STUDIES ON THE DISTRIBUTION OF THE GENUS *SPIRAEA* L. (ROSACEAE)

A critical study of specimens available in four herbaria *viz.* CAL, DD, BSD, LWG *vis-a-vis* relevant literature suggests that of the 20 Indian species of *Spiraea* L. *sensu stricto* 8 are endemic, being restricted to the temperate regions of the Himalayas. Of these, four species have not been collected from the type locality or elsewhere and are known by their type collections only. Reference to literature, types and distribution of each taxon is presented in order, followed by citation of representative specimens (other than type) wherever available, in respect of the eight endemic species. It is hoped that the data presented below would aid focus attention on endemic/rare/endangered taxa and would stimulate further critical study and intensive search, to locate them in the field unless they are already extinct. To aid in identification of these rare/endemic taxa, illustration of diagnostic characters wherever specimens are available in CAL, are given (Figs. 1-10).

Group I. (Comprising four species known by their type collections only).

1. **Spiraea diversifolia** Dunn in Kew Bull.: 309. 1921.

Type: INDIA: Uttar Pradesh: East Almora, Hum and Ralapani, 3000 m, 20 Oct. 1920, *W. J. Lambert* s.n. (*W. F. Lambert* in the text) [K, Photo—CAL].

Distribution: India (Uttar Pradesh).

2. **S. duthieana** Zinserling in Not. Syst. Herb. Hort. Bot. Rep. Ross. 5: 64. 1924.

Type: INDIA: Uttar Pradesh: Kumaon, Palang Gadh, Bijans, 2745-3050 m, 22 July 1886, *J. F. Duthie* 5489 [K, Photo—CAL; Isotypes—CAL; DD].

Distribution: India (Uttar Pradesh).

3. **S. hypoleuca** Dunn in Kew Bull. 119. 1921.

Syntypes: INDIA: Uttar Pradesh: Garhwal, rocks in Dombitia Gadh, 2300-3000 m, (7 Sept. 1885), *J. F. Duthie* 3965 [K, Photo—CAL; Isosyntypes CAL, DD]; Kanol, (2623 m), (7 June, 1919), *A. E. Osmaston* 1964, *in parte* (DD), [K, Photo—CAL], *Ibidem* (3050 m), 25 Jun. 1919, *A. E. Osmaston* 1065 (K, Photo—CAL).

Distribution: India (Uttar Pradesh).

4. **S. rotundifolia** Lindley in Edwards Bot. Reg. 26: Misc. Not: 72, sp. no. 159. 1840.

Type: Plants grown from seeds collected from Kashmir (Cashmere) by Dr. Falconer and presented by the Court of Directors of East India Company to the Horticultural Society, London (CGE).

Distribution: India (Jammu & Kashmir).

Group II. (Comprising four species for which some collections, other than types, are available in Indian herbaria).

5. **S. canescens** D. Don. Prodr. Fl. Nepal: 227. 1825; J. D. Hooker, Fl. Brit. Ind. 2: 325. 1878.

Type: INDIA: Uttar Pradesh, Srinagar, *Kamroop* s.n. (We are informed that the type could not be traced in BM or E).

