

Primulae Novitates Nonnullae.

BY

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THE descriptions included are :—

- Primula aequalis*, Craib, p. 205.
- „ *erythrocarpa*, Craib, p. 206.
- „ *orestora*, Craib et Cooper, p. 207.
- „ *paucifolia*, Watt MSS., p. 208.
- „ *platycrana*, Craib, p. 209.

Primula (§ Denticulata) *aequalis*, Craib, a speciebus aliis himalaicis huius gregis calyce corollae subaequalto facile distinguenda.

Rhizoma breve, satis crassum, radices elongatas crassas numerosas emittens; squamae sub anthesin persistentes, exteriores oblatae, interiores plus minusve oblongae, omnes inferne integrae, planae, superne dentatae, margine revolutae, summo apice breviter acuminatae. Folia sub anthesin oblongo-oblancoolata vel oblongo-obovata, petiolo incluso ad 6.5 cm. longa et 1.5 cm. lata, infrutescentia oblongo-oblancoolata, ad 12 cm. longa et 2.8 cm. lata, apice rotundata vel obtusa, costa in hydathodum excurrente apiculata, basi in petiolum alatum basi vaginantem vix distinctum attenuata, sicco chartacea, pagina utraque pilis brevibus capitatis farinipotentibus subsparsae instructa, pagina superiore marginem versus et inferiore ad costam nervosque et margine pilis longioribus transverse septatis instructa, nervis lateralibus utrinque circa 16 supra conspicuis subtus prominentibus saepissime rectis inferioribus patulis vel subpatulis superioribus erecto-patentibus bene intra marginem furcatis ramulis in dentes excurrentibus, margine denticulata, dentibus omnibus hydathodo apiculatis. Scapi saepissime solitarii, rarius gemini, inflorescentes 9–12 cm., infrutescentes ad 15 cm. alti, superne puberuli et plerumque tenuiter farinosi; bractaeae involucrales lineari-lanceolatae, obtusae vel subacutae, basi gibbosae, calycis tubum superantes, plerumque circa 8 mm. longae, virides vel apicem versus purpurascentes, ut calycis lobi ciliatae, dorso puberulae. Calyx 8–9 mm. longus; lobi oblongi vel oblongo-lanceolati, obtusi vel subobtusiusculi, 6.5–7 mm. longi,

[Notes, R.B.G., Edin., Nos. XLIX–L, July 1918.]

2 mm. lati, facie utraque cum tubo extra et superne intra pilis capitatis farinipotentibus sparse instructi, pilis capitatis transverse septatis longiusculis ciliati. Corollae tubus 7.5 vel 9.5 mm. longus, extra superne pilis capitatis sparse instructus, exannulatus, supra stamina rugulosus, lobi obcordati, 5.5–6 mm. longi, 4.5–5.5 mm. lati, lobulis apice rotundatis 3 mm. longis 2.25 mm. latis. Antherae 1.75 mm. longae, loculis basi liberis et breviter apiculatis, in flore longistylis e calycis tubo parum exsertae, in flore brevistylis in calyce inclusae, filamentis vix 0.5 mm. longis, 0.5 mm. supra antherarum bases insertis. Stylus cum stigmatibus in flore longistylis 4.5 mm. longus, calyce brevior, in flore brevistylis 2 mm. longus, in stigma subglobosum apice truncatum gradatim expansus; ovarium 1.5 mm. altum, apice complanatum.

Sikkim:—Phallut, 11,000 ft., flr. 29.vi.14, fr. 29.vii.14, Cave (Hb. Edin.); ibid., 12,000 ft., flr. 28.v.11, Smith, 4595 (Hb. Edin.); ibid., 12,000 ft., flr. 31.v.02, Lace, 2263 (Hb. Calc.); ibid., 12,000 ft., flr. vi.88, King's Collector; Fahe-loungma, 12,000 ft., flr. 25.v.81, Watt, 5202 (Hbb. Edin., Kew.); Singaleelah, 11,000 ft., flr. 13.vi.92, Gammie, 73 (Hb. Calc.); Jongri, King's Collector (Hb. Calc.); Sikkim, loco haud indicato, 11,000 ft., Tanner (Hb. Calc.) et King's Collector (Hb. Calc.).

