

Johan Ernst Adhemar Wirzén – the last demonstrator in botany at Alexander University

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Wirzén was the last Demonstrator in Botany (1839–1852) at Alexander University, Helsinki, Finland. His main duty was to instruct medical students on the subject of medicinal plants. He gave also lectures on officinal plants and plant taxonomy, and private lessons on plant physiology. He supervised six theses. In his own dissertation were given several erroneous records concerning vascular plants distributions in Finland. However, it was the first attempt to define the borders of biogeographical Finland. In 1833–1835 he studied Russian flora at Kazan University, on the Volga River. Based on field excursions there, he supervised a thesis *In geographica plantarum per partem provinciae Casanensis distributione illustranda periculum*. Two species new to science were described, viz. *Echinosperrum casanense* and *Stellaria mollis*, and seven new varieties. Corresponding specimens have not been found in the Finnish Museum of Natural History, Botanical Museum (H). Wirzén's new names have been completely overlooked by Russian and other taxonomists. Wirzén was considered to be a relatively weak botanist, but as a doctor of medicine he fared better.

Johan Ernst Adhemar Wirzén (27 January 1812–18 January 1857), Ph.D., was born in Pori, in southwest Finland. His parents were pharmacist Johan Jakob Wirzenius (later Wirzén) and Anna Elisabet Långhjelm. In 1842 Wirzén married Sofia Lovisa Forsten. He died in Helsinki on the 18th of January 1857.

On June 22nd 1826 Wirzén graduated from Åbo (Turku) secondary school. The following year there was the Great Fire of Turku, and consequently Åbo Academy was moved to Helsinki, which had been the new capital of Finland since 1812. There he studied natural sciences and medicine from 1831 to 1840 at the Imperial Alexander University (today University of Helsinki), with botany, zoology and medicine as his major subjects. He specialised in zoology under the supervision Carl Reinhold Sahlberg (1779–1860; Professor of natural history from 1820 to 1842) and

defended his Master's thesis *Insecta Fennica* on May 31st 1830. Wirzén obtained his Phil. Cand. Degree on May 31st 1831 and Phil. Mag. Degree on June 21st 1832.

Wirzén was accepted as a member of the *Societas pro Fauna et Flora Fennica* in 1829. The society had been founded by C. R. Sahlberg in 1821. Wirzén was its intendent for botanical collections from 1837 to 1842, and its vice president from 1842 to 1849. As the natural history collections were almost completely lost in the Great Fire, one of the Society's main tasks was to establish new ones. Together with Johan Magnus af Tengström, (1793–1856), associate professor in zoology and botany (1828–1842) and later professor (1842–1847), he formulated guidelines in the early 1840s for how to conduct field studies and collect animal and plant specimens on excursions financed by the Society (Elfving 1921).

Wirzén himself had participated in an excursion to Nordcap, Norway in 1830 (Hj. Hjelt 1891), and two years later visited Savo and Karelia (Carpelan & Tudér 1925). In 1833–1835 he studied Russian flora at Kazan University, on the Volga River. He made excursions in the Kazan area (1833), near the southern Ural mountains and semi-deserts of Kyrgyzstan (1834), and in the northern Caspian Sea region (1835) (Renvall 1891, Elfving 1921, Carpelan & Tudér 1925).

After returning to Helsinki Wirzén continued his medical studies, and obtained his B.M. degree on February 19th 1836 and Lic. Med. Degree on June 20th 1837. On October 11th 1837 he defended his licentiate thesis, "Native medicinal plants of Finland", under the formal supervision of Professor in theoretical and practical medicine, Immanuel Ilmoni (1797–1856), obtaining the degree of M.D. on July 17th 1840.

Officinal plants of Finland

In the introduction of his thesis Wirzén defined the borders of biogeographical Finland (Ilmoni & Wirzén 1837, Fig. 1). This was the first attempt to do so, and easternmost Karelia and the Kola Peninsula were included. Wirzén's borders were as follows: Gulf of Finland – Baltic Sea – Ahvenanmaa Sea – Gulf of Bothnia – River Tornionjoki – River Muonionjoki – River Könkämäeno – Lake Kilpisjärvi – Moskana mts. (Moskkogáissi, Moskukaisa) – Tschjatsekajsetunturit (Cohkku-giettivári) – Lyngefjord (Norway). The northern border was the Arctic Ocean including the Kola Peninsula. The eastern border was the White Sea – River Uikujoki (Vyg) – Lake Uikujärvi (Vygozero) – Lake Äänisjärvi (Onezhskoe ozero) – River Syväinjoki (Swir) – Lake Ladoga – River Neva. These borders were also defined in the *Prodromus Florae Fennicae* (Wirzén & Strandberg 1843).

