 1–2.5(–3) cm. longa et 3–4.5 mm. lata, integra, supra glabra, laete viridia, subtus dense tomento albo villososericeo obtecta, costa media supra impressa subtus elevata, nervis lateralibus paucis vix visibilibus. Capitula solitaria in axillis foliiferis ramulorum annotinorum pedunculo gracili pubescente 4–7 mm. longo suffulta, oblongo-ovoidea, 7–8 cm. longa, 3–4-flora; involucri squamae albido-pubescentes, circiter 10, exteriores ovatae et acuminatae, circiter 3 mm. longa, interiores oblongae, ad 6 mm. longa, obtusae, vix venosae; pappi setae scabrae, corolla paullo breviores; corolla rubro-purpurea, 6–7 mm. longa, fere ad medium divisa, lobis linearibus acuminatis; antherae 3.5–4 mm. longae, breviter

acuminatae, basi longe caudatae. Achaenia obovoideo-oblonga, subteretia, 5 mm. longa, 1.5 mm. crassa, decemcostata, breviter subadpresse pilosa, pappi radiis 6 mm, longis scabridis albidis basin versus leviter fuscescentibus.

CHINA. Central Kansu: en route to Lin hoa shan, from Choni via Tao chow, among scrub, *J. F. Rock*, no. 12667, July, 1925 (plant 1 m.; leaves silvery white beneath; florets dark purplish red; type). Shansi: Chieh-shin distr., Mien-shan-ye, ad rupes apricas in silva frondosa, et ad marginem silvae in rupibus, alt. 1900–2000 m., *Harry Smith*, nos. 5786 and 7839, June 19 and Sept. 5, 1924 (flower-buds and fruit).

This very distinct new species seems to be most nearly related to *P. sinensis*, but is readily distinguished by its pubescence, the smaller and narrower leaves tomentose beneath, the shorter-peduncled few-flowered smaller heads, with purple flowers. This species is the only really ligneous Composite collected by Rock on his expedition to Kansu and northeastern Tibet; there are some suffruticose species which with the herbaceous Compositae collected during this expedition are in the hands of Dr. J. Mattfeld for determination.



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