

TYPIIFICATION OF THE *HIERACIUM* (ASTERACEAE) NAMES DESCRIBED BY J. FREYN FROM TURKEY

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Abstract. Nine names in *Hieracium* s.l. by Josef Freyn and three names by Karl H. Zahn from Turkey are lectotypified from among specimens stored at BRNM. For another two species the holotypes were found in BRNM and WRSL. The authorship of the name *H. leucothecum* is 'R. Uechtr.' under Art. 46.2 of the *Code*. All discussed taxa are illustrated by photos of original specimens.

Key words: Bornmüller, *Hieracium*, Sintenis, Turkey, typification, Zahn

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INTRODUCTION

Josef František Freyn (1845–1903), a Czech botanist and eminent expert on the European flora, described 20 taxa of *Hieracium* s.l. from the territory of present-day Turkey (Sell & West 1975). Three names given below, recognized by Freyn but which he only put on the herbarium labels, were subsequently formally described by Karl Hermann Zahn (1865–1940), monographer of the genus *Hieracium*. They were based on material collected by Paul Ernst Emil Sintenis (1847–1907), a German pharmacist from Breslau (now Wrocław), enthusiastic explorer of the Asia Minor flora, and on a collection of Josef Friedrich Nicolaus Bornmüller (1862–1948), another German botanist from Weimar and Jena, who had been exploring the flora of Southeastern Europe and Western Asia.

Freyn's herbarium, containing almost complete original material of the *Hieracium* taxa he described, is now deposited at the Moravian Land Museum in Brno (BRNM) (Křivka & Holubec 2010). In their work on the genera *Hieracium* L. and *Pilosella* Vaill. for *Flora of Turkey and the East Aegean Islands*, Sell and West (1975) limited their search to revision of material at the Botanical Museum in Lund (LD), where only some of the duplicates Sintenis collected in Asia Minor are preserved. They found the original material and

designated lectotypes only for six names of species Freyn described (Sell & West 1975).

During revision of material in the BRNM herbarium I found original material for 16 taxa Freyn described from Turkey and for three taxa Zahn described, out of which I designated lectotypes for twelve names. *Hieracium leucothecum* R. Uechtr. validated by Freyn is represented by the holotype stored at the Natural History Museum of Wrocław University (WRSL).

Unfortunately, the original material of *H. anatolicum* Freyn & Sint., *H. eginense* Freyn & Sint. and *H. tempedense* Freyn & Sint. is still lacking.

Illustrated here are all lectotypes designated in this paper and two holotypes (Figs 1–14) as well as the BRNM-deposited original specimens of the six taxa names lectotypified previously by Sell and West (1975), which have not been illustrated elsewhere (Figs 15–20). Accessibility of material or illustrations for comparison is crucial when determining collected specimens from the genus *Hieracium*.

RESULTS

Hieracium armenum Freyn & Sint. Fig. 1

Oester. Bot. Z. 42: 344. 1892 – TYPE LOCALITY: 'Armenia turcica. Sipikor: in silvaticis ad Kainikdere die

31. julii 1890 detexit Sintenis (Exsicc. no. 3318)' – LECTOTYPE (designated here): Armenia turcica. Sipikor: in silvaticis ad Kainikdere, 31.07.1890, *P. Sintenis 3318* (BRNM 8602/36) – OTHER SPECIMEN: Armenia turcica. Sipikor: Kainikdere auf buschigen Hängen (in quercetis) unter *H. lanceolatum* (no. 3316a) und *H. foliosum* WK. (no. 3316b), 30.07.1890, *P. Sintenis 3316c* (BRNM 8601/36).

NOTES. Specimen BRNM 8601/36 was collected in Kainikdere, near or even on the *locus classicus*, on July 30, whereas the protologue gives July 31.

***Hieracium auropurpureum* Freyn** Fig. 2

Oester. Bot. Z. **41**: 11. 1891 [no type locality] – *H. igneum* Freyn, Oester. Bot. Z. **42**: 268. 1892 *nom. illeg. superfl.* (Art. 52.1) – LECTOTYPE (designated here): Amasia: in regione conicerarum mts. Akdagh 600 m.s.m., 20.06.1889, *J. Bornmüller 568* (BRNM 12144/36).