Wirzén gave no explanations, why he had come to these lines, but it seems evident that the matter was under discussion – probably in the Fauna and Flora Society – and that Wirzén himself had noticed concerning borders in the east that the East Karelian flora was much closer to the Finnish flora than to the Russian one, with

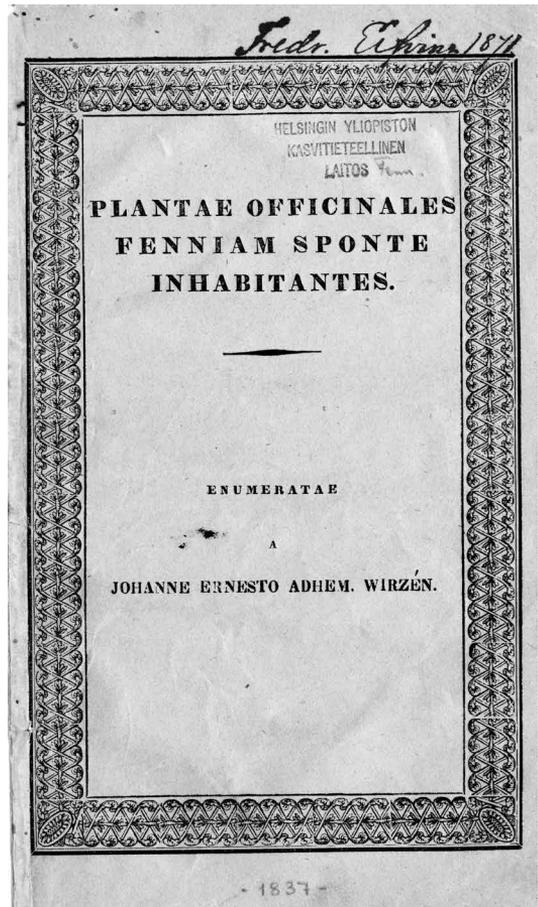


Fig. 1. Title page of Wirzén's *Enumeratio plantarum officinalium Fenniam sponte inhabitantium*. His thesis was published also as reprint, without any reference to supervisor Ilmoni.

which he had made personal acquaintance (Leikola 2009).

Wirzén's proposal was soon accepted and defined further in a compilation of Karelian flora (W. Nylander 1852) and in *Herbarium Musei Fennici* (W. Nylander & Saelan 1859). This was a catalogue of plant and fungal species from each biogeographical provinces of Finland. Enontekiö Lapland was excluded in the latter. Johan Petter Norrlin (1871) put the border further east to the western shore of Lake Ääninen, and A. K. Cajander (1900) defined it as the River Äänisjoki, the accepted eastern border of biogeographical Fennoscandia today. Some modifications were later made in the southeast.

However, the main subject was the medicinal (officinal) plants of Finland. The number of species presented was 335, including 13 algae and fungi. The previous summary of officinal plants included 138 species (Hellenius & Levin 1773). Wirzén's material was collected on the basis of his field excursions and the literature. Plants are arranged according to Linnaeus' system, and distributions and habitats are given, for example *Eupatorium cannabinum* on the shores of the River Kymijoki ("Hab. ad ripas fluminis Kymmene"). Curiously, their medical usage is not given. Some species, including most algae, occur in northern Norway only, which Wirzén included in his biogeographic Finland.