Primula (§ Denticulata) erythrocarpa, Craib, species foliorum indumento, scapo purpurascente distinguenda.

Folia oblongo-spatulata vel oblongo-elliptica, apice rotundata, costa excurrente breviter apiculata, basi in petiolum plus minusve distinctum alatum attenuata, sub anthesin saepius 5–6 cm. longa et 2 cm. lata, autumnalia ad 12 cm. longa et 5 cm. lata, pagina superiore viridia, pilis breviusculis transverse septatis sparse instructa, inferiore pallidiora, ad costam nervosque pilis longiusculis rectis transverse pluri-septatis tecta, praeterea pilis brevibus farinipotentibus capitatis luteo-viridibus sparse ornata, nervis lateralibus in foliis autumnalibus circa 20 rectis vel subrectis angulo circa 75° e costa ortis bene intra marginem ramosis ramulis in dentes excurrentibus supra parum impressis subtus prominentibus, nervulis subtus prominulis, margine ciliata, denticulata, dentibus hyalothodo apiculatis; petioli basi vaginantes, 1–1.5 cm. longi. Scapi rarius solitarii, ad 35 cm. alti, praesertim superne purpurascentes, sparsim albo-farinosi; bractae involucales variabiles, lanceolatae vel late lanceolatae, acutiusculae vel obtusae, basi saepe subito amplatae, ima basi gibbosae, 3–5 mm. longae, sparsim albo-farinosae. Calyx 5.5 mm. longus, viridis vel lobis apice purpurascentibus, sparse albo-farinosus; lobi oblongo-lanceolati, obtusi, 4 mm. longi, 1–1.25 mm. lati, utrinque pilis brevibus

farinipotentibus et margine pilis longiusculis transverse pluri-septatis capitatis instructi. Corollae tubus 7.5–9 mm. longus, superne extra pilis farinipotentibus instructus, exannulatus, intra supra stamina rugulosus, lobi oblongo-cuneati, 7.5 mm. longi, 6.5 mm. lati, lobulis apice rotundatis, sinu basi acuto, disco circa 1 mm. lato. Antherae 1.75 mm. longae, loculis basi liberis breviter apiculatis, in flore longistylis in calyce omnino inclusae, in brevistylis omnino exsertae, filamentis 0.5 mm. longis 0.5 mm. supra antherarum bases affixis. Ovarium globosum vel ovoideo-globosum, apice complanatum, 1.5 mm. altum; stylus stigmatibus pyriforme apice truncato concavo incluso in flore longistylis 4.5 mm. longus, calyce parum longior, in flore brevistylis 2 mm. longus, calyce brevior. Capsula saltem apice cito plerumque rubescens.

Cult. Hort. Bot. Reg. Edin. e seminibus bhutanicis. R. E. Cooper. 3828.

Primula (§ Denticulata) orestora, Craib et Cooper, species nova *P. caucasicam*, C. Koch, simulans, sed ab illa longe distans, foliorum indumento, floribus sessilibus, calyce haud pergamentaceo inter notas alias valde distincta.

