

**JAMES McNAB'S COLLECTIONS FROM
EASTERN NORTH AMERICA, 1834**

**Notes on nomenclature, and type specimens in the
National Botanic Gardens, Glasnevin, Ireland**

E. C. NELSON* & W. G. DORE**

ABSTRACT. Herbarium specimens collected by James McNab of Edinburgh during his visit to the U.S.A. and Canada in 1834 are deposited in the National Botanic Gardens, Glasnevin, Dublin (DBN). McNab described 6 new taxa; type materials of *Patrinia longifolia* (= *Valeriana edulis*), *Liatris borealis*, *L. stricta* (= *L. cylindracea*), *Lobelia cardinalis* var. *alba*, *Gentiana angustifolia* var. *nana* (= *G. autumnalis*) and *Gentiana barbata* var. *browniana* (= *Gentianopsis virgata*) are noted and discussed.

Following his visit to north-eastern America in the summer and early autumn of 1834, the Scottish horticulturist James McNab (1810-1878) presented an 'Account of some of the rarer plants observed during an excursion in the United States and the Canadas . . .' to the Wernerian Natural History Society of Edinburgh on 25 April 1835. The text appeared in July of that year in the *Edinburgh New Philosophical Journal*, and in this six new taxa were validly described (McNab, 1835); these are enumerated and discussed below.

James McNab, at the time of his visit to America, was superintendent of the Caledonian Horticultural Society's garden situated adjacent to the Royal Botanic Garden (where his father was curator) in Edinburgh, and thus he was particularly interested in obtaining plants of economic value—garden ornamentals, timber and hedging species, fodder and edible plants. Seeds, tubers and living plants were brought back to Edinburgh. James McNab also collected many hundreds of dried and pressed specimens during his American journey, and he retained a set of these for his own use.

Some of those herbarium specimens, with others gathered by his father William McNab (1780-1848), eventually passed to Dr William Ramsay McNab (1844-1889), the only son of James. Dr W. R. McNab's herbarium was purchased in 1890 by the Department of Science and Art for the Dublin Institutions, and was deposited in the Natural History Section of the National Museum in Dublin (Nelson, 1980, in press, in prep.). The specimens were later dispersed through the general foreign collections in the Museum's herbarium, and in 1970 this entire herbarium was transferred to the National Botanic Gardens, Glasnevin, Dublin (Anon., 1970; Nelson, 1980).

In 1985, James McNab's North American specimens were extracted from the foreign herbarium in Glasnevin (DBN) by E. C. Nelson, for study and annotation by W. G. Dore. One result of this research is the recognition of type material relevant to the names published by James McNab; as was the

*National Botanic Gardens, Glasnevin, Dublin 9, Ireland.

**60 Carlyle Avenue, Ottawa, K1S 4Y4, Canada.

practice in the nineteenth century, he did not cite any specimens as types but simply gave a locality of collection for each of his new taxa.

In the following discussion, type material is cited, and the locality and date of collection is amplified using information extracted by W. G. Dore from James McNab's unpublished journal; this journal, in the archives of the Royal Botanic Garden, Edinburgh, is being edited for publication by Dore. The numbers (e.g. Dore 201) quoted have been assigned to McNab's American specimens by Dore, and appear on the original specimen in DBN; a full set of xerox reproductions of these specimens (also bearing Dore's numbers) is deposited in the National Herbarium of Canada, Ottawa (CAN).

JAMES MCNAB'S TYPE SPECIMENS

The International Code of Botanical Nomenclature (Sydney edition) contains explicit guide-lines for the determination of type specimens, and these have been followed in this paper. We have not attempted herein to define the precise status of the type material noted for most of the taxa, but it may be suggested that the majority—probably all—of the specimens are suitable to act as lectotypes as defined by the ICBN (T.4(a): 'a lectotype must be chosen from among elements that were definitely studied by the author up to the time the name of the taxon was published') (see also Rollins, 1980).

Patrinia longifolia J. McNab in Edinburgh New Phil. J. 19:59-60 (1835).
[= *Valeriana edulis* Torrey & Gray].
Type: Banks of the Maitland River, Goderich, U.C. [Upper Canada], August 1834, *J. McNab* (DBN), (Dore 201).

On the banks of the Maitland River, Goderich in Upper Canada (now in the province of Ontario) during August 1834, McNab collected specimens of a plant which he recognized as a species of *Patrinia* (Valerianaceae), but '... quite distinct from any hitherto described, all of which with the exception of the one just mentioned [*Patrinia ceratophylla* Hook.], have yellow flowers, and are natives of temperate or Northern Asia' (McNab, 1835). Although he obtained only flower buds which were '... of a whitish colour', McNab considered that this was a new species and published the name *Patrinia longifolia* for it.

