

New Species of *Primula*
belonging to the *Petiolaris-Sonchifolia* Section.

BY

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THE eleven species described here are :—

- P. Boothii*, Craib.
- P. bracteosa*, Craib.
- P. Cunninghamii*, King Mss.
- P. deuteronana*, Craib.
- P. gracilipes*, Craib.
- P. hupehensis*, Craib.
- P. irregularis*, Craib.
- P. saxicola*, Craib.
- P. scapigera*, Craib.
- P. Scullyi*, Craib.
- P. sessilis*, Royle Mss.

***Primula Boothii*, Craib.**

Rhizoma rectum, circa 1 cm. crassum, radices numerosas elongatas gerens. Folia exteriora magis minusve elliptica, petiolo angustius alato ad 6 cm. longo suffulta, mediana saepissime late spatulata vel elliptico-spatulata, exterioribus parum minora, usque ad 6 cm. longa et 4.5 cm. lata, petiolo distincte alato 4-5 cm. longo suffulta, interiora gradatim decrescentia, spatulata vel oblonga, petiolo late alato vix distincto suffulta vel subsessilia, omnia apice rotundata, membranacea vel chartaceo-membranacea, margine irregulariter plus minusve argutius denticulata, pagina utraque glabra, nervis lateralibus utrinque 5-7 pagina utraque conspicuis inferioribus satis obliquis omnibus rectis vel subrectis bene intra marginem ramosis. Scapus brevissimus vel fere 2 cm. altus, flores usque ad 25 gerens; bracteae e basi 3 mm. lata longe acuminatae, acutiusculae, 5-6 mm. longae, glandulis capitatis ciliolatae; pedicelli 1.5-5 cm. longi, primo glandulis capitatis densius puberuli, demum glabrescentes. Calyx 6-9 mm. longus, dorso glandulis capitatis puberulus, intra glaber; lobi oblongi vel oblongo-lanceolati, apice breviter acuminati, acutiusculi, interdum tridentati vel latere uno tantum dentati, 3.5-4 mm. longi, circiter 1.75 mm. lati, glandulis capitatis densius ciliolati. Corolla extra saltem

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juventute glandulis capitatis puberula; tubus floris brevistylis 13 mm. longus, longistylis 9 mm. longus, intra glaber; lobi obovato-cuneati, 12 mm. longi, 10 mm. lati, apice sinuato-lobulati vel trilobulati et lobulis iterum lobulatis. Antherae 2.25 mm. longae. Ovarium 1.5 mm. altum, stylo stigmatibus inclusis 6.5 mm. vel 12.75–14 mm. longo.

Bhutan, Chardwar, Booth (?) in Herb. Watt, 2179. Meru mountains, covering the hills and Tengepane, Booth (?). No collector is indicated for these specimens either in Herb. Watt or in Herb. Calcutta, but probably they were collected by Booth.

***Primula bracteosa*, Craib.**

Rhizoma tenue vel saepius crassum, radices elongatas emittens. Folia sub anthesin spatulata vel obovato-spatulata, apice rotundata, basi in petiolum late alatum angustata, usque ad 8 cm. longa (petiolo inclusis), 2.5 cm. lata, posteriora (ex alabastro axillari evoluta) ovata vel oblongo-ovata, apice rotundata, basi truncata vel cordata, usque ad 6.5 cm. longa et 5 cm. lata, petiolo angustius sed distincte alato suffulta, omnia chartacea, pagina superiore et etiam inferiore ad costam sparse glanduloso-puberula, nervis lateralibus utrinque 6–7 bene intra marginem furcatis pagina superiore saepissime subconspicuis inferiore prominulis, nervis transversis fere semper obscuris, margine denticulata, dentibus nervis excurrentibus breviter acuminatis. Scapus frutescens folia posteriora subaequans vel ea duplo superans; bractae exteriores normales virides, e basi satis lata fere semper longe acuminatae, acutae vel subobtusae, 3–10 mm. longae, glanduloso-puberulae et ciliatae, interiores omnes vel saltem nonnullae in folia late ovata vel suborbicularia ad 2.5 cm. diametro petiolo ad 4.5 cm. longo suffulta expansae; pedicelli usque ad 4.5 cm. longi, glanduloso-puberuli. Calyx extra glanduloso-puberulus, 6.5–7 mm. longus, lobis ovatis vel oblongo-ovatis breviter acuminatis interdum apicem versus denticulatis vel sublobatis 3.5–4 mm. longis basi circa 2.5 mm. latis glanduloso-ciliatis. Stylus stigmatibus inclusis in flore longistylis 9 mm. longus. Capsula depresso-globosa, in calycis tubo inclusa.

