

Hideaki OHBA\*: Notes on Himalayan *Sedum* (3)\*\*

大場秀章\*: ヒマラヤのペンケイソウ属について (3)\*\*\*

(5) *Sedum sacrum* (R.-Hamet) H. Ohba, stat. nov.*Sedum linearifolium* Royle var. *sacrum* R.-Hamet in Act. Hort. Gothoburg. 2: 395 (1926); Fröderst. in Act. Hort. Gothoburg. 5: append. 53 (1930).*S. sacrum* Prain in R.-Hamet loc. cit., pro syn.

Planta perennis; caudice simplici erecto; caule sparsim foliifero ad 20 cm longo; foliis utrinque complanatis subsessilibus ovatis vel oblongo-ovatis vel ellipticis, margine crenulato-serratis vel paucilobulatis et sub lente dense minutissime papillatis, apice rotundatis basi vulgo brevi-attenuatis, sub lente supra sparsim papillatis (papillis 0.05–0.1mm longis) infra glabris et laevibus, 15–25 mm longis 7–17 mm latis, 1.4–2.2-plo longioribus quam latioribus, vulgo flavo-virentibus; inflorescentia densa, bractea foliis simili sed minore et subintegra; flore hermaphrodito, quinque-partito; calyce longitudine vulgo 2/3 parte petali aequilongo, lobis oblongis vel obovate oblongis apice rotundatis margine sub lente minutissime papillatis; petalis albis, vulgo anguste ovatis apice acute mucronulatis vel obtusis margine integris extus ecarinate cymbiformibus intus concavis 5–6×1.2–2 mm magnis; filamentis petalis paulo brevioribus albis subulatis oppositipetalis 1.5 mm supra basin orientibus; antheris ante anthesin purpureis ovoideis apice processis obsoletis; glandulis complanatis in vivo roseis ovato-rectangulatis apice emarginatis 0.6–1 mm longis; gynoeccio albo 4.5–6 mm longo; ovulis in quoque loculo 14–20, descendentibus circa 1 mm longis apice longe elongatis.

Specimens examined: TIBET. Kambajong (Prain s. n. in Sept. 1903, K; CAL-Type of *Sedum linearifolium* var. *sacrum* R.-Hamet); Gyantse (H. J. Walton s. n. in 1904, CAL); Gyantse Hills (Stewart s. n. in Aug. 1907, CAL); without special locality (Dr. King's collector 187, CAL; Unknown collector 296 in 1884, CAL). C. NEPAL. Marsiandi Valley. 8500 ft. Shady moss

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covered boulders and cliffs. Flowers white. Leaves fleshy and bright yellow green (D. G. Lowndes 1399, BM); Phulchoki, S. of Kathmandu. 2600 m (H. Kanai 673427, TI); loc. cit. 2700 m. On mossy rocks in *Quercus semecarpifolia*-forest (H. Ohashi & H. Ohba 726360, TI); loc. cit. On mossy rocks. Flowers white (H. Hara, K. Iwatsuki, H. Ohba & Z. Iwatsuki 726361, TI); Trisuli Khola—Singum Gompa. 3000 m (H. Hara, H. Kanai, S. Kurosawa & H. Ohashi 6358, TI); loc. cit. On rock surface. Calyx pale green, petals somewhat boat-shaped, white but margin above half reddish, anthers and the tip of filaments dark red purple, ovary white, gland dirty pale reddish (H. Kanai, H. Hara & H. Ohba 726362, TI); North west of Gurjakhani. 10750 ft. On rocks in *Quercus* forest. Flowers whitish (J. D. A. Stainton, W. R. Sykes & L. H. J. Williams 3683, BM; TI). W. NEPAL. Below Garjigoth, Dori Lekh, W. of Jumla. 10000 ft. Growing in moss on rock beside stream. Leaves pale green beneath. Sepals pale green. Petals white. Filaments white, anthers pale green. Ovaries white (O. Polunin, W. R. Sykes & L. H. J. Williams 5049, BM; TI); On way to Bumra. 8-9000 ft. On shady and rocky places. Fls. small and green (S. B. Malla 10708, BM).

This species was first described as a variety of *Sedum linearifolium* Royle by R. Hamet. He regarded the latter species as consisting of 7 varieties, but his treatment seems to be rather unnatural. *S. sacrum* is apparently distinguished from *S. linearifolium* var. *linearifolium* mainly in having ovate and crenulate-serrate leaves (instead of linear-oblong or very narrowly obovate-oblong and almost entire leaves of the latter) and oblong or obovate-oblong calyx-lobes (against the latter's triangular ovate lobes). This species is closely related to *Sedum Tieghemi* R. Hamet, but is distinguished by the entire (instead of erose) petals. This also resembles *S. sinuatum* Royle ex Edgew. and *S. callianthum* H. Ohba, and differences between them are mentioned under the latter species.