Meyer (1951) revised the North American taxa of *Valeriana* (including *Patrinia*) and placed McNab's *P. longifolia* within *Valeriana edulis* Torrey & Gray subsp. *ciliata* (Torrey & Gray) Meyer. Although the name *V. edulis* post-dates the publication of McNab's *Patrinia longifolia*, the combination *Valeriana longifolia* (based on McNab's name) cannot be made as it would be a later homonym of *V. longifolia* Humboldt, Bonpland & Kunth (1818).

Meyer (1951) did not cite a type specimen nor designate a lectotype for McNab's name; indeed he does not appear to have examined any of McNab's collections. There is a specimen of *P. longifolia* in James McNab's herbarium now in DBN; it is annotated by McNab and must represent original (i.e. type) material used by the author.

Liatris borealis Nuttall ex J. McNab in *Edinburgh New Phil. J.* 19:60 (1835). Type: [4 miles east of Stotler's Inn], Allegheny Mountains, Pennsylvania, [13] September 1834, *J. McNab* (DBN), (Dore 236).

While staying for four days at Stotler's Inn, eighty miles by stage-coach east of Pittsburgh in the Allegheny Mountains of Pennsylvania, near the present village of Reel's Corners, between 12 and 15 September 1834, McNab collected a fine species of *Liatris* (Asteraceae) which possessed numerous heads of '... large light purple flowers' (McNab, 1835). Later, during a stay in Philadelphia, he had an opportunity to examine specimens in the herbarium of Thomas Nuttall, Professor of Botany in Harvard University, who was then on a journey in the western United States (McKelvey, 1955). In Nuttall's herbarium McNab noticed this same species and recorded that Nuttall had annotated specimens with the unpublished name *Liatris borealis*.

McNab chose to describe this particular species in his paper and to use the name that Nuttall had assigned; McNab (1835) acknowledged Nuttall's precedence. In a revision of *Liatris*, Gaiser (1946) maintained *L. borealis* as a distinct species, but improperly cited Nuttall as the sole author of the name (see ICBN Art. 46).

Gaiser (1946) assumed that the type specimen of this species was in Thomas Nuttall's herbarium, now in the British Museum (Natural History), London (BM); the Museum acquired Nuttall's collections in 1860. A set of Nuttall's specimens is also in the Academy of Natural Sciences, Philadelphia (PH). According to Gaiser (1946) there is no specimen of *L. borealis* from Nuttall's herbarium in the British Museum (Natural History). The specimen in PH was collected in Salem, Massachusetts, not in the Allegheny Mountains; although Gaiser suggested that this particular specimen '... may then be the type', it does not accord with the protologue. While it is possible that this PH specimen was seen by McNab in 1834, it is more probable that he based his description on the material which he himself collected, and thus the type should be designated from his personal herbarium.

There is one specimen of *L. borealis* in McNab's herbarium, annotated by him, and this would constitute original (i.e. type) material.

Liatris stricta J. McNab in *Edinburgh New Phil. J.* 19:60-61 (1835). [= *L. cylindracea* Michaux].

Type: dry moorland ground Brentford [Brantford], U.C. [Upper Canada], [11] August 1834, *J. McNab* (DBN), (Dore 210).

Among the many specimens of *Liatris* collected by McNab were representatives of the plant which '... adorned the road-sides for several miles through the pine barrens to the eastward of Brantford' (McNab, 1835). It was flowering on 11 August 1834 and McNab obtained many good specimens. He showed his material to Dr John Torrey who told McNab that he had received specimens of the same plant from Canada and that he had identified it as *Liatris cylindracea* Michx.

Gaiser (1946) discussed Michaux's original circumscription of the polymorphic *L. cylindracea* and the plethora of synonyms published by later authors. She accommodated James McNab's *L. stricta* within her broad view of *L. cylindracea*, noting that she had examined '... an isotype, if not the type ...' and citing a specimen in Philadelphia (PH). While that specimen

may be a duplicate of McNab's collection, it should not be regarded as 'the type' (i.e. holotype or lectotype), and although it may represent original material as defined by the ICBN, the monographer should have searched for and examined James McNab's working herbarium for the specimens indubitably used in the preparation of the original description (see e.g. Rollins, 1980).

There is a specimen in McNab's personal herbarium (DBN), annotated by McNab, and matching McNab's protologue in all particulars. Although McNab's name is now superseded—Gaiser's broad view of the genus having been generally accepted—it does require typification and the specimen in McNab's herbarium is probably that best suited for lectotypification.