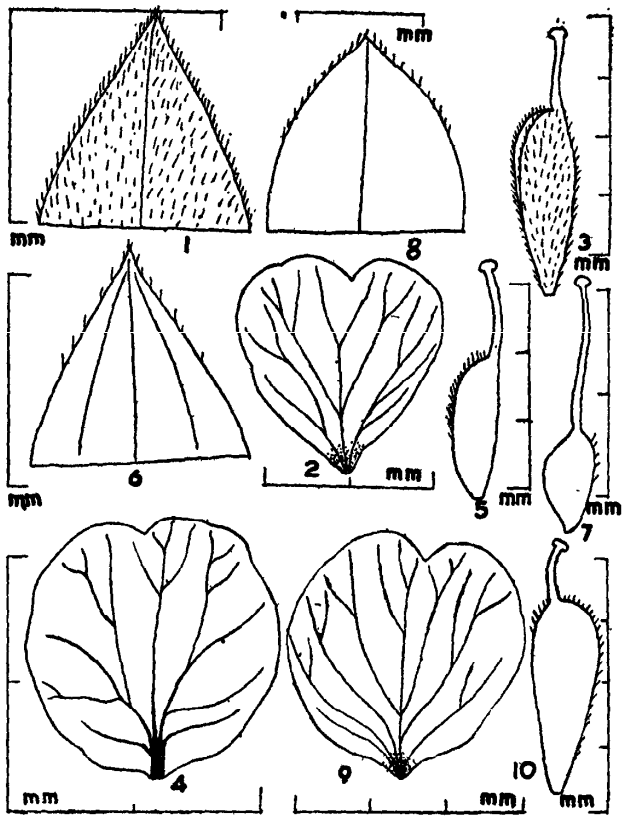
Representative specimens studied: JAMMU & KASHMIR: Sind Valley, 1525-1830 m, 26 June, 1892, *J. F. Duthie* 11428 (CAL), Batkote, 2600 m, 28 June, 1959, *T A. Rao* 9753 (BSD). HIMACHAL PRADESH: Chamba, Aug. 1880, *Robert Ellis* 154 (CAL); Kulu valley, on way to Chanderkhani, 235 m, 14 Sept. 1955, *K. M. Vaid & party* (DD). UTTAR PRADESH: Garhwal, Panwali, 1600 m, 22 May, 1972, *B. D. Naithani* 47929 (CAL); Nainital, near Dorothiya, 27 June, 1967, *S. L. Kapoor & party* 70153 (LWG); Kumaon, Kalamoni, 4 August, 1900, *Inayat* 24398 (DD). WEST BENGAL: Darjeeling, Lloyd Botanic Garden, 1982 m, 6 July, 1956,

D. Chatterjee's collector 87 (CAL). SIKKIM: *Sine loc.* 3660 m, *J. D. Hooker* s. n. (Acc. No. 145232—CAL).

Distribution: INDIA: Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, West Bengal, Sikkim ; NEPAL and PAKISTAN.

6. **Spiraea gracilis** Maxim. in Act. Hort. Petrop. 6: 200. 1879. *Spiraea parvifolia* Bertol Plant. Nuov. Asiat. 2: 10-11, t. 4. 1865; J. D. Hooker, Fl. Brit. Ind. 2: 326. 1878; *non* Bentham (1840).

Type: INDIA: Jammu & Kashmir, Kishtowar, 1525-2444 m, *T Thomson* s. n. (BOLO, K; Photo—CAL).



S. canescens D. Don—Figs. 1-3 : 1. Sepal. 2. Petal. 3. Mature follicle. *S. vaccinifolia* D. Don—Figs. 4 & 5. : 4. Petal. 5. Mature follicle. *S. gracilis* Maxim.—Figs. 6 & 7 : 6. Sepal. 7. Mature follicle. *S. zabeliana* Schneider.—Figs. 8 & 9 : 8. Sepal. 9. Petal. *S. duthieana* Zinserling.—Fig. 10. Mature follicle.

Representative specimens studied: JAMMU & KASHMIR: Kishtwar, Nagin siru, 1800-3850 m, 22 Sept. 1958, *T. A. Rao* 7877 (BSD); 16 July, 1956, *G. Saran & party* 29982 (LWG). HIMACHAL PRADESH: Chamba, Sao, 1525 m, 7 Oct. 1874, *C. B. Clarke* 23584 (CAL); Pangi, Darwas, on shady rocks, 2379 m, 15 Aug. 1919, *R. N. Parker* s. n. (DD, Acc. no. 21604). UTTAR PRADESH: Mussoorie, 7 June 1960, *J. G. Srivastava* 79289 (LWG).

Distribution: INDIA: Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh ; PAKISTAN (*Stewart* 1972) and NEPAL.

7. **S. vaccinifolia** D. Don, Prodr. Fl. Nepal. 227. 1825.

Type: Nepal *Wallich* s. n. (non vidi). We have been informed that the type is not traced at BM or E.

Representative specimens studied: JAMMU & KASHMIR: Karna (Shavai), 1525 m, 6 June, 1907, *Hukum Singh & Keshavanand* 1667 (DD). HIMACHAL PRADESH: Simla, Naldehra, Limestone Cliff, 1830 m, 19 June, 1877, *J. S. Gamble* 4401 (C, CAL); Kulu valley, Kasol, 13 June 1950, *S. K. Jain & R. C. Bharadwaj* s. n. (DD). UTTAR PRADES: Jaunsar, Trus valley, above Thadyar, 915-1220 m, 4 May, 1895, *J. F. Duthie* 155570 (CAL, DD); Mussoorie, Charleville Road, 2000 m, 2nd August, 1963, *H. Santapau* 28553 (CAL). ARUNACHAL PRADESH: Jigaon to Pam, river valley, 21 & 22 May 1958, *Panigrahi* 16035 (CAL).