*S. sacrum* has been known in Tibet, but as cited above, it occurs in C. and W. Nepal.

(6) *Sedum* (Rhodiola) **nepalicum** H. Ohba, sp. nov. (Fig. 1, a-f)

A *Sedo sinuato* Royle ex Edgew. petalis rhombice ellipticis (non angustissime ovato-triangularibus nec anguste oblongis) calycibus longitudine  $2/5-3/5$  partes petalorum aequantibus (nec  $1/3$ ) ovariis 8-9 (nec 5-7) mm longis differt.

Planta perennis mediocris plerumque 10-30 cm alta, rhizomate usque 3 cm longo irregulatim cylindraceo solido carnosio 0.6-1.0 cm dimetiente pallide fusco, basi versus radicem longe repentem ad 20 cm longam gradatim decrescente, parte apicali in rhizomatocladis<sup>1)</sup> 1-7 ramificante. Rhizomatocladus potius epigaei subcylindrici carnosi solidi erecti vel adscendentes 10-25 mm longi 3-8 mm diametro dense squamati. Folia squamosa vere vel latissime triangularia vel late trullata (SADT n. 59) 5-10 mm longa 3-8 mm lata apice acuta vel acuminate obtusa margine integra brunnea vel badia persistentia, caulem aerium ex quaque axilla eorum emittentia. Caules aeri 3-5 pro uno rhizomatocladus vulgo 10-30 cm longi simplices potius remotiuscule foliiferi (sed internodiis foliorum longitudine distincte brevioribus) fere teretes, sub lente semper modice papillati (papillis translucetibus 0.2-0.3 mm longis), decidui quotannis, in sicco straminei et cicatricibus foliorum delapsorum minutissime prominentibus notati. Folia alterna patentia in media parte caulis non nimis majora subsessilia anguste elliptica vel anguste ovata apice rotundata vel raro obtuse acuta basi longe cuneata vel cuneate attenuata vel attenuata, crassiuscula utrinque complanata et sub lente sparsim minutissime papillata (papillis minoribus quam 0.3 mm longioribus), margine quinque- vel septem-lobulata vel supra medium remotissime crenato-serrata et sub lente sparsim papillata, dentibus vere vel ovate triangularibus et acutis vel obtusis, sinu angulata (angulis 60°-100°), 10-45 mm longa 6-15 mm lata 1.5-3.5-plo longiora quam latiora, venatione camptodroma sed invisibili. Inflorescentia dichasialiter laxa composita terminalis, floribus 6-12(-15) ornata; pedunculo estriato 5-10(-25) mm longo, sub lente dense vel modice papillato (papillis 0.2-0.3 mm longis); bractea sessili vulgo foliis caulis simili sed saepe angustissime ovata vel angustissime obovata apice obtusa vel rotundata margine subintegra, 3-8 mm longa 0.7-2 mm lata; pedicello teretiusculo estriato, sub lente dense vel modice papillato, 1-4(-6.5) mm longo. Flores hermaphroditi, in sicco 7-10 mm diametro, plerumque quinque-partiti. Calyces 5-7 mm longi virides profundissime in lobos divisi, tubo circa 1 mm longo; lobis fere aequimagnis in vivo verisimiliter crassiusculis, linearibus vel lineari- vel angustissime ovato-triangularibus utrinque ecarinatis et sub lente sparsissime minutissime papillatis (papillis

1) rhizomatocladus ( $\rho\iota\zeta\omega\mu\alpha + \kappa\lambda\alpha\delta\omicron\varsigma$ ) = a branch of rhizome.

