Plantae Chinenses Forrestianae.

Plants discovered and collected by George Forrest during his first exploration of Yunnan and Eastern Tibet in the years 1904, 1905, and 1906.

Enumeration and Description of Species of Rubus.

BY

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With Plates LXIII.–LXIX.

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1. **Rubus loropetalus,** Franchet, in Plant. Delav. (1889), p. 203.

"Creeping shrubby plant of 3–4 inches. Flowers pure white. In dense, shady pine forests on the eastern flank of the Lichiang Range. Lat. 27° 18′. Alt. 10–12,000 ft. June 1906." G. Forrest. No. 2330.

"Plant of 2–6 inches. Stoloniferous. Flowers white. Shady pine forests on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 10–12,000 ft. July–September 1906." G. Forrest. No. 4403.

Franchet distinguishes this species from *R. Fockeanus*, Kurz, by its narrow petals and by a somewhat different shape of the sepals. It seems doubtful, however, whether the two species can be kept distinct.

2. **Rubus lineatus,** Reinw. f., **angustifolia,** Hook f., in Flor. Brit. Ind. ii. (1879), p. 333.

Petioli 2–3 cm. longi, foliola 12 cm. longa, 3 cm. lata, subtus albo-sericea.

"Spreading shrub of 6–10 ft. Flowers white. Damp, shady situations in the Ku-tan-ho valley, Salwin valley, Salwin Irawaddy divide. Lat. 26° 30′. Alt. 9000 ft. September 1904." G. Forrest. No. 1046.

3. **Rubus paniculatus,** Sm., in Rees' Cyclop. xxx, Rubus, p. 41.

"Shrub of 6–12 ft. Flowers yellowish-white. Rocky situations in thickets on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 9–10,000 ft. August 1906." G. Forrest. No. 4399.

4. **Rubus major,** Focke. Sp. nov. Plate lxiii.

R. multibracteato similis, sed multo major.

Frutex elatus, subscandens, ad 3–5 m. altus. Rami fertiles teretiusculi, cum petiolis dense villoso-tomentosi et hinc inde recurvo-aculeati; stipulae liberae (caulinae), magnae, latae, irregulariter incisae. Petioli ca. 6 cm. longi; folia ambitu subrotunda, diam. ca. 12 cm., basi profunde cordato-incisa, palmato-7-nervia, toto margine fere 15-lobulata, lobis acutis, inaequaliter argute dentata, supra pustulato-rugosa, subtus nervis prominulis reticulata, molliter cano-villosa. Inflorescentia e floribus paucis magnis et axillaribus et bracteatis composita; pedunculi tomentosi, ad 3 cm. longi. Flores expansi fere diam. 5 cm.; calyx externe cano-tomentosus, sepalis ovato-oblongis, inaequaliter appendiculato-mucronatis, post anthesin patentibus. Petala, ut videtur, elliptica, sepalis paullo breviora, post anthesin marcescentia, sordide albida; filamenta complanata, pilosa; styli filiformes stamina superantes. Gynophorum, post fructum carptum, elongato-conicum (ca. 1 cm. longum), glabriusculum, stipite crasso villoso elevatum; discus glaber.

"Plant of 10–20 ft. Semi-climber. Flowers dirty white. Shady woods on the Mekong Yong-chiang divide. Teng-yueh-Talifu-road. Lat. 25° 15′. Alt. 7–9000 ft. September 1903." G. Forrest. No. 916.

5. **Rubus polytrichus,** Franch. (nec Progel), in Plant. Delav., p. 204.

R. Chaffanjoni, Léveillé et Van. seems to be not different.

"Prostrate shrub of 1–3 ft. Flowers pure white. Shady situations in rhododendron scrub on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 8–10,000 ft. August–October 1906." G. Forrest. No. 4400.

6. **Rubus hypopitys,** Focke. Sp. nov. Plate lxiv.

Ex affinitate *R. pacifici,* Hance.