This work contained many errors, of which some were from the previous literature. Ten species did not occur in Finland at all (Hj. Hjelt 1891). Of these, seven were based on earlier information: *Circaea lutetiana* (Kalm & Granlund 1765), *Nasturtium officinale* [*Rorippa nasturtium-aquaticum*] (Kalm & Granlund 1765), *Oenanthe fistulosa* (Julin 1791), *Orchis latifolia* [*Dactylorhiza majalis*] (Kalm & Granlund 1765), *Orobanche major* (Radloff 1795), *Pedicularis sylvatica* (Julin 1791) and *Rumex acutus* (Kalm & Granlund 1765). The last refers to a common species in Finland, *R. longifolius*. *Euonymus europaeus* (Åland and Nylandia), *Lithospermum officinale* (Nylandia, Porvoo) and *Cnidium silaus* [*Silauus besseri*] (Nylandia) are errors made by Wirzén himself. Further, Hj. Hjelt (1891:53) estimated that one-third of the distribution information contained erroneous localities, and in many cases they were completely wrong. These were omitted by Nylander and Saelan (1859). Unfortunately, many erroneous distribution data were included by Fries (1846), von Ledebour (1842–1853) and Trautvetter (1849–1850). However, information on *Asplenium ruta-muraria*, *Galium mollugo* (*album*), *Ophioglossum vulgatum*, *Polygala amara* and *Veronica beccabunga*, new species to Finland, can be considered as reliable.

In the *Societas pro Fauna et Flora Fennica* archives, presently kept in the Finnish National Library in Helsinki, are two manuscripts by Wirzén. In them the distribution data is given more precisely than in the thesis. One is entitled *Annotationes ad Floram suecicam a G. Wahlenberg editam*, and the other is untitled (Hj. Hjelt

1891). In his *Conpectus Florae Fennicae*, Hj. Hjelt (1888–1926) shortened the name of the former manuscript as Wirz. M. S., the thesis as Wirz. pl. off., and the *Prodromus Florae Fennicae* as Wirz. Prodr.

Theses supervised by Wirzén

Based on his observations in Russia assembled from 1833 to 1835, Wirzén supervised the thesis *In geographica plantarum per partem provinciae Casanensis distributione illustranda periculum* (Fig. 2), defended by Petro Edvardo Åberg (Wirzén & Åberg 1839). Tsar Nikolai I had in 1832 granted a stipend to four gifted students, including Wirzen, to study the Russian language in Russia. Wirzén travelled to Kazan, 600 km east of Moscow. The thesis presents 658 plant species,

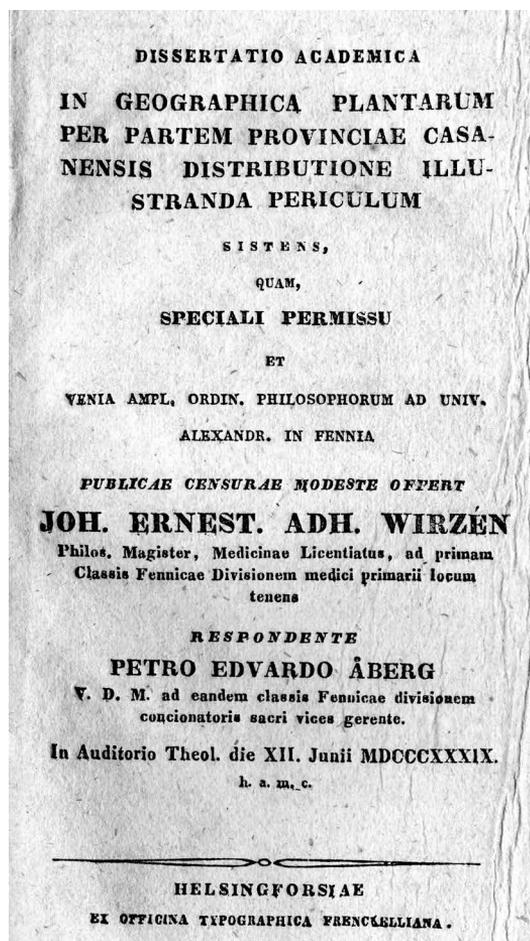


Fig. 2. Title page of "Casanensis".