Bhutan, Tongsa, Yato-la, in moss by tree bases in shady forest, 10,000 ft., Cooper, 3981; Timpu, Duké-la, sandy soil in shade of light wet forest, 9000 ft., Cooper, 3917; ascent to Woolooka, 8000–9500 ft., Griffith, K. D., 3514, pro parte; Griffith, K. D., 2314.

***Primula Cunninghamii*, King Mss.**

Herba nana. Folia spatulata, oblongo-spatulata vel oblongo-obovata, apice rotundata, basi in petiolum alatum vix dis-

tinctum attenuata, usque ad 11 cm. longa et 2.8 cm. vel etiam 4 cm. lata sed saepissime multo breviora et angustiora, submembranacea vel chartaceo-membranacea, nervis lateralibus utrinque 8-12 rectis vel subrectis bene intra marginem ramosis, nervis eorumque ramulis in dentes excurrentibus, margine argute eroso-denticulata, matura pagina utraque glabra, efarinosa, margine minute glanduloso-ciliata. Scapus haud evolutus; flores numerosi, pedicellis corollae subaequilongis vel ea brevioribus puberulis primo parce farinosi mox efarinosi suffulti; bractae lanceolatae vel lineari-lanceolatae, circa 3 mm. longae. Calyx 5.5 mm. longus, utrinque puberulus, primo extra farinosus, lobis 4.5 mm. longis oblanceolatis acuminatis acutis ciliolatis. Corollae tubus 7.5-10 mm. longus, extra parce puberulus, haud annulatus; limbus 15.5-16.5 mm. diametro, lobis obcordatis 6 mm. longis 5.5 mm. latis, lobulis apice rotundatis. Antherae 1.25-1.5 mm. longae, in flore longistylis in calyce omnino inclusae, in flore brevistylis circa 5 mm. a tubi basi insertae. Ovarium depresso-globosum, 1 mm. altum, stylo stigmatibus magno globoso incluso in flore brevistylis vix 1 mm. longo et in flore longistylis 4 mm. longo.

E. Sikkim. Jaffrey's collector (type of King's species); Cunningham ann. 1874 et 1889; Cave, 7287; Gammie, 36; Sheraothang, 13,000 ft., Cooper, 969; Chumbi Thang, Ribu, 9; Changu, Cave; below Changu, 11,500 ft., Ribu et Rhomoo, 4601; Lingtoo and Gnatung, 11,000-13,000 ft., Pantling.

S. Tibet. Younghusband, 21; Gyantse to Phari, Walton.

According to the dates on the labels this species flowers from the end of September to November. One collection in flower was made also in January (Cave). In only one case (Cooper) is the colour of the flower—purple—and the habitat—gravel and turf—noted.

Primula deuteranana, Craib.

Folia oblongo-obovata vel oblongo-ovata, apice rotundata basi in petiolum alatum distinctum vel vix distinctum angustata, ad 2.7 cm. longa et 1.7 cm. lata, coriacea, sicco subviridia, glabra, juventute farinosa, mox efarinosa, costa satis crassa supra conspicua subtus prominente, nervis lateralibus utrinque 8-9 pagina superiore conspicuis vel subconspicuis inferiore prominentibus intra marginem furcatis, nervulis subtus interdum elevatis interdum subobscuris, margine argute denticulata, interdum sublobata. Scapus haud evolutus; pedicelli ad 2 cm. longi; bractae lineari-subulatae, circiter 5 mm. longae. Calyx 7.5 mm. longus, extra sparse glanduloso-puberulus, lobis oblongo-lanceolatis subacuminatis acutiusculis 4.5 mm. longis 1.5 mm. latis glandulis capitatis vel clavatis breviter ciliatis. Corolla