NOTES. In the protologue, Freyn (1891: 11) did not include information on the collection locality. In his herbarium I found two sheets (BRNM 12144/36 and BRNM 12146/36) with Bornmüller-collected specimens determined by Freyn as *H. auropurpureum* ('*aureo-purpureum*'). As lectotype of the name *H. auropurpureum* I have chosen specimen BRNM 12144/36 (Fig. 2). According to Freyn the second specimen (BRNM 12146/36) represents a distinct taxon which he marked '*H. auropurpureum* forma' on the label (Fig. 3). Later, *Hieracium bauhini* subsp. *auropurpureoides* Bornm. & Zahn was described from this specimen (see below).

Hieracium igneum Freyn, proposed as a *nomen novum* for *H. auropurpureum* Freyn (Freyn 1892: 268), is illegitimate under Art. 52.1 of the *Code* (McNeill *et al.* 2006), as Nägeli and Peter (1885: 295) described *H. aurantiacum* subsp. *auropurpureum* Nägeli & Peter.

Hieracium bauhini* subsp. *auropurpureoides
Bornm. & Zahn Fig. 3

in Engler, Das Pflanzenreich **IV.280**: 1432. 1923 – TYPE LOCALITY: 'Südlicher Pontus: Yildiss-Dagh, 2200 m (Bornmüller, Pl. Anat. or. n. 2237 als *H. aureo-purpureum* Freyn forma). Beryt-Dagh im Taurus in Kataonien (Haussknecht, It. Syr.-Arm. n. 1039. 1865).

Berdak bei Baiburt (*H. sabinum* E. Bourgeau, Pl. Armen. n. 138 pp. 1862).' – LECTOTYPE (designated here): Pontus australis: in alpinis montis Yildiss-dagh 2200 m s.m., *J. Bornmüller 2237* (BRNM 12146/36).

***Hieracium bornmuelleri* Freyn** Fig. 4

Oester. Bot. Z. **41**: 54. 1891 – TYPE LOCALITY: 'Cappadocia in summo jugo Karababa (Akdagh) alt. 1900–2000 m. die 2. augusto 1889 (Exsicc. Nr. 1455) et prope urbem Amasia in regione superiore montis Sanadagh alt. 1400–1600 m. die 15. et 16. julio 1889 (Exsicc. Nr. 1450) leg. Bornmüller' – LECTOTYPE (designated here): Cappadocia borealis: in summo jugo Karababa (Akdagh) alt. 1900–2000 m s.m., 2.08.1889, *J. Bornmüller 1455* (BRNM 7185/36).

Hieracium camkorijense* subsp. *onosmopsis
Zahn Fig. 5

in Engler, Das Pflanzenreich **IV.280**: 1048. 1921 – TYPE LOCALITY: 'Türkisch-Armenien: im Nadelwald Kalibaschi-Orman am Karagöll-Dagh im Sandschak Gümüşkhane (Sintenis n. 7183a p.p. pro *H. vulgatum* var. *rosulatum* Freyn, n. 7787b p.p. pro *H. vulgatum* var. *hirsutissimum* Freyn)' – LECTOTYPE (designated here): Armenia turcica. Szanschak Gümüşkhane. Karagöllldagh. In silva acerosa Kalibaschi-orman prope Artabir, 29.07.1894, *P. Sintenis 7187b* (BRNM 8596/36).

NOTES. In the protologue, Zahn (1921: 1048) enumerates two sheets (syntypes) Freyn determined as *H. vulgatum* var. *hirsutissimum* and *H. vulgatum* var. *rosulatum*, but Freyn did not publish these names.

Sheet BRNM 8596/36, designated as lectotype of the name *H. camkorijense* subsp. *onosmopsis*, was erroneously cited in the protologue as *P. Sintenis 7787b*.