for the first time in a Finnish publication arranged according to De Candolle's system. In its introduction he presents the species that characterise the vegetation of clay, sandy and calcareous soils, vegetation that have been influenced by humans, vegetation of forests, herb rich forests and water ecosystems. In addition, plants are listed which have dispersed from the southern steppes; from the northern forests, bogs and mires; and from Siberia to the east. Habitat, flowering months and abundance are given, and rare species' more exact localities. Two species new to science are described: *Echinosperrum casanense* (*E. lappula* according to Elfving 1918, viz. *Lappula aquarrosa*) and *Stellaria mollis* (*S. borealis* according to Elfving 1918), and seven new varieties, *Myosurus minimus* var. *maxima*, *Thlaspi arvense* var. *gracile*, *Lychnis flos-cuculi* var. *albiflora*, *Epilobium montanum* var. *rivale*, *Tragopogon pratensis* var. *undulates*, *Euphrasia officinalis* var. *major* and *Alopecurus pratensis* var. *nigrescens*. *Stellaria borealis* does not grow in the Kazan area. Some of these varieties may have been described earlier; this is not verified here. Corresponding specimens have not been found in the Finnish Museum of Natural History, Botanical Museum (H). As Wirzén was a member of the Faculty of medicine, the thesis was inspected by Professor of Medical Science, Lars Henrik Törnroth (1796–1864), and was considered to represent a medical thesis despite its entirely floristic content (Elfving 1918). Wirzén's new names have been completely overlooked by Russian taxonomists. As a result, Wirzén was appointed Demonstrator in Botany (1839–1852), and was the last person to hold this position. In this capacity his main duty was to instruct medical students on the subject of medicinal plants.

Prodrumus

The thesis "On Finnish plants" (Fig. 3) was to be series of dissertations on Finnish flora (Wirzén & Strandberg 1843, Wirzén & Rancken 1843). However, it was never finished. Strandberg (1822–47) died young, and Rancken (1821–97) became rector of Raumo primary school. Its second part ended abruptly in the middle of a sentence introducing the genus *Calamagrostis*. The obvious pur-

pose of the thesis was to advance Wirzén to the position of professor of natural history when Carl Reinhold Sahlberg retired in 1842. However, af Tengström had already been given the position. The thesis includes morphological characters and distribution information for 62 species. New or nearly new species to Finland with today's borders are *Veronica opaca* from Åland and the Åbo area (Wirzén & Strandberg 1843) and *Eriophorum chamissonis* [*russeolum*] from Enontekiö. However, Fr. Nylander (1843) had, three days earlier, published information concerning *V. opaca*.

Scriptores

"On the history of Finnish botany" (Fig. 4) already ended in its first part (Wirzén & Nykopp 1843). It was defended by the forthcoming vicararian of Ristiina, Nicolao Gustavo Nykopp (1821–72). It attempts to clarify the plant names of the first catalogue of Finnish plant species, published by Tillandz (1683a) and based on observations made mainly in the Åbo area. *Androsace septentrionalis* was new record to Finnish flora, as Tillandz's *Androsace* (scientific name), Siönafvel, Kartnagelsgräas (Swedish names) and Ryhmylijäinen Kynnen Ruoho (Finnish name) meant, according to Skepparnabb (1961), some unknown green algae (Siphonoclares). The front cover by Icones (Tillandz 1683b) represents it. Wirzén and Nykopp (1843) considered the name to belong to *Androsace septentrionalis*, and that is had been found in the Åland and Åbo regions. These are the first records in Finland. Further, Wirzén and Nykopp (1843) believed that handwritten notes in one of Tillandz's (1683a) catalogues maintained in the National library of Finland would have been made by the bishop of Åbo, Carl-Fredric Menander (1712–1786), Professor of natural history at the Turku Academy from 1746 to 1751. O. E. A. Hjelt (1868, 1889) considered that the notes were made by Johan Leche (1702–1764), Turku Academy Professor of medical science from 1748 to 1764. It is known that he planned to write a *Flora Fennica*.

On March 4th 1843 O. E. A. Hjelt (1823–1913), forthcoming Professor of pathology (1859–1884) and archiatre, defended under the supervision of