purpurea, luteo-oculata; tubus (fl. brevistyli) 15 mm. longus, extra parce puberulus, intra infra stamina minute puberulus, superne dense pilosus; lobi oblongo-obovati, apice saepius trilobati, 7 mm. longi, 4 mm. lati. Antherae breviter acuminatae, 1.75 mm. longae, filamentis paulo ultra 0.5 mm. longis suffultae. Ovarium subglobosum, circiter 1 mm. altum, placenta globosa breviter sed distincte stipitata; stylus 2.5 mm. longus stigmatē 0.6 mm. alto 0.5 mm. diametro.

Sikkim. Below Jongri, Pey-kiong-la, King's collector (fl. June 1887); Nye-gu-la, 13,000 ft., King's collector (fl. July 1888); Singaleelah, Sirkia-la, 14,000 ft., Watt, 5425. Sikkim, J. D. Hooker.

Primula gracilipes, Craib.

Rhizoma rectum, 2-8 mm. diametro, radices numerosas elongatas emittens. Folia saepissime oblongo-spatulata, apice rotundata obtusave, basi in petiolum plus minusve alatum angustata, rarissime subtruncata, 2-4.5 cm. longa, 1-2 cm. lata, membranacea vel chartaceo-membranacea, mox efarinosa nervis lateralibus utrinque 6-8 intra marginem ramosis pagina superiore conspicuis vel subconspicuis inferiore cum costa satis lata prominentibus, nervulis plerumque obscuris vel subobscuris, margine argute eroso-denticulata, exteriora petiolo plus minusve alato 2-3 cm. longo suffulta, interiora petiolo late alato vix distincto suffulta vel fere sessilia. Scapus haud evolutus; flores pedicellis gracilibus folia subaequantibus vel iis paulo brevioribus suffulti; bractae quoad formam variabiles, anguste deltoideae vel lineari-lanceolatae sed saepissime apice longius attenuatae, circiter 5 mm. longae. Calyx viridis, sub anthesin extra farinosus, 6.5-7 mm. longus; lobi oblongi, breviter vel longiuscule acuminati, acuti, 3-4 mm. longi, 1.25-2 mm. lati, glanduloso-ciliolati. Corollae tubus (floris brevistyli) 13 mm. longus; lobi late obovati vel late obovato-cuneati, apice acute tridentati, 9 mm. longi, 8.5 mm. lati. Antherae 2 mm. longae, filamentis 0.5 mm. longis. Ovarium 1.75 mm. altum, stylo stigmatē grandi capitato incluso 6 mm. longo.

E. Sikkim. Yeumthang, 11,000 ft., Cave; Begger, 12,500 ft., Cave; Changu, 12,000 ft., Smith, 3287; Dickchoo, 11,000 ft., C. B. Clarke, 27797B.

Primula hupehensis, Craib.

Folia late oblanceolata vel obovato-oblanceolata, apice rotundata, basi in petiolum latius alatum attenuata, usque ad 5.5 cm. longa (petiolo 5-12 mm. longo incluso) et 2.5 cm. lata, membranacea vel chartaceo-membranacea, pagina utraque

parce minutissime glanduloso-puberula vel subglabra, nervis lateralibus utrinsecus circa 6 rectis erecto-patentibus intra marginem furcatis pagina utraque conspicuis vel subconspicuis, margine argutius eroso-denticulata. Scapus 3-4 cm. longus, flores 4-8 gerens; bracteae lineari-lanceolatae, 4-4.5 mm. longae, glanduloso-puberulae; pedicelli 1.8-2.5 cm. longi, glanduloso-puberuli. Calyx extra densiuscule glanduloso-puberulus, intra glaber, 7.5-8 mm. longus, lobis 3-3.75 mm. longis 1.5-1.75 mm. latis glanduloso-ciliolatis. Floris brevistyli corollae tubus 11-12 mm. longus, lobi anguste obcordati, apice usque ad 2-2.5 mm. emarginati, 8.5 mm. longi, 5.5 mm. lati; tubus apice distincte annulatus. Antherae 2.75 mm. longae, annulum paululo superantes, filamentis brevibus suffultae. Ovarium globosum, 1.5 mm. diametro, stylo cum stigmate capitato calyce paulo brevior.