Lobelia cardinalis*, [var.] *alba J. McNab in *Edinburgh New Phil. J.* 19:61 (1835), nec A. Eaton (1836).

Lectotype (chosen here): Goderich Road, U.C. [Upper Canada], [15 August 1834], *J. McNab* (DBN) (Dore 166).

James McNab named the white-flowered variant of *Lobelia cardinalis* L. without formally giving any indication of the rank which this subspecific taxon should have, but under ICBN (Art. 35.3) it should be treated as a botanical variety. In the protologue, McNab (1835) noted that in '... swampy places, Goderich Road ... the common scarlet kind covers large tracts ... Out of such quantities it was really surprising to see so few varieties [*sic.*]. A small number were observed of a delicate white, and some intermediate between that and scarlet, but the white variety was by no means plentiful.' The site where McNab gathered this white variety on 15 August 1834 was about half way between New London and Goderich, just north of the present town of Exeter in Huron County, Ontario. There is in his herbarium a specimen, clearly with white flowers, labelled '*Lobelia cardinalis alba*, Goderich road, U.C. Aug. 1834'; this is here designated as the lectotype of the variety.

While the white-flowered variety was described and validly named by James McNab in 1835, one year later Amos Eaton published the seventh edition of *A Manual of Botany*, and in it named this same variant using the same epithet but basing his description on a different collection. McNab's publication being largely unknown, Eaton has thereafter been credited with publication of the varietal epithet *alba*, but it is illegitimate being a later homonym and must be rejected.

This white-flowered variant is best considered to represent a botanical form (*forma*). St. John (1919) published the combination *L. cardinalis* f. *alba* (Eaton) St. John, but this is invalid as it is based on an invalid name (Eaton's superfluous homonym). However, it is impossible under ICBN to make a combination based on McNab's epithet as that would create another later homonym. The white-flowered *Lobelia cardinalis* therefore does not at present have a valid epithet at form level.

Although McNab annotated a specimen of the pink-flowered variant of *L. cardinalis* with the epithet '*rosea*', and used that name in his hitherto unpublished diary, he did not publish the epithet. Thus St. John's (1919) publication of *L. cardinalis* f. *rosea* remains valid.

Gentiana angustifolia [var.] ***nana*** J. McNab in Edinburgh New Phil. J. 19:62 (1835). [= *G. autumnalis* L.].

Type: Tuckerton, New Jersey, October 1834, *J. McNab* (DBN), (Dore 320).

This variety, originally described by McNab (1835) without any statement about rank, accommodated diminutive plants growing in 'dry pasture ground' at Tuckerton in New Jersey. McNab noted that the individuals were from '... 2 to 4 inches in height and [that] none exceeded 5 inches'. Despite careful examination of his own specimens, McNab was unable to find any character other than stature which could distinguish the plants in the Tuckerton population from others of the same species. However, in his manuscript diary he did make the following interesting statement: 'By cultivation we find both the tall [e.g. collected at Quaker Bridge] and dwarf [i.e. Tuckerton] varieties to remain distinct.'

McNab misapplied the specific name *Gentiana angustifolia*, which is correctly applied only to a European species of *Gentiana*. The North American species is properly referred to *G. autumnalis* L. (Pringle, 1967). Pringle discussed the merits of McNab's dwarf variety and concluded that it probably represented an ecad, the result of local environmental conditions; he decided not to recognize it as a good intraspecific variant.

There is in the McNab herbarium a specimen collected in October 1834 at Tuckerton, New Jersey, which is the locality cited by McNab (1835). This specimen represents the type material for McNab's validly published epithet *nana*. Pringle (1967) did not cite any of McNab's specimens nor did he designate a type for McNab's variant. Although the taxon is not given recognized status by Pringle, the name should still be typified.

Gentiana barbata Froel. β . [var.] ***browniana*** Hooker ex J. McNab in Edinburgh New Phil. J. 19:62 (1835). [= *Gentianopsis virgata* (Raf.) Holub.].

Type: Banks of the Maitland River, Goderich, U.C. [Upper Canada], [18] August 1834, *J. McNab* (DBN, Dore 173; also BM, MO, PH—n.v.).

McNab (1835) noted three intraspecific taxa within this species, α *sibirica*, β *browniana* and γ *richardsoniana*, and reported that it was '... the var. β alone of this plant which we found at Goderich, growing on the banks of the Maitland River, which it adorned with its copious and large pale blue flowers.' As McNab did not collect the varieties α and γ it is only relevant to discuss β *browniana* here.