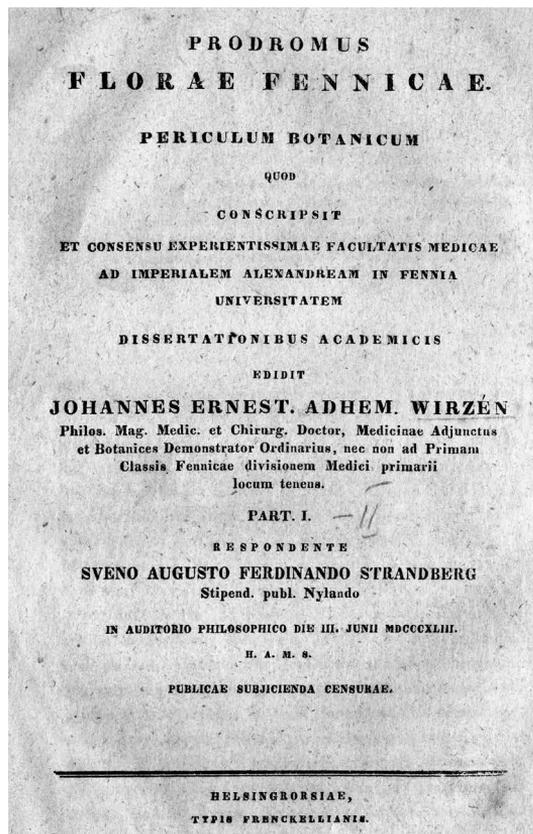


Fig. 3. Title page of Prodrömus.

af Tengström, his thesis "Natural history studies in Finland before Linnaeus" (af Tengström & O. E. A. Hjelt 1843). Hjelt later compiled several major works on the history of biology and medicine in Finland. He remarked in his thesis that Tillandz's (1683a) *Anthyllis leguminosa* could by no means be *Anthyllis vulneraria* (af Tengström & O. E. A. Hjelt 1843:63), as proposed by (Ilmoni & Wirzén 1837). Wirzén responded to that in the thesis defended by Nykopp a bit later, on May 24th 1843, and criticised Hjelt for being an arrogant juvenile. The thesis had been written by Wirzén, and Nykopp, unaware of the debate, asked Hjelt to act as the official opponent. Hjelt took up the issue with serious words, and Nykopp could do nothing but wonder why the opponent was so "stomachosus", meaning pompous, but also a person with large stomach. Wirzén happened to be very fat, and the audience at the defence burst out laughing (E. Hjelt 1916:35). Although this matter seems of minor importance, the academ-

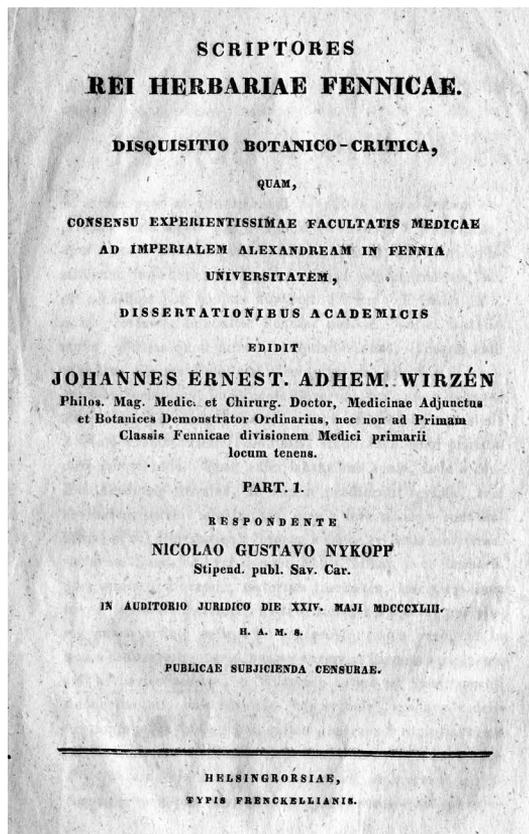
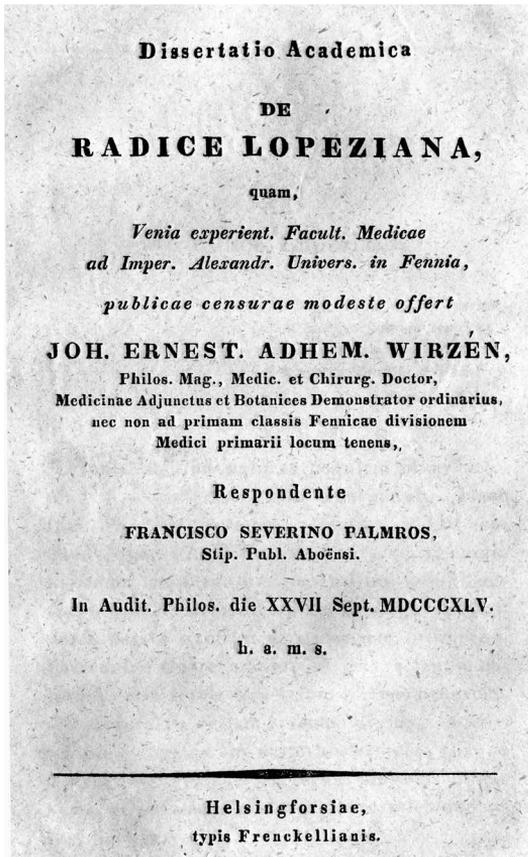


