

## SOME CANADIAN SENECIOS.

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In the preparation of a monograph of the North American species of the genus *Senecio*, the writer, through the kindness of Messrs. JOHN and JAMES M. MACOUN, has had the privilege of studying the entire representation of this genus in the herbarium of the Geological Survey of Canada. This collection is especially rich in northern forms, and in many instances excellent series of specimens illustrate individual species of northern distribution. Several plants, however, have been found which hitherto seem not to have been described; these, associated with material from the Gray Herbarium and the herbarium of the Field Museum of Natural History, are characterized and recorded, as follows:—

## SENECIO BURKEI, sp. nov.

Herbaceus perennis; caulibus erectis 3–9 dm. altis simplicibus vel rarius ramosis striatis glabris; foliis inferioribus petiolatis ovato-oblongis 2–10 cm. longis 1–4.5 cm. latis ad apicem obtusis vel rotundatis basi cuneatis vel subtruncatis, foliis superioribus irregulariter inciso-dentatis vel pinnatifidis sessilibus et sub-amplexicaulibus et sursum gradatim reductis; inflorescentiis corymboso-cymosis; capitulis plerumque numerosis 10–12 mm. altis radiatis; bracteis involucri circiter 21 lineari-lanceolatis 6–8 mm. longis glabris vel floccoso-tomentulosis plus minusve purpurascentibus; floribus femineis ligulatis ca. 12; floribus disci numerosis (50–60); achaeniis glabris. Collected on the “east slope of the Rocky Mountains” by *Burke* (hb. Gray) type. ALBERTA: by the reservoir, Banff, 30 October, 1899, *N. B. Sanson* (hb. Geol. Surv. Canada, no. 22288); vicinity of Banff, July, 1906, *N. B. Sanson*, (hb. Geol. Surv. Canada, without number, and hb. Field Museum, cat. no. 288351); Banff, 28th July, 1904, *Miss Edith M. Farr* (hb. Field Museum, cat. no. 189413); mountain slopes, Crows Nest Pass, 31 July, 1887, *J. Macoun* (hb. Geol. Surv. Canada, no. 22785 in part). BRITISH COLUMBIA: open thickets, Spences Bridge, 31 May, 1889, *J. Macoun* (hb. Geol. Surv. Canada, no. 14811 in part); shaded banks, mouth of Silica Creek, Chilliwack River, 29 June, 1901, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, no. 26685); on a bog in Chilliwack Lake, 19 July, 1901, *J. M. Macoun* (hb. Geol. Surv. Canada, no. 26682a); in a marsh east of Chilliwack Lake, 25 July, 1901, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, no. 26682); foot of a snow slide, Middle Creek, Chilliwack River, 2 August, 1901, *J. M. Macoun* (hb. Geol. Surv. Canada, no. 26681); in thicket



by stream at 150 mile house, Cariboo Road, 15 July, 1906, *E. Wilson*, no. 700 (hb. Geol. Surv. Canada); Sophie Mt., 17 and 20 July, 1902, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, nos. 64990, 64991); low ground, Skagit Valley, alt. 770–925 m., 10 July and 21 August, 1905, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, nos. 69358, 69359). ROCKY MOUNTAINS: cold moist slopes, Kicking Horse Pass, 13 September, 1884, *J. Macoun* (hb. Geol. Surv. Canada, no. 14818); river margins, Silver City, 7 August, 1885, *J. Macoun* (hb. Geol. Surv. Canada, no. 14772); swamps, Kicking Horse Lake, alt. 1540 m., 10 August, 1890, *J. Macoun* (hb. Geol. Surv. Canada, no. 14810). MONTANA: open ground, shore of Lake McDonald, alt. 300 m., 25 July, 1901, *F. K. Vreeland*, no. 964 (hb. Geol. Surv. Canada, no. 67117).

SENECIO MULTNOMENSIS, sp. nov.

Herbaceus perennis; caulibus erectis vel plus minusve flexuosis 3–7 dm. altis in axillis foliorum floccoso-tomentulosis cetera glabris; foliis inferioribus petiolatis oblongo-ob lanceolatis 4–15 cm. longis 0.8–2 cm. latis utrinque glabris apice obtusis vel rotundatis crenato-serratis vel plus minusve lyrato-lobatis cum remote lobis, superioribus sessilibus et subamplexicaulibus; inflorescentiis terminalibus corymbo-cymosis, pedunculis plerumque elongatis; capitulis 10–13 mm. altis radiatis; squamis involucri campanulati circiter 21 lineari-lanceolatis 8–10 mm. longis acutis pallide viridibus glabris, apice penicillatis; floribus femineis ligulatis ca. 13, ligulis flavis; floribus disci ca. 60; achae-niis glabris. OREGON: Multnomah County, June, 1877, *T. J. Howell*, no. 221 (hb. Gray) type; without locality, June, 1877, *Howell* (hb. Field Museum, cat. no. 69229); low flats, Cascades, coll. of 1868–9, *A. Kellogg* and *W. G. Harford* no. 537 (hb. Gray). BRITISH COLUMBIA: Field, 6 August, 1904, *Miss Edith M. Farr* (hb. Field Museum, cat. no. 189411); Trail, 18 June, 1902, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, no. 64992). SASKATCHEWAN: without further locality, Palliser's Brit. N. Am. Expl. Expedition, coll. of 1857, *E. Bourgeau* (hb. Gray). A species related to *S. Burkei* Greenm., but distinguished readily from it by the more or less flexuous stem, relatively narrow oblong-ob lanceolate basal leaves, remotely lobed lower stem-leaves with broad rounded sinuses, and usually long pedunculate heads. From *S. Balsamitae* Muhl. to which certain of the above specimens have been referred by some authors, *S. multnomensis* is separated easily by the larger heads and longer involucre bracts.