minoribus quam 0.1 mm longioribus) vel glabris, apice obtusis vel rotundatis, 4-5.5 mm longis 1-1.5 mm latis, 2.7-5-plo longioribus quam latoribus. Petala quinque distincta sessilia tenuia glabra ecarinate cymbiformia anguste elliptica vel angustissime obovata (SADT n. 45) apice brevissime mucronulate obtusa 8.5-10(-15) mm longa 2-2.3(-3) mm lata, 4(-5)-plo longiora quam latoria, margine paene integra sed saepe sub lente minutissime undulata, sub anthesi paulum patentia, alba. Stamina numero (8-)10, plerumque petalis fere aequilonga vel raro paulo breviora; filamentis subulatis obcompressis glabris substrictis albis basi circa 0.5 mm latis, oppositipetalis 4.5-5.5(-10) mm longis circa 3 mm supra basin orientibus, alternipetalis 7.5-9(-13) mm longis; antheris basifixis anguste ellipsoideis apice processum minutum connectivi gerentibus, 0.8-1.2 mm longis, ante anthesin probabiliter rubellis sed effuso polline lutescentibus. Glandulae complanatae oblongae 0.9-1.2 mm longae 0.6-0.7 mm latae margine integrae apice vere vel leviter emarginatae vel truncatae, in vivo verisimiliter luteae in sicco dilute luteae. Gynoecia quinque distincta sed basi leviter (longitudine circa 1 mm) connata; ovario suburceolato sessili erecto latere ventrali sine gibbositate albo, 12-16(-18) mm longo; stylo circa 3.5(-5) mm longo plus minusve oblique attenuato, apice in stigma sat obscurum epapillatum desinente. Ovula in

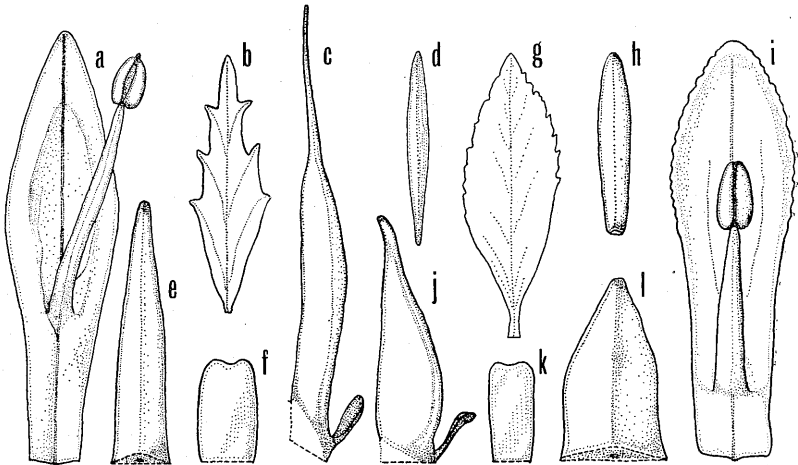


Fig. 1. *Sedum nepalicum* (a-f): a, petal with stamen,  $\times 7.5$ ; b, leaf,  $\times 0.9$ ; c, ovary,  $\times 7.5$ ; d, bract,  $\times 7.5$ ; e, calyx-lobe,  $\times 7.5$ ; f, gland,  $\times 15$ . *Sedum callianthum* (g-l): g, leaf,  $\times 1$ ; h, bract,  $\times 7.5$ ; i, petal with stamen,  $\times 15$ ; j, ovary,  $\times 15$ ; k, gland,  $\times 15$ ; l, calyx-lobe,  $\times 15$ .

quoque loculo 14-24, anatropa descendencia circa 0.5 mm longa ellipsoidea apice rotundata.

Central Nepal: Tegar, N. of Mustang. 15000 ft. On rock ledges. Petals and filaments white; anthers brown (J. D. A. Stainton, W. R. Sykes & L. H. J. Williams 2222 in Aug. 5, 1954—Holotypus in BM; Isotypus in TI); Samargaon, N. of Tukucha. 13000 ft. Dry open hillside. Petals & filaments white, anthers red (Stainton, Sykes & Williams 7243, BM; TI); loc. cit. On rocks (Stainton, Sykes & Williams 8095, BM); Muktinath. 12500 ft. On rock beneath shade of trees. Petals and filaments white. Anthers red. Calyx green (Stainton, Sykes & Williams 2045, BM; TI); Dolpo, Loharka. 14500 ft. 29°0' N 83°26' E. On riverside gravel. Flowers white (J. D. A. Stainton 5566, BM).

This species is closely related to *S. sinuatum* Royle ex Edgew., *S. sacrum* (R.-Hamet) H. Ohba and also to *S. callianthum* H. Ohba, and differences between them are summarized under the latter species.

(7) **Sedum** (Rhodiola) **callianthum** H. Ohba, sp. nov. (Fig. 1, g-l)

Ex affinitate *Sedi sinuati* Royle ex Edgew. et *S. sacri* (R.-Hamet) H. Ohba, ab utroque flore purpureo (non cremeo nec albino), apice petali rotundato vel breviter mucronate obtuso (nec mucronate acuto), glandulis purpureis (non cremeis) anguste obovatis (non oblongis nec quadratis), ovulis in quoque loculo semper duobus (nec 8-24) distinctum.