Hupeh, Fang, Henry.

***Primula irregularis*, Craib.**

Rhizoma rectum, simplex, crassum, radices satis longas emittens. Folia viva probabiliter patula vel subpatula, exteriora subelliptica, oblongo-elliptica vel elliptico-obovata, rarius ovata vel ovato-lanceolata, 4-9.5 cm. longa, 2.5-5.5 cm. lata, basi interdum subtruncata, saepius late cuneata, cuneata vel in petiolum angustata, petiolo alato usque ad 6 cm. longo suffulta, mediana spatulata, minora, petiolo multo breviora suffulta. interiora spatulato-oblonga vel oblonga, sessilia vel subsessilia, circa 2.5 cm. longa et 1.5 cm. lata, omnia apice rotundata, chartacea vel membranaceo-chartacea, pagina utraque parce glanduloso-puberula, mox subglabra, nervis lateralibus utrinque 6-7 supra conspicuis subtus prominulis rectis vel fere rectis intra marginem ramosis, nervulis pagina utraque conspicuis vel subconspicuis rarius fere obscuris, margine argute eroso-denticulata, rarius lobulata, lobulis denticulatis. Inflorescentia saltem juventute dense pallide luteo- vel sulphureo-farinosa; flores expansi folia interiora subaequantur vel iis paulo breviores, pedicellis dense glanduloso-puberulis suffulti; bracteae deltoideae, acuminatae, acutae, usque ad 11 mm. longae, indumento ut pedicelli instructae. Calyx 11.5 mm. longus, extra ut pedicelli glandulis capitatis vel clavatis dense tectus, intra parcius puberulus; lobi late oblongi, apice irregulares, rotundati, acuminati et obtusiusculi vel saepissime 3-lobulati, circa 4 mm. longi et 3 mm. lati, densius glanduloso-ciliolati. Corolla extra glanduloso-puberula; tubus 14 mm. longus, lobis late oblongo-obovatis apice sinuato-lobulatis 8 mm. longis 6.5 mm. latis. Antherae 2.5 mm. longae, filamentis brevibus suffultae.

Ovarium globosum, 1.75 mm. altum, stylo 4.75 mm. (floris brevistyli) longo, stigmatē 1 mm. longo.

W. Sikkim. Chowbhangin, Cave; Singaleelah, J. D. Hooker, 11,000 ft., Elwes in Herb. Clarke, 27,481.

***Primula saxicola*, Craib.**

Folia exteriora ovata, basi cordata vel truncata, usque ad 7.5 cm. longa et 6 cm. lata, petiolo basi vaginante 5–8 cm. longo suffulta, interiora spatulata vel elliptico-spatulata, basi cuneata vel attenuato-cuneata, 3–5 cm. longa, 1.5–3 cm. lata, petiolo plus minusve alato 3–4 cm. longo suffulta, omnia membranacea, sicca viridia, pagina utraque glabra, nervis lateralibus utrinque 6–7 plerumque rectis vel fere rectis et satis patulis intra marginem ramosis pagina utraque conspicuis, margine lobulata lobulis saepissime acute dentatis. Scapus haud evolutus; pedicelli petiolos longiores subaequantes vel saepius iis fere dimidio breviores, tenuiter glanduloso-puberuli; bractee angustae, apice longe attenuatae, 5–6 mm. longae, margine glanduloso-ciliolatae. Calyx 8 mm. longus, utrinque sed intra parcissime glanduloso-puberulus, lobis ovato-oblongis vel oblongis acuminatis acutis subacutis 4.75 mm. longis 3 mm. latis 3-nerviis parce glanduloso-ciliolatis. Corollae tubus 14 mm. longus, lobi obovati vel oblongo-cuneati, trilobati, 7 mm. longi 5 mm. lati. Antherae vix 2.5 mm. longae, a corollae tubi basi 5.25 mm. insertae. Stylus floris longistyli stigmatē incluso fere 9 mm. longus. Fructus depresso-globosus, e calycis tubo parum exsertus, calycis lobis persistentibus plus minusve deltoideis erectis vel suberectis.