McNab (1835) commented that the variety β linked *Gentiana barbata* Froel. and the '... *G. intermedia* of Dr. Richardson', which he cited as a synonym of his var. *richardsoniana*. In McNab's herbarium in the National Botanic Gardens, Glasnevin (DBN), there is a specimen labelled by McNab as follows:

Gentiana barbata var.
Banks of the Maitland river, Goderich U.C.
Aug. 1834

It does not bear Hooker's epithet 'browniana', but it does match exactly the description published by McNab, and may thus represent original material as defined under the ICBN. There is a second sheet of specimens in DBN,

also collected from the Maitland River, Goderich, in August 1834; it was annotated by McNab and named *Gentiana intermedia*, but it also represents McNab's taxon *Gentiana barbata* var. *browniana*. Incidentally, the varietal name was proposed by William Hooker (Professor of Botany in the University of Glasgow) to honour James McNab's patron, the nurseryman Robert Brown of Perth, Scotland (Nelson, 1977), who should not be confused with any other Scottish botanist of the same name, for example Robert Brown of Caithness who collected in British Columbia, and the more famous *Jupiter Botanicus*, Robert Brown of the British Museum.

In revising the genus *Gentianella*, Gillett (1957) placed McNab's *Gentiana barbata* var. *browniana* within *Gentianella crinita* (Froel.) G. Don subsp. *procera* (Holm) Gillett—this is the name recognized by Scoggan (1979) but the taxon is sometimes placed within *Gentianopsis virgata* (Raf.) Holub (Gillett, annot. 1986 in herb. DBN).

While McNab's varietal name is currently not in use it should still be typified. Gillett (1957) cited as the type a specimen (McNab s.n.) in Missouri Botanic Garden, St. Louis (MO), but he had only seen a photograph of it. Within the roster of collections listed by Gillett (1957) specimens labelled 'Banks of the Maitland River, McNab s.n.' were included (BM, PH) but they were not recognized by Gillett as being type material. However, each of these specimens and the specimen labelled 'Gentiana barbata var.' in McNab's herbarium (DBN) are duplicates of the original material, and the DBN specimen is the best candidate for lectotype.

The specimen which McNab named *Gentiana intermedia* (DBN, see above) has also been identified by Gillett as *Gentianopsis virgata* (annot. in herb. DBN). The status of McNab's other varieties of *Gentiana barbata* has not been investigated as there are no specimens of them in his herbarium (DBN).

ACKNOWLEDGEMENTS

We are grateful for the assistance of Miss M. J. P. Scannell, Grace Pasley, Bernie Shine and Catherine Gorman (DBN) during our herbarium studies. Our gratitude is due to Dr J. Gillett for his comments on McNab's Gentianaceae, to Dr B. J. Coppins for his useful criticisms, and to the Regius Keeper, Royal Botanic Garden, Edinburgh, for access to James McNab's unpublished manuscripts and for permission to publish extracts from them.

REFERENCES

- ANON. (1970). The Irish National Herbarium at Glasnevin, Dublin. *Taxon* 19:653.
- GAISER, L. D. (1946). The genus *Liatris*. *Rhodora* 48:331-383.
- GILLETT, J. M. (1957). A revision of the North American species of *Gentianella* Moench. *Ann. Missouri Bot. Gard.* 44:195-269.
- MCKELVEY, S. D. (1955). *Botanical exploration of the Trans-Mississippi West 1790-1850*. Cambridge, Mass.
- M McNAB, J. (1835). Account of some of the rarer plants observed during an excursion in the United States and the Canadas in 1834. *Edinburgh New Phil. J.* 19:56-64.

- MEYER, F. G. (1951). Valeriana in Northern America and the West Indies (Valerianaceae). *Ann. Missouri Bot. Gard.* 38:377-503.
- NELSON, E. C. (1977). The discovery in 1810 and subsequent history of *Phyllodoce caerulea* (L.) Bab. in Scotland. *The Western Naturalist* 6:45-72.
- (1980). A contribution towards a catalogue of collectors in the foreign phanerogam section of the herbarium, National Botanic Gardens, Glasnevin (DBN). *Glasra* 4:31-68.
- (in press). Scottish connections in Irish botany and horticulture. *Scottish Naturalist*.
- (in prep.). William Ramsay McNab's herbarium in the National Botanic Gardens, Glasnevin (DBN).
- PRINGLE, J. S. (1967). Taxonomy of *Gentiana*, section *Pneumonanth*e, in eastern North America. *Brittonia* 19:1-32.
- ROLLINS, R. C. (1980). On the process of lectotypification. *Rhodora* 82:509-511.
- ST. JOHN, H. (1919). Two color forms of *Lobelia cardinalis* L. *Rhodora* 21:217-218.
- SCOGGAN, H. J. (1979). *The Flora of Canada*. Pt. 4, pp. 1241-1244. Ottawa.