Planta perennis mediocris usque 20 cm alta, rhizomate usque ad 3 cm longo, irregulatim cylindraceo solido carnosio pallide lurido, 12-15 mm dimetiente basi versus radicem longe repentem dauciformem ad 40 cm longam gradatim decrescente; ab apice rhizomatis folia squamosa pallide rufescentia, et forma et magnitudine variabilissima (vere vel late vel ovate) triangularia 8-10 mm longa 5-8 mm lata vel depresso trullata 6-10 mm longa 8-12 mm lata persistentia dense edentur. Caules 3-5 ex quoque axilla squamarum singulariter evoluti, laxe foliati (numero 8-12) adscendentes vel erectiusculi simplices teretes glabri in sicco pallide purpurei usque 10 cm longi 1.7-2 mm diametro, decidui quotannis. Folia subopposita, in media parte caulis vix majora, petiolata; petiolis 2-3 mm longis glabris obcompreste teretiusculis; lamina crassiuscula utrinque complanata rhombice ovata vel rhombice anguste ovata vel anguste vel vere elliptica, supra sparsissime minutissime papillata (papillis minoribus quam 0.1 mm longioribus), infra

glabra leviter oleosa, apice acute obtusa basi sensim in petiolum attenuata, margine minutissime papillata (papillis 3-8 pro 1 mm<sup>2</sup>) et circa 2/3 sub apice crenulato-serrata et ceterum integra, 20-42 mm longa 5-20 mm lata, 17×8, 20×5, 23×8, 30×12, 34×12, 40×20 mm etc. magna, 2-4-plo longiore quam latiore; venatione camptodroma sed invisibili. Inflorescentia dichasialiter laxe composita (floribus 20-35) terminalis; pedunculo sparsim minutissime papillato 5-15 mm longo; bractea majore foliis caulis simili, sed ea minore sessili lineari apice rotundata vel obtusa 3-4 mm longa 0.6-0.7 mm lata; pedicello glabro 1.2-2.5 mm longo. Flores hermaphroditi, in sicco circa 5 mm diametro, plerumque quinque-partiti. Calyces 1.8-2.4 mm longi, in vivo probabiliter crassiusculi et virides glabri profunde in lobos divisi, tubo circa 0.5 mm longo; lobis complanatis ovatis vel (anguste vel vere vel late vel latissime vel ovate) irregulariter triangularibus, apice obtusis vel truncatis, margine integris vel sursum sinuatis, magnitudine variabilibus [1.4×1.1, 1.7×1.0, 1.8×1.1, 1.8×1.2, 2.0×1.3], [1.3×1.1, 1.4×1.0, 1.6×1.0, 1.6×1.4, 1.7×1.1], [1.4×0.6, 1.5×0.7, 1.5×0.8, 1.6×0.8, 1.9×1.0 mm] etc.; venis invisibilibus. Petala quinque distincta et sessilia, leviter succulenta glabra, anguste vel vere obovata (SADT n. 46 vel 47) vel elliptica, in flore juvenali anguste oblongo-obovata, apice rotundata vel breviter et irregulariter mucronulate obtusa, margine paene integra sed saepe supra medium irregulariter minutissime erosa, 3-4.5 mm longa 0.8-1.5 mm lata, 3-3.3-plo longiora quam latiora, sub anthesi valde patentia, in vivo forsan pulchre purpurea, in sicco violacea. Stamina 10, plerumque 2/3 vel 3/4 petali aequilonga; filamentis subulatis obcompressis substrictis glabris probabiliter dilute purpureis basi 0.4 mm latis, oppositipetalis circa 0.6 mm supra basin orientibus et 1.5-1.7 mm longis, alternipetalis circa 2.5-3 mm longis; antheris basifixis anguste vel angustissime ovoideis 0.5-0.7 mm longis, apice processis obsoletis, ut videtur ante anthesin saturate purpureis, effuso polline lutescentibus. Glandulae complanatae anguste obovatae, 0.8-1.2 mm longae 0.3-0.4 mm latae, magnitudine 0.8×0.3, 1.0×0.4, 1.2×0.3 mm etc.; 2.5-4-plo longiores quam latiores, margine integrae, apice rotundatae, in vivo verisimiliter saturate purpureae. Gynoecia quinque distincta sed basi leviter (longitudine circa 0.1-0.2 mm) connata; ovario conoideo sessili erecto latere ventrali sine gibbositate, circa 2.0-2.5 mm longo; stylo stricto inconspicuo attenuato, apice in stigma sat obscurum epapillatum desinente. Ovula in

*S. sinuatum*

*Leaves* aggregate towards the apex or rarely not so; petiolate; oblong to oblong-ovate with  $\pm$  lobate to deeply partite margin; lobes triangular or triangular-ovate to linear with round to obtuse apex.