SENECIO FARRIAE Greenman, Bot. Gaz. 42: 147, 1906; Contr. Bot. Lab. Univ. Pa. 3: 74, 1907. Through the courtesy



of Mr. J. M. MACOUN the writer has had an opportunity to study an excellent lot of about a hundred specimens of this species, which were collected in the vicinity of Banff, Alberta, by Mr. N. B. SANSON, in July of 1906. Several mounted specimens were also found by the writer along with other material of the genus kindly sent to him for examination from the herbarium of the Canadian Geological Survey. The entire series of specimens at hand shows naturally a greater range of variation than the limited material on which the species was founded; nevertheless the essential characters ascribed originally to the species are retained throughout, and the following additional data may be recorded: Stems 1-3 dm. high, lowermost leaves ovate to slightly obovate 1-4 cm. long, 1-2.5 cm. broad; ray-flowers 10-14; disk-flowers 50-60. In addition to Miss FARR's specimen, cited in the original publication of the species, the following collections well represent the species. ALBERTA: damp places, Red Deer, *H. H. Gaetz*, coll. of 1895, (hb. Geol. Surv. Canada, no. 11622); in grass along Bragg's Creek, Elbow River, 26 June, 1897, *J. M. Macoun* (hb. Geol. Surv. Canada, no. 22784); crossing of McLeod's River, 19 June, 1898, *W. Spreadborough* (hb. Geol. Surv. Canada, no. 19725); Devil's Head Lake, alt. 1385 m., 13 July, 1899, *N. B. Sanson* (hb. Geol. Surv. Canada, no. 22125); vicinity of Banff, July, 1906, *N. B. Sanson* (hb. Geol. Surv. Canada, without number; hb. Field Museum, cat. no. 288350); Crows Nest Lake, 9 July, 1883, *Dr. G. M. Dawson* (hb. Geol. Surv. Canada, no. 14800 in part); Banff, 28 June, 1905, *Miss Edith M. Farr* (hb. Field Museum, cat. no. 189412); Sulphur Springs, Banff, alt., 1415 m., 11 June, 1906, *F. K. Butters* and *C. O. Rosendahl*, no. 1324 (hb. Field Museum, cat. no. 276752). SENECIO BALSAMITAE Muhl. in Willd. Sp. Pl. 3: 1998, 1800.

A very interesting suite of specimens collected by Mr E. WILSON in the Kamloops District, British Columbia, July, 1906, nos. 686, 672 (hb. Geol. Surv. Canada) are indistinguishable from eastern forms of this species secured by Professor M. L. FERNALD on the Gaspé Peninsula, Province of Quebec, in 1904.

SENECIO BALSAMITAE Muhl., var. THOMSONIENSIS, var. nov.

Herbaceus perennis; caulibus erectis simplicibus 3-4.5 dm. altis floccoso-tomentosis; foliis inferioribus petiolatis oblongo-oblanciolatis 3-7 cm. longis 5-12 mm. latis obtusis crenato-serratis juventate utrinque floccoso-tomentosis plus minusve glabratis, foliis superioribus petiolatis vel sessilibus usque ad 10 cm. longis pinnato-lobatis, lobis remotis; inflorescentiis tomentosis; capitulis radiatis per anthesem 6-8 mm. altis. BRITISH COLUMBIA: in grassy thickets fifty miles up North Thompson River, 16 June, 1889, *J. M. Macoun* (hb. Geol.



Surv. Canada, no. 14822); Lake Osoyoos, 31 May, 1905, *J. M. Macoun* (hb. Geol. Surv. Canada and hb. Gray, no. 69357).

This plant was taken at first to represent an undescribed species; and while it differs from typical *S. Balsamitae* Muhl. in being at first floccose-tomentose throughout, and but tardily glabrate, and in having a rather leafy stem, yet these differences do not seem strong enough to merit a specific characterization.

*SENECIO MANITOBENSIS*, sp. nov.