Herba rosulata, pygmaea, rhizomate parvo per annos 2–3 persistente foliorum praeteritorum vestigiis siccis oblecto radices albidas plurimas emittente, foliis floribusque coetaneis. Rosula hornotina plana, squamis vaginalibus paucis longe ovatis vel oblongis integris in folia adulta pedatim transeuntibus cincta. Folia petiolata, ad 2.2 cm. longa, spatulata vel oblongo-spatulata; lamina 1.2–1.5 cm. longa, 8–12 mm. lata, elliptica vel elliptico-oblonga, apice rotundata, costa in hydathodum excurrente mucronata, margine revoluta, mox plana, argute regulariter vel subregulariter serrato-denticulata, denticulis hydathodo terminatis, basi cuneatim in petiolum circa 1 cm. longum ad 3 mm. latum costa mediana conspicua et ala membranacea praeditum attenuata, cum petiolo utrinque pilis brevibus glandulis farini-potentibus copiose vestita, supra convexa, pallide viridia, efarinosa, subtus concava dense albidofarinosa. Scapus 3–9 cm. altus, superne dense albo-farinosus, flores sessiles erectos paucos (ad 9) in inflorescentiam capituliformem dispositos gerens; bracteae extimae erectae vel adscendentes, a basi lanceolatae, acutae, circa 5 mm. longae, 2 mm. latae, virides, apice nunc atropurpureae, utrinque reticulato-venulosae, venatione elevata, glandulis farini-potentibus utrinque vestitae, intra albo-farinosae, extra sparse farinosae, basi extus pulvinatim incrassatae; pedicelli nulli. Calyx anguste campanulatus vel campanulatus, mox basi inflatus, circa 6 mm. longus, extus glandulis farini-potentibus oblectus,

viridis, ultra medium 5-fissus, tubo 5-nervio intus glabro, lobis lineari-lanceolatis acutis 3-5-nerviis intus dense albo-farinosis apice atropurpureis. Corollae tubus flavido-albidus, cylindricus, supra stamina ampliatus, in flore brevistylo circa 11 mm. longus, in flore longistylo circa 9 mm. longus, extus plus minusve farinosus, intus transverse rugosus, fauce exannulatus; limbi plani discus vix 1 mm. latus, lobi obovati, circa 4 mm. longi, bifidi, segmentis subdivaricatis. Stamina floris brevistyli infra medium tubi corollini ultra calycem inserta, floris longistyli prope basem tubi corollini supra ovarium inserta in calycis tubo inclusa, filamentis brevissimis, antheris angustis circa 1.5 mm. longis. Ovarium parvum circa 1 mm. longum, vertice stylopodio conspicuo coronatum; stylus tenuis, brevis vix 1.5 mm. longus, tubo calycis brevior, longus circa 3.5 mm. longus lobis calycinis dimidio brevior; stigma ovoideum, minutum.

Bhutan:—Ghassu Pass. Alt. 13,000 ft. Flower blue, in open peaty turf on hillside. R. E. Cooper. 3837. 3rd May 1915.

Thibet:—Hill behind Tangu Bungalow. Alt. 15,500-16,000 ft. Younghusband. T. 65. 5th July 1903. Herb. Calc.

Phari Plain and the Upper Chumbi Valley on the way to Phari. Walsh. 13 et 138. End of May 1904. Herb. Calc.

The abundant material—unfortunately none in fruit—of this plant sent by Mr. R. E. Cooper has enabled me to make sure of the identification of the several specimens collected during the Thibetan Frontier Expedition which are cited above. The Thibetan specimens in the Calcutta herbarium are excellent but few in number, and I hesitated about dissecting any of them, but Cooper's specimens, which are without doubt the same plant, make this unnecessary. The Thibetan plants are labelled *P. farinosa* var. *caucasica*, Regel.

Primula (§ Denticulata) paucifolia, Watt Mss., a speciebus aliis foliis paucioribus, calyce pro corollae longitudinem elongato cognoscenda.

Radices numerosae, crassae; squamae sub anthesin rarius omnino delapsae, exteriores breves lataeque, brunneae, rigidae, interiores longiores, tenuiores, pallide stramineae, intimae folia simulantes, ad 3.5 cm. longae et 0.7 cm. latae, omnes apice denticulatae et haud rarius dorso sulphureo-farinosae. Folia oblanceolata, spatulato-oblanceolata vel interdum oblongo-oblanceolata, apice obtusa rotundatave, basi in petiolum attenuata, usque ad 11 cm. longa et 2.2 cm. lata, chartaceo-membranacea, pagina utraque pilis brevibus capitatis farini-potentibus praetereaue interdum pilis longioribus transverse septatis praesertim pagina superiore marginem versus et inferiore ad costam