Humilis et, teste collectore, semi-procumbens. Radix lignosa caudice incrassato coronata. Caulis fertilis e caudice

enatus, simplex, erectus, cum petiolis canescenti-tomentosus et aculeolis minutis instructus. Stipulae liberae, profunde fissae. Folia sat longe (ca. 4 cm.) petiolata, malvacea, sinu lato aperto cordata, vix longiora quam lata, triloba vel incisurâ superficiali loborum lateralium subquinqueloba, lobis non lobulatis obtusis crenato-dentatis; terminalis fere semiorbicularis, supra parce, subtus densius pilosus. Flores in specimine suppetente duo approximati, terminales majusculi (diam. fere 3 cm.); sepala externa apicem versus irregulariter incisa; styli filiformes, stamina superantes. Gynophorum globosum, hirsutum, post fructum maturum carptum stipite longo piloso elevatum persistens.

"Semi-procumbent plant of 1–2 ft. Damp, shady situations in pine woods. Western slope of the Mekong valley on the Teng-yueh-Talifu-road. Lat. 25° 15′. Alt. 8–9000 ft. September 1906." G. Forrest. No. 1908.

7. **Rubus sp.**—

R. corchorifolio, Linn. f., affinis. an *R. otophorus*, Franch., in Plant. Delav. (1889), p. 204?

Specimen imperfectum.

"Shrub of 2–3 ft. Flowers white. Amongst scrub on the western slope of the Mekong valley. Lat. 25° 15′. Alt. 6000 ft. April 1906." G. Forrest. No. 5021.

8. **Rubus Delavayi,** Franch., in Plant. Delav. (1889), p. 205.

"In pine forests on the divide between the Hoching and the Lichiang valleys. Lat. 26° 45′. Alt. 8–10,000 ft. August 1906." G. Forrest. No. 129.

9. **Rubus lutescens,** Franch., in Plant. Delav. (1889), p. 206.

"Small shrub of 9–12 inches. Flowers pale canary yellow. Grassy openings in rhododendron forest on the eastern flank of the Lichiang Range. Lat. 27° 18′. Alt. 10–11,000 ft." G. Forrest. No. 2329.

10. **Rubus pungens,** Cambess., in Jacquem. Voy., Bot., p. 48, t. 59.

"Shrub of 4–8 ft. Flowers white. Open, rocky situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40′ N. Alt. 8–10,000 ft. July–August 1906." G. Forrest. No. 4401.

"Shrub of 3–6 ft. Open situations amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 10–11,000 ft. August–September, 1906." G. Forrest. No. 4404.

11. **Rubus stimulans,** Focke. Sp. nov. Plate lxv.

Frutex 1–2 m. altus; suppetunt duo rami florentes, quorum unusquisque folia perfecta 4 cum uno floribus immixto minore et flores 5 fert. Aculei compressi longi et glandulae stipitatae breves copiose in ramo, petiolis pedunculis calycibusque obvii. Rami subangulati, 20–23 cm. longi, cum petiolis pedunculisque pubescentes; folia pinnato-quinata, cum petiolis ca. 8–12 cm. longi; petioli supra late sulcati; stipulae petiolares, lineares vel lineari-lanceolatae; foliola tenuia, approximata, inaequaliter grosse et argute serrata vel subincisa, supra breviter pilosa, subtus appresse cano-tomentosa et in nervis aciculata; terminale e basi saepe truncatâ vel emarginatâ ovatum acuminatum, ca. 5 cm. longum, 4 cm. latum; lateralia sessilia, oblique ovata, acuta. Flores 2–3 in apice rami conferti et 2-3 magis distantes axillares, nutantes, expansi diam. fere 3 cm. (praeter aristas sepalorum), in statu juvenili fere campanulati; cupula pelviformis, sepala ovato-lanceolata, mucronata vel aristata, externe cano-tomentella et aciculata. Petala obovata, sepalis (aristâ exceptâ) fere aequilonga, alba. Stamina fere uniseriata, filamentis inferne paullulum compressis. Carpella numerosa, glabra, stylis filiformibus.

"Shrub of 4–8 ft. Flowers white. Amongst scrub in thickets on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 8–10,000 ft. June–July 1906." G. Forrest. No. 4398.

12. **Rubus trijugus,** Focke. Sp. nov. Plate lxvi.