***Hieracium cappadocicum* Freyn** Fig. 6

Oester. Bot. Z. **41**: 55. 1891 – TYPE LOCALITY: 'Cappadocia bor.: in regione alpina montis Akdagh alt. 1900–2200 m, die 2. augusto 1889 (exsicc. no. 1458 p.p.) leg. Bornmüller' – LECTOTYPE (designated here): Cappadocia borealis: in regione alpina mts. Akdagh alt. 1900–2200 m s.m., 2. Aug. 1889, *J. Bornmüller 1458* (BRNM 7293/36) – ISOLECTOTYPE: (BRNM 7295/36).

***Hieracium cappadocicum* var. *congestum* Freyn**
Fig. 7

Oester. Bot. Z. **41**: 56. 1891 – TYPE LOCALITY: ‘Cappadocia bor.: cum typo mixtum (exsicc. no. 1458 p. p.) et ibidem alt. 2000–2300 m in jugo Karababa die 2. augusto 1889 (exsicc. 1457) denique ibidem ad 14–1600 m s.m., die 29. junii 1889 (exsicc. 565) leg. Bornmüller’ – LECTOTYPE (designated here): Cappadocia borealis: in reg. alpina montis Ak-dagh in jugo Karababa alt. 2000–2300 m s. m. 2. Aug. 1889, *J. Bornmüller 1457* (BRNM 7294/36) – SYNTYPE: Amasia: in subalpinis mt. Ak-dagh alt. 14–1600 m s.m., 29. Jun. 1889, *J. Bornmüller 565* (BRNM 7292/36).

***Hieracium leucothecum* R. Uechtr.** Fig. 8

Oester. Bot. Z. **42**: 343. 1892 – TYPE LOCALITY: ‘Troas: Mons Ida, in rupestribus montis Kapu Dagh die 21. junii 1883 leg. Sintenis (Iter trojanum anni 1883 no. 687bis)’ – HOLOTYPE: Ida, Felsen Kapu-Dagh, 21.06.1883, *P. Sintenis 687bis* (WRSL s.n.).

NOTES. In the protologue, Freyn (1892: 343) quoted the diagnosis written in Uechtritz’s hand on the herbarium sheet (Fig. 8). See also the footnote (Freyn 1892: 343): ‘Die folgende Beschreibung ist von dem Zettel der im Herbare Sintenis aufbewahrten Originalpflanze abgeschrieben’. That sheet evidently is the holotype of *H. leucothecum*. As Freyn ascribed both the name and the validating diagnosis to Uechtritz, the authorship of the name is ‘R. Uechtr.’ alone under Art. 46.2 of the *Code* (McNeill *et al.* 2006).

***Hieracium odontophyllum* var. *eriocephalum* Freyn & Sint.**
Fig. 9

Oester. Bot. Z. **42**: 342. 1892 – TYPE LOCALITY: ‘Prope Sipikor typo promiscue provenit [Armenia turcica, Sipikor: in quercetis versus Jerbatan] (Exsicc. no. 3313d)’ – LECTOTYPE (designated here): Armenia turcica Sipikor: in quercetis versus Jerbatan unter *H. pannosum* (3313e), *H. bornmuelleri* (3313c) u. *H. lazicum* (3313a), 7. Aug. 1890, *P. Sintenis 3313d* (BRNM 7278/36).

***Hieracium pannosiformae* Freyn & Sint.**
Fig. 10

Bull. Herb. Boiss. **3**: 504. 1895 [no type locality] – LECTOTYPE (designated here): Armenia turcica. Szanschak Gümüşkhane. Tempede, in saxosis, 9.08.1894, *P. Sintenis 7183a3* (BRNM 7180/36).

***Hieracium praelongipes* Zahn** Fig. 11

in Engler, Das Pflanzenreich **IV.280**: 590. 1921 – *H. longipes* Freyn & Sint., Oester. Bot. Z. **44**: 262. 1894 *nom. illeg.* (Art. 53.1.) – TYPE LOCALITY: ‘Paphlogoniae, Tossia: In pineto inter Schakylar et Jokarki Dikmen die 16. julio 1892 unicum specimen leg. Sintenis (sine no.)’ – LECTOTYPE (designated here): Paphlogonia. Wilajet Kastambuli. Kiefernwald zwischen Schakirla und Jokardi Dikmen (Tossia), 16.07.1892, *P. Sintenis s.n.* (BRNM 7287/36).