Fig. 4. Title page of Scriptores.

ic career of Wirzén became blocked. Later O. E. A. Hjelt (1868) wrote diplomatically that Wirzén was the one who began to clarify the meaning of the names Tillandz used. Hjelt also completely ignored the existence of *Anthyllis leguminosa* in his own clarification concerning names used by Tillandz. Perhaps he realised Wirzén was right. Wein (1930) also considered that this name belonged to *Anthyllis vulneraria*.

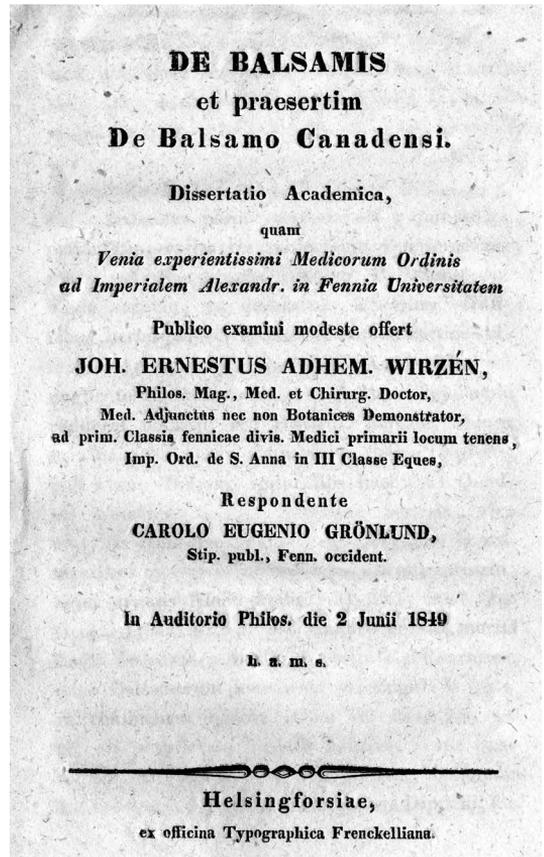
Thesis on officinal plants

After Wirzén failed to gain a professorship in natural history he again began to study officinal plants. He supervised two theses on the subject (Wirzén & Palmros 1845, Wirzén & Grönlund 1849), both of poor quality. Palmros (1822–63) became lecturer of college in Åbo and Grönlund (1831–81) in Borgå. The official opponents discarded both theses (E. Hjelt 1916). Official oppo-

Fig. 5. Title page of *Lopeziana*.

ment Professor of chemistry Adolf Moberg (1813–1895) discarded the thesis entitled *Radice lopeziana* (Fig. 5) (Wirzén & Palmros 1845), which examined the medicinal properties of *Quassia simaruba* roots. In 1845 Wirzén had aimed to be appointed Professor of pharmacy and pharmacology, and in 1849 a Professor of pharmacology. Between the public defences Wirzén studied chemistry at Göttingen in 1846 under the supervision of Professor of chemistry Friedrich Wöhler (1800–82) (Renvall 1891), which resulted in no publications. Wirzén returned to Helsinki, and the next thesis was discarded by Professor of chemistry Adolf Edvard Arppe (1818–1894). The subject was the medicinal properties of *Balsamo canadensi* (Fig. 6), a resin produced by *Abies balsamea* (Wirzén & Grönlund 1849).

Thereafter Wirzén left botany and medicine behind, and began to study theology. He was ordained a priest in Åbo on June 21st 1854. At uni-

Fig. 6. Title page of *Balsamo*.

versity Wirzén gave lectures on officinal plants and plant taxonomy, and private lessons on plant physiology (Fr. Elfving 1918, E. Hjelt 1916:27). He was not considered to be particularly skillful (E. Hjelt 1916:27). Hj. Hjelt (1891: 53) described Wirzén as a relatively weak botanist, but as a doctor of medicine he fared better (Fr. Elfving 1918).

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