Rami vetusti arcuati, teretes, glabri, inermes, spadicei, nitentes. Rami floriferi usque ad apicem foliosi, floribus paucis terminati, puberuli, aculeis parvis sparsis instructi, 10–12 cm. longi; folia plurima septenato-pinnata (in singulis foliola 5 vel 9), cum petiolis 12–18 cm. longa; petioli pubescentes, aculeis falcatis armati, supra sulcati; stipulae breves, subulatae; foliola membranacea, inaequaliter grosse serrata et subincisa, supra strigoso-pilosa, subtus cano-tomentosa; terminale paullo, majus, ca. 5·0 cm. longum, 3·5 cm. latum, ovatum, acuminatum, lateralia subsessilia, oblique ovata, acuta. Flores 3–4, insertioni folii supremi approximati, expansi diam. fere 2 cm., unicus interdum ad axillam folii penultimi. Pedunculi fere 1 cm. longi, pubescentes, inermes; calyx cano-virescens, inermis, cupulâ pelvi-formi, sepalis triangulari-lanceolatis, in flore patentibus;

petala elliptica, unguiculata, suberecta, sepalis paullo longiora, alba.

"Shrub of 3–6 ft. Branches arched, spinous. Main stem smooth. Flowers white. Grassy openings in mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 10′. Alt. 9–10,000 ft. June 1906." G. Forrest. No. 2303.

13. **Rubus biflorus,** Hamilt. Franch., in Plant. Delav. (1889), p. 207.

"Spinous shrub of 4–8 ft. Branches arched. Flowers white. Fruit large, yellow, edible. Open, shady situations on margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20′. Alt. 11,000 ft. June 1906." G. Forrest. No. 2453.

In hac plantâ interdum aciculi pauci in calycibus occurrunt.

f. **parce glanduligera.**

"Shrub of 3–6 ft. Flowers white. Dry, shady situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12′. Alt. 10–11,000 ft. May 1906." G. Forrest. No. 2123.

14. **Rubus alexeterius,** Focke. Sp. nov. Plate lxvii.

Frutex 1–2 m. altus, ramis arcuatis. Rami vetusti teretes, glabri, aculeis validis e basi latâ anguste lanceolatis deflexis armati. Rami fertiles breves, usque ad pedunculum terminalem fere 3 cm. longi, villosi, aculeis subulatis vel aciculis armati, folia 2–4 ferentes. Folia ternata, supremum saepe simplex et profunde trifidum; petioli villosi, parce aciculati; stipulae breves, subulatae; foliola parva, grosse et in parte anteriore inciso-serrata, supra pilosa, subtus cano-tomentosa; terminale breviter (0·5–1·0 cm.) petiolulatum, rhombeum, acutum, 4–5 cm. longum, 2·0–3·5 cm. latum; lateralia sessilia, oblique oblonga. Flores 1–4, praeter terminalem singuli axillares, inflorescentiam laxam paucifloram efformantes; pedunculi stricti, villosi, crebre aciculati, 1–3 cm. longi; calyx vulgo clausus, elongatus, ad 2 cm. longus; cupula pelviformis, praecipue fundo densissime aciculata; sepala inaequalia, subfoliacea, lanceolata, parce aciculata, apicem versus laevia, sub anthero, ut videtur, per breve tempus patentia, mox erecta, conniventia et fructum immaturum arcte involucrantia. Petala lata, verosimile subrotunda, sepalis breviora, alba. Fructus (teste Forrest) magni, lutei, edules.

"Spinous shrub of 4–7 ft. Branches arched. Flowers white. Fruit large, yellow, edible. Shady, rocky situations in pine

forests on the eastern flank of the Lichiang Range. Lat. 27° 20′. Alt. 11,000 ft. June 1906." G. Forrest. No. 2452.

15. **Rubus stans,** Focke. Sp. nov. Plate lxviii.

Caules (turiones) vetusti erecti, ca. 1 m. alti, copiose pilosi glandulosique, aculeis validis lanceolatis patentibus (nonnullis interdum sursum inclinatis) armati. Rami, fertiles erecto-patentes, fere 5 cm. longi, dense villosi glandulosique, aculeati, folia conferta ferentes. Folia breviter (0·5–1·5 cm.) petiolata, ternata; petioli petiolulique villosi, glandulosi, aculeati; stipulae lineares; foliola lata, suborbicularia (diam. fere 2 cm.), grosse crenato-dentata, glanduloso-ciliata, supra dense pilosa, subtus nervis prominentibus rugosula, villosa, glandulosa, virentia; terminale breviter (0·5 cm.) lateralia vix petiolulata. Flores pauci terminales, breviter pedicellati, et praeterea saepe unicus distans, axillaris; omnes nutantes, expansi diam. ca. 2 cm., calyx villosus, glandulosus, inermis, cupulâ pelviformi, sepalis lanceolatis fusco-purpurascentibus, post anthesin patentibus; petala, ut videtur, late elliptica, purpurea; stamina uniseriata, erecta, post anthesin conniventia, filamentis inferne compressis.