***Hieracium sipikoreense* Freyn & Sint.** Fig. 12

Oester. Bot. Z. **42**: 270. 1892 – TYPE LOCALITY: ‘Cum *H. sintenisii* promiscue provenit [Armenia turcica. Sipikor: ad versuras circa 1300 m supra mare die 30. julii 1890 leg. Sintenis] (Exsicc. no. 3315b)’ – LECTOTYPE (designated here): Armenia turcica. Sipikor: ad versuras circa 4000’ cum *H. sintenisii* no. 3315 mixtum et *H. magyricum* no. 3315c, 30.07.1890, *P. Sintenis 3315b* (BRNM 12353/36).

NOTE. *Hieracium sipikoreense* Freyn & Sint. was described at species rank as one of three taxa belonging to the collective species *H. sintenisii* (Freyn 1892: 269).

***Hieracium subrosulatum* Freyn & Sint.**
Fig. 13

Bull. Herb. Boiss. **3**: 503. 1895 [no type locality]. – LECTOTYPE (designated here): Armenia turcica. Szanschak Gümüşkhane. Gumusch: Tempede in saxosis, 9.08.1894, *P. Sintenis 7183c* (BRNM 7253/36).

***Hieracium tuberculatum* Freyn & Sint.**
Fig. 14

Oester. Bot. Z. **44**: 261. 1894 – TYPE LOCALITY: ‘Paphlogoniae, Tossia: in monte Giaurdagh die 29. julio 1892 unicum specimen florentem leg. Sintenis (sine num.)’ – HOLOTYPE: Paphlogonia. Wilajet Kastambuli. Tossia Giaurdagh, 29.07.1892, *P. Sintenis s.n.* (BRNM 7288/36).

FREYN’S *HIERACIUM* NAMES TYPIFIED EARLIER
BY P. D. SELL AND C. WEST

***Hieracium mannagettae* Freyn** Fig. 15

Bull. Herb. Boiss. **6**: 986. 1898 – *H. beckianum* Freyn & Sint., Bull. Herb. Boiss. **3**: 669. 1895 *nom. illeg.*, non Gremlı – TYPE LOCALITY: ‘Armenia turcica, Gü-

müschkhane: in tractu Karagölldagh pineto Kalisbaschiorman ante anthesin die 29. julio 1894 Sintenis (exs. 7618) – LECTOTYPE (designated by Sell & West 1975: 733): *Sintenis 7618* (LD) – SYNTYPES: Armenia turcica. Szanschak Gümüşkhane. Karagölldagh: in pinetis Kalibaschiorman, 29.07.1894, *P. Sintenis 7618* (BRNM 8577/36), *P. Sintenis 7618* (BRNM 8578/36), *P. Sintenis 7193c* (BRNM 8579/36).

***Hieracium odontophyllum* Freyn & Sint.**

Fig. 16

Oester. Bot. Z. **42**: 270. 1892 [no type locality] – LECTOTYPE (designated by Sell & West 1975: 725): *Sintenis 3313c* (LD) – SYNTYPE: Armenia turcica. Sipikor: in quercetis versus Jerbatan unter *H. pannosum* (3313e) *H. lazicum* (3313a) *H. bornmuelleri* (3313b) 7.08.1890, *P. Sintenis 3313b* (BRNM 7277/36) [ut *H. odontophyllum* var. *angustifolia* Freyn & Sint. in schedis].

NOTES. The name *H. odontophyllum* var. *angustifolia* Freyn & Sint. was not published. The specimens so determined (BRNM 7277/36) show no differences from *H. odontophyllum* s.str. (see also Zahn 1921: 589).

***Hieracium paphlogonicum* Freyn & Sint.**

Fig. 17

Oester. Bot. Z. **44**: 260. 1894 – TYPE LOCALITY: ‘Paphlagoniae Tossia: in monte Giaurdagh die 29. julio 1892 deflorantem leg. Sintenis (Exsicc. no. 4821)’ – LECTOTYPE (designated by Sell & West 1975: 725): *Sintenis 4821* (LD) – SYNTYPE: Paphlagonia. Wilajet Kastambuli. Tossia: Giaurdagh, 29.07.1892, *P. Sintenis 4821* (BRNM 7291/36).