Distribution: INDIA: Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Arunachal Pradesh ; NEPAL and PAKISTAN.

8. **S. zabeliana** C. K. Schneider in Bull. Herb. Boiss. Ser. 2, 5: 343 *et* Ill. Handb. Laubholz. 1: 446. f. 292. 1905.

Syntypes: INDIA: Uttar Pradesh: Tehri-Garhwal (Nila valley, 2745-3050 m, 24 June 1883), *J. F. Duthie* 1106 (c) [*Sphalm*, 1106 (e), See Parker, 1930] [G, Photo—CAL, isosyntype CAL]. Kumaon (Nipchang valley,

Darma, 3660-3965 m, 31 Aug. 1884). *J. F. Duthie* 2842 [G, Photo—CAL; isosyntype—DD].

Specimens studied: UTTAR PRADESH: Ganges valley, near Suki, 3965-4270 m, 16 Aug. 1883, *J. F. Duthie* 1105 (CAL).

Distribution: INDIA: Uttar Pradesh; PAKISTAN.

According to Stewart (Annotated Flora of West Pakistan: 373. 1972), two specimens collected by Duthie from Richmori, Siran Range and Bagnu Bhonja, Kagan valley (Pakistan) and deposited in the Gray Herbarium (GH), may be identified with this species.

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NOMENCLATURAL NOTES ON *OPHIORRHIZA RUGOSA* COMPLEX (RUBIACEAE)

During revisionary studies in the genus *Ophiorrhiza* L. it was found that Hooker's (1880) treatment of *O. harrisiana* Heyne and varieties under it needed a change in the context of relevant articles of the ICBN (1978). *O. harrisiana* which initially was only a manuscript name after S. Harris, who collected it from Malacca, was included in print by Wight & Walker-Arnott (1834) as an 'Obscure species' In the meanwhile based on the same gathering G. Don (1834) described his *O. harrisonii*. This earlier properly published name, makes Hooker's *O. harrisiana* Heyne a superfluous name (Art. 63. ICBN 1978).

Wallich (1824) on the basis of his own collection in 1821 from Nepal (Wall. Cat. 6235) described *Ophiorrhiza rugosa*. Blume (1826), De Candole (1830) and King & Gamble (1903) all accepted this as a distinct species.

D. Don (1825) described *O. prostrata* based on a collection of Buchanan-Hamilton in 1813, from Nepal and also of Wallich (Wall. Cat. 6235) which formed the basis of the earlier published *O. rugosa*.

At the species level *O. rugosa* Wall. is the earliest valid name and *O. prostrata* D. Don as also *O. harrisonii* are only its synonyms. However, Hooker (1880) under his *O. harrisiana* Heyne treated at varietal level both *O. rugosa* and *O. prostrata*. Further he treated three more var. *decumbens* var. *argentea* and var. *merguensis*. Santapau & Merchant (1961) regarded *O. prostrata* as correct, citing *O. harrisonii* and *O. harrisiana* both in synonymy, but have ignored the earlier *O. rugosa*. Hara (1966) has also recognised *O. prostrata* and cited under it in synonymy *O. rugosa* and erred in indicating *Wall. Cat.* 6229 along with it. (This number is *O. argentea*).

While as a result of our detailed study, we agree with Hooker's disposition on the varietal status, we have to state that in conformity with current ICBN requirements *O. harrisiana* Heyne is a superfluous name and has to be replaced by the earliest valid name *O. rugosa* Wall. at the specific level. This requires further the transfer of the different varieties from under *O. harrisiana* to *O. rugosa* which is now done.

O. rugosa Wall. var. **rugosa** Wall. in Roxb. Fl. Ind. 2: 547. 1824 (Type: Nepal, Shivapoor, 1821, *Wall. Cat.* 6255! CAL, K); Bl. Bijdr. 976. 1826; DC. Prodr. 4: 416. 1830; G. Don, Gen. Syst. Gard. Bot. 3: 522. 1834; King & Gamble in Journ. As. Soc. Beng.