"Erect plant of 3–4 ft. Flowers rose red. Open, stony situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 10′. Alt. 10–11,000 ft. May 1906." G. Forrest. No. 2286.

16. **Rubus micranthus,** D. Don. Prodr., p. 235.

"Spreading spinous shrub of 6–8 ft. Branches arched. Flowers magenta rose. Open, stony situations at the base of the eastern flank of the Lichiang Range. Lat. 27° 10′. Alt. 9–10,000 ft. June 1906." G. Forrest. No. 2353.

"Shrub of 4–6 ft. Flowers rose pink. Open situations in cane brakes in side valleys of the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 9–11,000 ft. July–August 1906." G. Forrest. No. 4405 ex pte.

17. **Rubus foliolosus,** D. Don. Prodr., p. 256. Franchet, in Plant. Delav. (1889), p. 208 (an *R. chinensis*. Thunbg. ?).

Tali Range. Lat. 27° 10′. G. Forrest. No. 4405 ex pte. Cf. sub. *R. micrantho*.

18. **Rubus ellipticus,** Sm., var. **obcordatus,** Franch., in Plant. Delav. (1889), p. 206.

"In thickets on the margin of pine forests in the Sungkwei valley. Plant of 10–20 ft. Lat. 26° 30′. Alt. 90,000 ft. September 1904." G. Forrest. No. 291.

19. **Rubus subornatus,** Focke. Sp. nov. Plate lxix.

Frutex ramis arcuatis, 1–2 m. altus; turiones hornotini? Rami vetusti teretes, glabri, hinc inde aculeis e basi latâ lanceolatis instructi. Rami fertiles, praeter flores magnos, illis *R. idaei* admodum similes, teretes, inferne parce, superne densius pilosi, aculeis falcatis armati. Folia ternata, apicem versus in bracteas abeuntia; petioli laxe villosi, aculeis uncinatis armati; stipulae anguste lineares; foliola membranacea, utrinque fere 6–9 nervia, grosse inciso-serrata, supra puberula, glabrescentia, subtus appresse albo-tomentosa; terminale e basi saepe cordatâ ovatum vel subtrilobum, fere 5–6 cm. longum, lateralia subsessilia, oblonga. Flores in ramis longis 6–10, in brevibus 1–3, nutantes, expansi diam. 2·5–3·0 cm., praeter terminalem in axillis bractearum vel saepius foliorum superiorum, saepissime solitarii, rarius bini; pedunculi 1–3 cm. longi, parce vel crebre aculeati; calyx externe cano-tomentellus; cupula plana, sepala triangulari-lanceolata, mucronata vel aristata, post anthesin patentia; petala obovata, sepalis, praeter mucronem, fere aequilonga, roseo-purpurea; stamina fere uniseriata, post anthesin patentia, filamentis longis glabris; carpellorum capitulum fundo nudum; carpella parce vel dense pilis strictis hispida; styli longi, filiformes.

Rami florentes habitu illis *R. idaei* similes, sed flores multo majores.

a. **forma parce vel non glandulosa.**

"Shrub of 4–6 ft. Flowers purplish rose. Rocky situations on the margins of cane-brakes on the eastern flank of the Tali Range. Lat. 25° 40′. Alt. 9–11,000 ft. August 1906." G. Forrest. No. 4402.—Eglandular.