***Hieracium patentissimum* Freyn & Sint.**

Fig. 18

Bull. Herb. Boiss. **3**: 651. 1895 [no type locality] – LECTOTYPE (designated by Sell & West 1975: 728): *Sintenis 6272* (LD) – SYNTYPE: Armenia turcica. Szanschak Gümüşkhane. Argyridagh, in saxosis, 14.07.1894, *P. Sintenis 6272* (BRNM 7317/36).

***Hieracium reductum* Freyn & Sint.**

Fig. 19

Bull. Herb. Boiss. **3**: 507. 1895 [no type locality] – LECTOTYPE (designated by Sell & West 1975: 724):

Sintenis 7183a (LD) – SYNTYPES: Armenia turcica. Szanschak Gümüşkhane. Gumusch: Tempede, in saxosis, 9.08.1894, *P. Sintenis 7183a1* (BRNM s.n.), *P. Sintenis 7183b* (BRNM s.n.), *P. Sintenis 7183a1* (BRNM 7182/36).

***Hieracium sintenisii* Freyn**

Fig. 20

Oester. Bot. Z. **42**: 269. 1892 – TYPE LOCALITY: ‘Armenia turcica. Sipikor: ad versuras circa 1300 m supra mare die 30. julii 1890 leg. Sintenis (Exsicc. no. 3315a)’ – LECTOTYPE (designated by Sell & West 1975: 754): *Sintenis 3315a* (LD) – SYNTYPE: Armenia turcica. Sipikor, ad versuras circa 4000’ cum *H. sipicorensis* (no. 3315b) et *H. magyricum* (no. 3315a) (BRNM 69622).

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Fig. 1. Lectotype of *Hieracium armenum* Freyn & Sint. (BRNM 8602/36).



Fig. 2. Lectotype of *Hieracium auropurpureum* Freyn (BRNM 12144/36).



Fig. 3. Lectotype of *Hieracium bauhini* subsp. *auropurpureoides* Bornm. & Zahn (BRNM 12146/36).



Fig. 4. Lectotype of *Hieracium bormmuelleri* Freyn (BRNM 7185/36).



Fig. 5. Lectotype of *Hieracium camkorijense* subsp. *onsmopsis* Zahn (BRNM 8596/36).



Fig. 6. Lectotype of *Hieracium cappadicum* Freyn (BRNM 7293/36).



Fig. 7. Lectotype of *Hieracium cappadocicum* var. *congestum* Freyn (BRNM 7294/36).



Fig. 8. Holotype of *Hieracium leucothecum* R. Uechtr. (WRSL s.n.).



Fig. 9. Lectotype of *Hieracium odontophyllum* var. *eriocephalum* Freyn & Sint. (BRNM 7278/36).



Fig. 10. Lectotype of *Hieracium pannosiforme* Freyn & Sint. (BRNM 7180/36).



Fig. 11. Lectotype of *Hieracium praelongipes* Zahn (BRNM 7287/36).



Fig. 12. Lectotype of *Hieracium sipikorense* Freyn & Sint. (BRNM 12353/36).



Fig. 13. Lectotype of *Hieracium subrosulatum* Freyn & Sint. (BRNM 7253/36).



Fig. 14. Holotype of *Hieracium tuberculatum* Freyn & Sint. (BRNM 7288/36).



Fig. 15. Syntype of *Hieracium mannagettae* Freyn (BRNM 8577/36).



Fig. 16. Syntype of *Hieracium odontophyllum* Freyn & Sint. (BRNM 7277/36).



Fig. 17. Syntype of *Hieracium paphlagonicum* Freyn & Sint. (BRNM 7291/36).



Fig. 18. Syntype of *Hieracium patentissimum* Freyn & Sint. (BRNM 7317/36).



Fig. 19. Syntype of *Hieracium reductum* Freyn & Sint. (BRNM s.n.).



Fig. 20. Syntype of *Hieracium sintensis* Freyn (BRNM 69622).