N.W. Himalaya. Kulu, 5000 ft., Drummond, 8925; Cháchpur Valley, Duthie, 21,067.

***Primula scapigera*, Craib.**

Rhizoma breve, satis crassum, radices elongatas emittens. Folia exteriora oblongo-spatulata vel oblonga, sessilia vel petiolo brevi late alato suffulta, plerumque 4–9 cm. longa et 1.5–3 cm. lata, interiora ovata, oblongo-elliptica vel elliptica, basi late cuneata, truncata vel cordata, usque ad 10 cm. longa et 6 cm. lata sed saepissime circiter 4.5 cm. longa et 3.5 cm. lata, petiolo angustius alato 5.5–8 cm. longo suffulta, omnia apice rotundata, chartacea vel membranaceo-chartacea, nervis lateralibus utrinque 6–8 intra marginem ramosis rectis patulis vel subpatulis pagina superiore conspicuis vel subconspicuis inferiore prominulis vel fere prominentibus, margine subcrasse irregulariter dentata, dentibus nervulis excurrentibus acuminatis. Scapus nunc brevissimus et in foliorum rosula immersus, nunc folia aequans et

infrutescens folia interdum longe superans, interdum pauciflorus, interdum multiflorus; bracteae 0.5–1 cm. longae, e basi lata plus minusve longe attenuato-acuminatae, saepissime paucidenticulatae. Calyx 1 cm. longus, lobis deltoideis vel anguste deltoideis longe attenuato-acuminatis 5.5 mm. longis 2.5 mm. latis interdum apicem versus denticulatis glanduloso-ciliolatis. Corollae tubus (floris brevistylis) 16 mm. longus, lobi 9 mm. longi et 8 mm. lati, apice nunc altius bi- vel tri-lobulati, lobulis irregulariter dentatis vel sinuatis, nunc regulariter vel plus minusve irregulariter dentati vel sinuato-dentati. Antherae 2 mm. longae, filamentis 1 mm. longis suffultae. Ovarium 1.5 mm. altum stylo stigmate grandi ambitu plus minusve oblongo incluso 4.75 mm. longo. Capsula depresso-globosa, calyce inclusa, calycis lobis persistentibus coriaceis divergentibus.—*P. petiolaris*, Wall., var. *scapigera*, Hook. f., Fl. Brit. Ind., iii, p. 494, plantis foliaceo-bracteatis exclusis.

W. Sikkim. Common all over Tonglu, 7000–10,000 ft., Watt, 7013, 5331.

***Primula Scullyi*, Craib.**

Herba nana, escaposa, efarinosa; rhizoma robustum, radices numerosas satis longas parce ramosas emittens. Folia exteriora squamiformia, cito decidua, mediana anguste ovata, oblonga vel oblongo-obovata, usque ad 4.5 cm. longa et 2.5 cm. lata, petiolo alato usque ad 3 cm. longo suffulta, interiora sessilia vel petiolo brevi vix distincto suffulta, medianis parum minora, omnia chartacea, glabra, nervis lateralibus utrinque 6–7 rectis vel fere rectis intra marginem ramosis supra conspicuis subtus prominentibus, margine argute eroso-denticulata. Flores numerosi, folia subaequantes vel iis paulo breviores, pedicellis gracilibus usque ad 3 cm. longis primo glandulis brevibus densius instructis mox puberulis suffulti; bracteae parvae. Calyx extra sparse glanduloso-puberulus, 4.5 mm. longus; lobi lanceolati, acuminati vel subacuminati, subacuti, 2.5–2.75 mm. longi, uninervati, nervo dorso prominente, margine breviter glanduloso-ciliati. Corollae tubus 10–14 mm. longus; lobi obovato-elliptici vel obovato-oblongi, 5–6 mm. longi, 3.5–5.5 mm. lati, apice rotundati, saepissime trilobulati, lobulis acutiusculis vel obtusis, interdum irregulariter sinuato-lobulati. Antherae 1.6 mm. longae, filamentis brevibus suffultae. Ovarium 1 mm. altum, globosum, stylo (stigmate incluso) 3.5 vel 8.5 mm. longo. Fructus pedicellis magis minusve reflexis gesti, globosi, circa 3 mm. diametro, calyce persistente vix accrescente.