nervosque laterales instructa, margine pilis brevibus vel satis longis capitatis ciliata, nervis lateralibus utrinque numerosis primo patentibus mox satis obliquis pagina utraque conspicuis intra marginem ramosis ramulis in hydathados excurrentibus; petioli conspicue alati, basi vaginantes, 1.5-4 cm. longi. Scapi solitarii, 6-20 cm. alti, pilis brevibus farini-potentibus plus minusve puberuli, apice sulphureo-farinosi; bractee involucrales quoad longitudinem variabiles, interdum calyce distincte breviores, interdum calycem aequantes; flores dense aggregati, breviter pedicellati. Calyx circa 7 mm. longus, lobis circa 0.75 mm. latis apicem versus attenuatis margine ciliolatis, tubo circa 2 mm. longo. Corollae tubus floris longistyli calyce paululo longior, floris brevistyli calyce saltem dimidio longior, intra haud rugulosus, exannulatus; limbi lobi 4 mm. longi, 2.5 mm. lati, vix ad medium bifidi. Stamina in flore longistylis in calyce omnino inclusa, in flore brevistylis omnino exserta, in corollae tubo bene inclusa; antherae vix 2 mm. longae, filamentis circa 0.5 mm. longis 0.5 mm. supra antherarum bases affixis suffultae. Ovarium 1.5 mm. altum, stylo longo stigmate vix 1 mm. longo incluso 4.5 mm. longo. Capsula calycis tubo subaequalia vel eo paululo longior.

P. denticulata, Sm., var. *paucifolia*, Hook. f., Fl. Brit. Ind., iii, p. 486; Pax in Engler Bot. Jahrb., x, p. 193; id. in Engler Pflanzenr. Primul., p. 91.

Kashmir:—Poosiana. 8000-9000 ft. C. B. Clarke. 28,809, 28,816. Flr. et fr. 6 July 1876.

Primula (§ Denticulata) platycrana, Craib, species nova ab affinioribus inflorescentia apice plana bene distincta.

Folia oblanceolata vel oblongo-oblanceolata, inferne in petiolum basi late vaginantem attenuata, ad 12 cm. longa et 3.5 cm. lata, coriacea, pagina utraque primo bullata, superiore demum multo minus bullata, pilis brevibus vel longiusculis septatis glanduloso-capitatis persistentibus supra marginem versus tantum infra omnino tecta, efarinosa, infra pallidiora, costa inferne ampliata, nervis lateralibus utrinque 16-20 rectis angulum circa 45° cum costa efficientibus furcatis supra parum impressis infra valde prominentibus, margine recurvo angustius subregulariter denticulata, petiolo rubescente 1.5-2 cm. longo primo recto mox apice recurvo suffulta. Scapus 40 cm. altus, circa 3 mm. diametro, praesertim superne farina pallida albida tectus; involucri bractee exteriores circa 7, acuminatae vel caudato-acuminatae, summo apice obtusae, 5-7 mm. longae, basi 5 mm. latae, utrinque farinosae. Calyx sub anthesin 7 mm. longus, lobis 5 mm. longis, infructescens 8 mm. longus, utrinque farinosus, lobis 5 mm. longis margine involutis. Corolla lilacina,

luteo-oculata; tubus 9 mm. longus, exannulatus, supra stamina rugulosus; limbus 16 mm. diametro, oculo 4-5 mm. diametro, lobis 5 mm. longis interdum bilobatis interdum varie dentatis. Antherae 0.5 mm. longae, breviter apiculatae, in flore longistylis circa 3 mm. supra corollae tubi basem sitae, in calyce inclusae. Stylus fere 6 mm. longus, corollae tubi apicem vix attingens. Capsula calycis tubo parum longior.

Cult. Hort. Bot. Reg. Edin. e seminibus bhutanicis a Cooper (No. 2367) lectis. Floruit iv.17.