Herbaceus perennis; caulibus erectis 2–3 dm. altis simplicibus vel interdum ramosis glabris vel in axillis foliorum subtomentosis; foliis subcrassis inferioribus petiolatis oblanceolatis 2–7 cm. longis 2–12 cm. latis serratis vel inaequaliter dentatolobatis basi sensim angustatis utrinque glabris, foliis superioribus petiolatis vel sessilibus lacinato-pinnatifidis, laciniis angustissimis remotis; inflorescentiis corymboso-cymosis; capitulis per anthesem 8–10 mm. altis ligulatis; involucris campanulatis glabris, squamis involucris plerumque 21 lanceolatis 7 mm. longis acutis glabris quam floribus disci brevioribus; floribus femineis ligulatis 6–10, ligulis flavis; floribus disci 45–60; achaeniis 3–3.5 mm. longis, costis alternis hirtellis. MANITOBA: on "sand hills at Brandon and Old Wives Lakes, N.W.T. west of Brandon," 22 June, 1881, *J. Macoun*, no. 22 (hb. Gray), type; on open prairie, south of Sewell, 12 June, 1876, *J. Macoun* (hb. Geol. Surv. Canada, no. 12232); Gravelly or rocky places, Flat Creek, "N.W.T.," 20 June, 1880, *J. Macoun*, no. 103 (hb. Geol. Surv. Canada, no. 14796); Lake Winnipeg Valley, *Bourgeau*, coll. of 1857 (hb. Gray); Stewart's Lake Mountain, 21 June, 1875, *J. Macoun* (hb. Geol. Surv. Canada, no. 14777 in part); north of Carberry, 14 June, 1906, *J. Macoun* and *W. Herriot* (hb. Geol. Surv. Canada and hb. Field Museum, no. 69753); on sand hills, eight miles west of Petrel, 17 June, 1906, *J. Macoun* and *W. Herriot* (hb. Geol. Surv. Canada and hb. Field Museum, no. 69755), NORTH DAKOTA: on sand hills, McHenry County, 13 July, 1899, *J. Lunell*, no. 24 (hb. Gray).

A species somewhat intermediate between *S. plattensis* Nutt. and *S. Balsamitae* Muhl. It is distinguished from the former by the narrowly oblanceolate lower leaves and by the glabrous character of stem and foliage. From the latter it is distinguished by the thicker, firmer texture of the foliage, the serrate-dentate basal leaves, and by the pubescence of the achenes.

*SENECIO WILLINGII*, sp. nov.

Herbaceus perennis subglaucens; caulibus erectis 2.5–3 dm. altis glabris striatis foliaceis; foliis oblongo-lanceolatis 3–12 cm. longis 0.7–2 cm. latis crenato-serratis vel multipinnato-



lobatis juventate subtus in costis et nerviis et marginibus petioli floccoso-tomentulosus denique glabratis, lobis oblongis ad apicem rotundatis integris vel obtusodentatis; inflorescentiis dense corymboso-cymosis; capitulis 8-10 mm. altis radiatis; involucris campanulatis calyculatis parce floccoso-tomentulosus glabratis, squamis involucris ca. 21 lineari-lanceolatis 6-7 mm. longis acutis; floribus femineis ligulatis ca. 12, ligulis flavis; floribus disci 60-70; achaeniis glabris. ALBERTA: near Olds, August, 1894, *W. W. Willing* (hb. Geol. Surv. Canada, nos. 14843, 6063; fragment and photograph in hb. Field Museum). Here also is referred doubtfully a specimen collected in gravelly soil at Ninga, Manitoba, 1 June, 1908, *B. J. Hales*, no. 24 (hb. Geol. Surv. Canada).

This species stands nearest to *S. plattensis* Nutt., but differs in its subglaucus character, smooth and strongly striated stem and glabrous achenes.

SENECIO CANUS Hook., var. ACRAEUS, var. nov.

Caulis 3-4 dm. altus; foliis oblanceolatis vel lanceolatis subintegris vel irregulariter inciso-dentatis 4-10 cm. longis 0.5-1.5 cm. latis juventate utrinque lanato-tomentosis supra denique glabratis; inflorescentiis corymboso-cymosis, pedunculis perlongis. SASKATCHEWAN: Spy Hill, 23 June, 1879, *J. Macoun*, no. 52 (hb. Gray), type; on dry gravelly slopes, Spy Hill, "N.W.T.," 26 June, 1879, *J. Macoun* (hb. Geol. Surv. Canada, no. 14837 in part).

The variety here described is a somewhat taller plant than the species proper with more deeply cut stem-leaves and with a tendency for the upper leaf-surface to become more or less glabrous; furthermore the inflorescence is more open and has relatively long branches.

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## NOTES ON NATIVE ORCHIDS.

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BY CHARLES MACNAMARA, ARNPRIOR, ONT.

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Among other peculiarities of our native orchids may be mentioned the surprising manner in which a species will suddenly appear in some place where it was rare or unknown before, only to disappear again in the next year or two. No doubt all plants have their "off" years, but why perennials like the orchids should disappear as suddenly and completely as they do, it is hard to say. Their unexpected appearance is probably due to the exceedingly light nature of their seeds, which a fortuitous wind may carry long distances. But whatever the cause, this remarkable habit adds great zest to orchid hunting, for



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