Nepaul. Scully.

W. Sikkim. Near Tonglu, 9000 ft., Lace, 2265; Singaleelah, 12,000–13,000 ft., Watt, 5263, 5369, Cave.

var. **Searightii**, Craib, a typo calyce extra glabro vel subglabro ejusque lobis longioribus et angustioribus.

Chumbi, 8000–9000 ft., Searight, 44; Pey-goong-la, King's collector, 433.

Primula sessilis, Royle Mss.

Rhizoma fere semper rectum, satis robustum, radices longas parcius ramosas emittens. Folia exteriora squamiformia cito decidua, mediana mox decidua, oblongo-elliptica ad obovato-oblancheolata, rarius oblanceolata, usque ad 8 cm. longa et 3 cm. lata sed saepissime minora, petiolo late alato vel vix alato usque ad 6 cm. longo interdum inferne parce puberulo suffulta, interiora oblanceolata, oblongo-oblancheolata vel obovato-oblancheolata, apice rotundata vel acuta, basi in petiolum vix distinctum alatum attenuata, saepissime circiter 2.5–4 cm. longa et 1–2 cm. lata, cum medianis chartaceo-membranacea vel chartacea, nervis lateralibus utrinque 6–7 rectis vel subrectis saepe fere patulis bene intra marginem ramosis supra cum costa conspicuis subtus prominentibus, pagina utraque glabra, margine argutius eroso-denticulata. Flores numerosi, folia saepius subaequantur vel ea paulo superantes, pedicellis gracilibus vel subgracilibus saepissime 4–6 cm. longis glabris vel praesertim superne parce glanduloso-puberulis suffulti; bractae e basi lanceolata vel deltoidea longe subulato-acuminatae, 4–6 mm. longae. Calyx 7 mm. longus, extra parce glanduloso-puberulus vel fere glaber, lobis lineari-lanceolatis apice subaristato-acuminatis acutis acumine saepe reflexo 3–3.5 mm. longis uninervatis dorso cum tubo subcarinatis vel distincte carinatis margine pauperius glanduloso-ciliatis. Corollae tubus 12.5–15 mm. longus; lobi obovati vel oblongo-obovati, saepissime caudato-acuminati, 10 mm. longi, 7.5 mm. lati, margine apicem versus interdum sinuato-dentati. Antherae 2 mm. longae, filamentis brevibus suffultae. Ovarium globosum, 1.25 mm. altum, stylo stigmate inclusō 4.75 vel 9.5 mm. longo.

N.W. India. Royle, Cleghorn. Kumaon, T. Anderson; Champwa, 12,000 ft., Strachey and Winterbottom, 247; Pass above Namik, Strachey and Winterbottom; Madharee Pass, 9000 ft., Strachey and Winterbottom, 659 (Primula No. 11). Pindri, 11,000 ft., Collett, 123. Garhwal, 11,000–12,000 ft., Duthie, 14,520. Kidarkanta, 10,000–12,000 ft., Duthie, 1184 et sine num., Gamble, 24,314, 24,360. Jaunsar, Harké Dún, 11,000 ft., Rogers. Simla, Govan; Hattoo, 10,000 ft., Gamble, 6177C. Kulu, Drummond, 8926. Bashahr, Bági Forest, 8000 ft., Lace, 78. Chamba, Watt, 4273.