"Spinous shrub, branches arched, of 4–7 ft. Flowers rose carmine. Grassy openings in mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 10′. Alt. 9–10,500 ft. June 1906." G. Forrest. No. 2302.—Glands rare.

b. **var. melanadenus.**

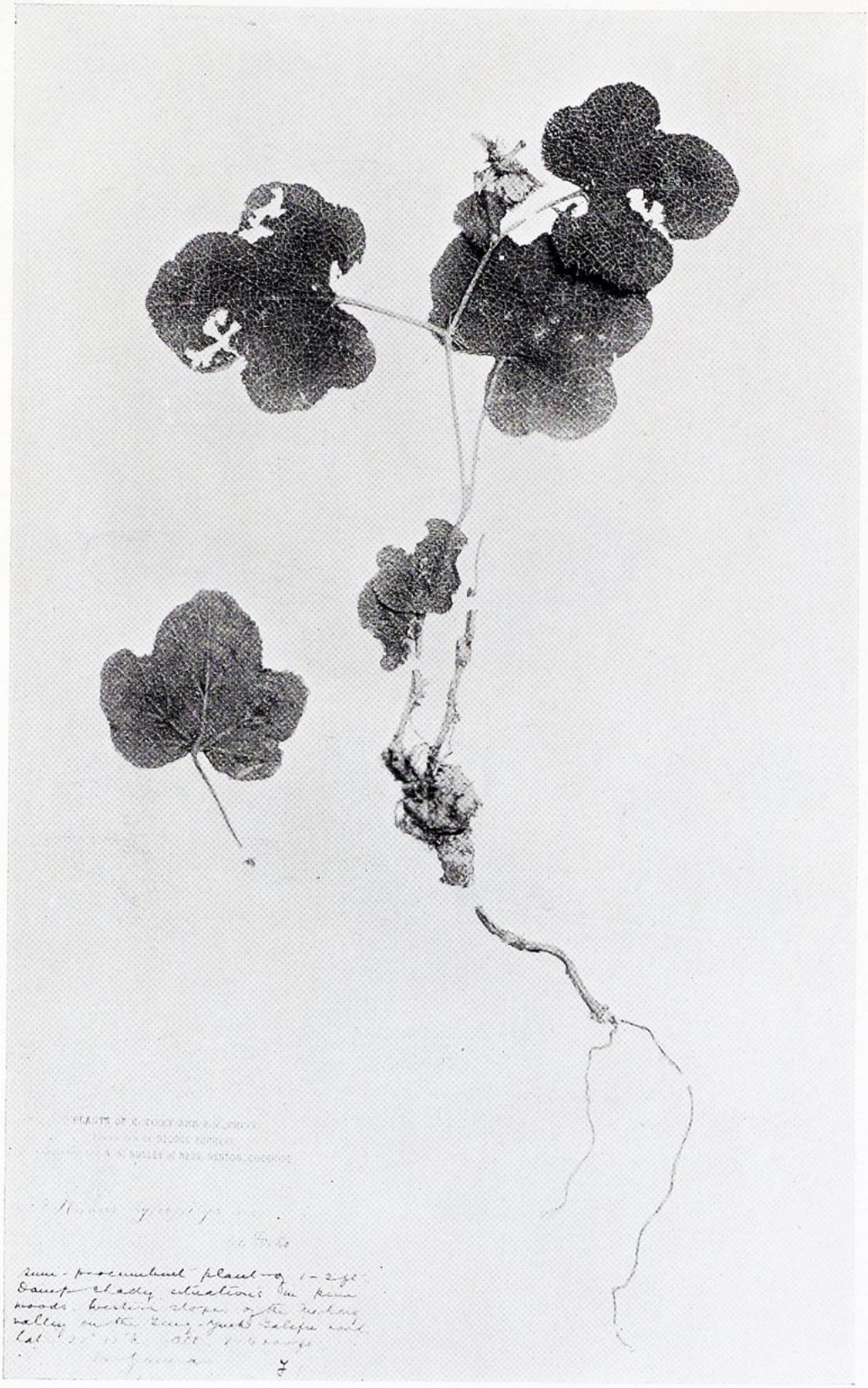
Rami floriferi breves, praecipue in partibus superioribus copiose nigro-glandulosi.

"Shrub of 3–5 ft. Flowers rose red. Dry, shady situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12′. Alt. 10–11,000 ft. May 1906." G. Forrest. No. 2124.

LIST OF PLATES.

Illustrating Dr. W. O. Focke's Paper on Species of Rubus collected by George Forrest in Yunnan and Eastern Tibet.