*Calyx-lobes* narrowly triangular-ovate to narrowly triangular; 2-2.5 mm long; in length equalling  $1/4$ - $1/3$  of the petal.

*Petals* white; very narrowly triangular-ovate 6-7  $\times$  1-1.3 mm in size.

*Gynoecium* 5-7 mm long.

*Ovules* in each locule 8-16; the apex not elongate.

*S. sacrum*

not aggregate; almost sessile; ovate or oblong-ovate to elliptic with crenulate-serrate to slightly lobulate margin.

oblong to obovate-oblong; 4-5 mm long; equalling  $2/3$  of the petal.

white; narrowly ovate; 5-6  $\times$  1.2-2 mm.

4.5-6 mm.

14-18; elongate.

*S. callianthum*

not aggregate; petiolate; rhombic (often narrowly) ovate to elliptic with crenulate-serrate margin.

ovate to (narrowly —very broadly—ovately) triangular; 1.3-1.9 mm long; equalling  $1/3$ - $2/5$  of the petal.

purple; (narrowly to typically) obovate to elliptic; 3-4.5  $\times$  0.8-1.5 mm.

2-2.5 mm.

always 2; elongate.

*S. nepalicum*

not aggregate; almost sessile; narrowly elliptic or narrowly ovate with 5- or 7-lobulate to very remotely crenulate-serrate margin.

linear to (linear- or ovate-) narrowly triangular; 4-5.5 mm long; equalling  $2/5$ - $3/5$  of the petal.

white; narrowly elliptic to very narrowly obovate; 8.5-10  $\times$  2-2.3 mm.

12-18 mm.

14-24; not elongate.

quoque loculo semper duo, anatropa descendencia ellipsoidea circa 0.4 mm longa glabra apice elongato-obtusa.

Central Nepal: Rolwaling. 14000 ft. 27°55' N 86°23' E. In rock ledges, flowers purplish red (J.D.A. Stainton 4703 in June 29, 1964—Holotypus in BM; Isotypus in TI); Langtang. 12500–13000 ft. Overhanging rock, (flowers) brownish red (O. Polunin 200, BM).

This new species is related to *S. sinuatum* Royle ex Edgew., *S. sacrum* (R.-Hamet) H. Ohba and *S. nepalicum* H. Ohba, but they are distinguishable from each other by several characters as summarized in the table on page 327.

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ここでは *Sedum linearifolium* Royle に近縁な種類を扱った。

(5) *Sedum sacrum* (R.-Hamet) H. Ohba 本種は最初 R.-Hamet によって *S. linearifolium* Royle の変種として発表された。しかし、葉が母種で線状楕円形あるいは狭倒披針形ではほぼ全縁であるのに対して卵形で鈍歯のあること、がく片が三角状卵形に対して長楕円形あるいは倒卵状長楕円形である点など、明らかに相違する。1972 年にはカトマンズの南にある Phulchoki の山頂附近 (海拔 2600m), また Gosainkund への登山路である Trisuli Khola と Singum Gompa 間 (海拔 3000 m) の 2ヶ所で生育地等もよく観察することができた。既知のチベットに加え、British Museum と東京大学の資料で中部および西部ネパールにも分布することが判った。

(6) *Sedum nepalicum* H. Ohba (新種) 本種は中部ネパールのカリガンダキ流域の 3ヶ所で Stainton, Sykes および Williams によって、他の 1ヶ所で Stainton によって採集された。*S. sinuatum* Royle ex Edgew. に最もよく似ているが、花卉、がく片、子房の大きさや形が異なる。

(7) *Sedum callianthum* H. Ohba (新種) 中部ネパールの Rolwaling で Stainton によって、また Langtang で Polunin によって採集された。*S. sinuatum* や上記 (5) 及び (6) によく似た種類であるが、花は全体に紫色を帯びること、花卉の先端が鈍頭または円頭となることなどで明らかに異なる。

#### 正 誤 (Errata)

	頁 (Page)	行 (Line)	誤 (For)	正 (Read)
Vol. 48	330	2	gibbositato	gibbositate
Vol. 49	257	9	distinguendum	distinguenda
	309	17	小花は	小穂は