Rubus major, *Focke*.

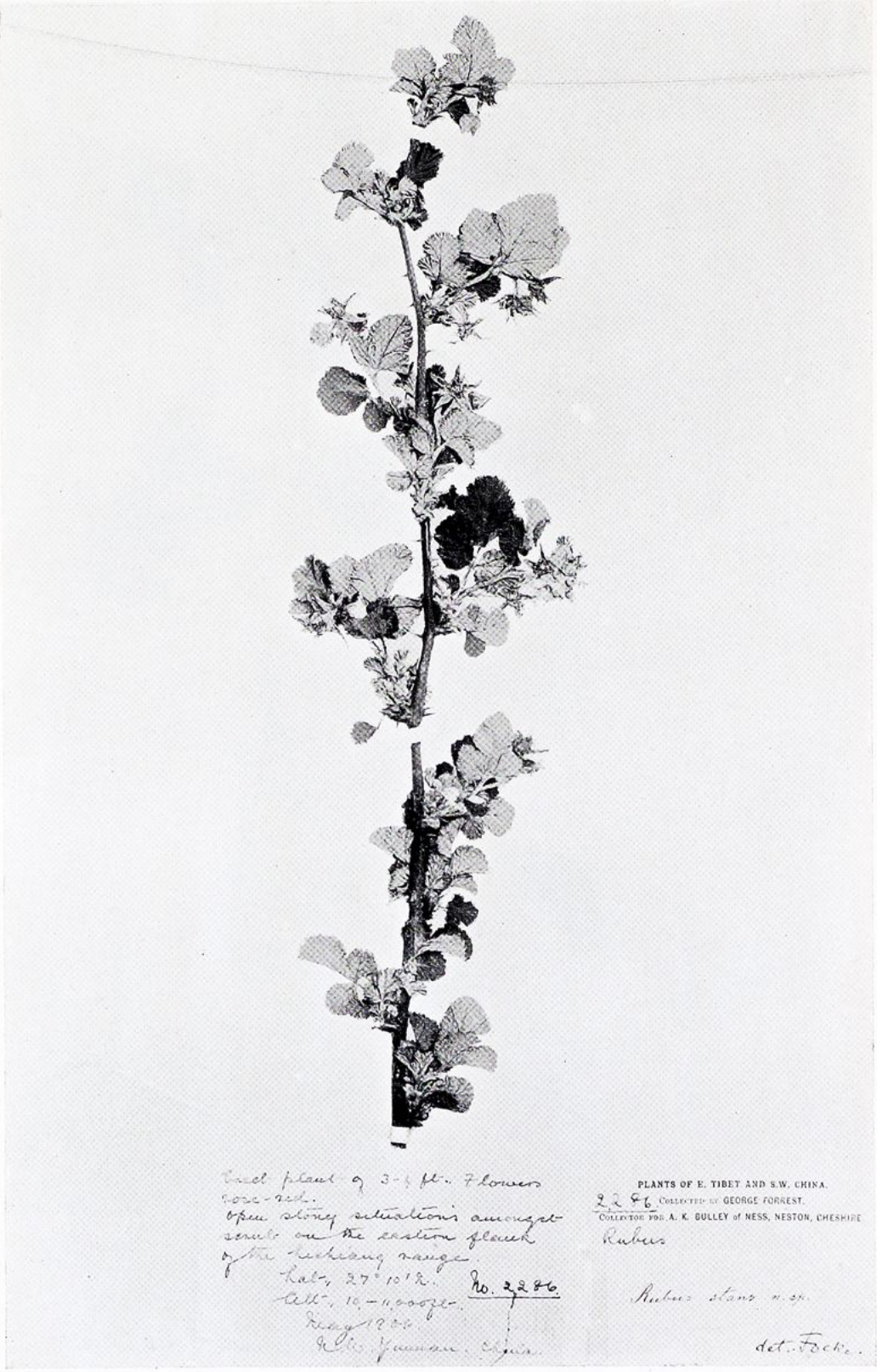


Rubus hypopitys, *Focke.*

Rubus stimulans, *Focke*.

Rubus trijugus, *Focke.*

Rubus alexeterius, *Focke.*



Rubus stans, *Focke.*

Rubus subornatus, *Focke*.