A BRIEF BIOGRAPHY OF WOLFGANG WOLF AND TYPIFICATION OF THE PLANT NAMES HE PUBLISHED

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ABSTRACT

Wolfgang Wolf (1872–1950) was a German-born Benedictine monk and self-taught botanist who lived and worked at the St. Bernard Abbey in Cullman, Alabama, U.S.A. Wolf studied and documented the plant life of the north central region of the state, amassed a personal herbarium of thousands of sheets and became particularly expert in the genera *Talinum* and *Erythronium*. A brief biography of Wolf is presented, highlighting his little-known correspondences between many prominent botanists during the first half of the twentieth century. Typification of the nine names he published then follows, including the designation of four type specimens.

RESUMEN

Wolfgang Wolf (1872–1950) fue un monje benedictino y botánico autodidacta de origen alemán que vivió y trabajó en la Abadía de San Bernardo en Cullman, Alabama, EE.UU. Wolf estudió y documentó las plantas de la región centro-norte del estado, acumuló un herbario personal de miles de pliegos y llego a ser especialmente experto en los géneros *Talinum* y *Erythronium*. Se presenta una breve biografía de Wolf, destacando su poca conocida correspondencia con muchos botánicos prominentes durante la primera mitad del siglo XX. Sigue la tipificación de los nueve nombres que publicó, incluyendo la designación de cuatro tipos nomenclaturales.

Key Words: Wolfgang Wolf, Alabama, Cullman County, nomenclature, vascular plants, *Talinum, Erythronium,* typification

INTRODUCTION

Wolfgang Wolf was a little known but well respected botanist in Alabama, U.S.A., who described and published nine plant names throughout the first half of the twentieth century (Fig. 1). Wolf was born in Regensburg, Germany about 1872 and came to America in the mid-1890s to join the Order of Saint Benedict (OSB) as a lay brother at St. Bernard Abbey in Cullman, Alabama, which was established in 1891 (Auburn University Special Collections and Archives; http://stbernardabbey.com/history). Employed as a tailor at the Abbey, Wolf took preliminary steps toward the monastic life in 1898 and made his final vows as a lay brother in 1901. Additional biographical information about Wolf has been published in other sources (Shores 2010; Davenport 2015, 2016).

Wolf knew virtually nothing regarding the plants of northern Alabama and had no formal education on the topic. In response to an inquiry about when and why he came to Cullman, Alabama, Wolf gave a brief glimpse into the origin of his botanical studies. As land around the recently constructed abbey was being cleared of trees, Wolf's interest in the plant life of the area was piqued. A handwritten note by Wolf reveals both his unabashed ignorance of plants and his marked determination to begin an earnest self-study of the topic:

> "Came to St. B. in 1896; purpose: to join the Benedictine Order in the newly founded monastery as Lay-brother (lay-brothers in the order existed since the 12th century). St. Bernard was then in the pioneer stage, clearing etc. in full swing. ~~As a city boy completely ignorant ab. plants~~. Accompanying on Sundays those brothers occupied with during the week with the felling of trees I did not understand how they distinguished between different trees. On once asking a question the answer did not seem satisfactory to me. Getting from the library Gray's 5th ed. of his Manual, I worked independently. Remained at St. B. ever since my coming here." (Courtesy Auburn

Fig. 1. Photograph of Wolfgang Wolf taken near the end of his life (Courtesy Auburn University Special Collections and Archives).

University Special Collections and Archives, Wolfgang Wolf Papers, Box 2, Folder 19; strikethrough as originally written, Fig. 2).

Wolf learned botany from all sources at his disposal including available books in the abbey library (Wolf 1922), courses taught by correspondence from the Catholic University of America and writing directly to other expert botanists. Though never famous, Wolf established a respect from and collegiality with other leading botanists of his day and corresponded professionally with many notable botanists, herbarium curators and editors from across the country. Some letters are singular acknowledgments of receipt of specimens, reprints or identification verifications while others reveal rich, multi-year associations both professionally and personally between Wolf and his correspondents. Wolf became an expert at identifying species of *Talinum* and *Erythronium* and was regularly consulted about these taxa by others. His correspondence ranged wide and included such names as Albert S. Hitchcock and William R. Maxon of the Smithsonian Institution; Ernest J. Palmer, Ian D. Clement, Charles S. Sargent, and Benjamin L. Robinson of Harvard University; Paul C. Standley, Julian A. Steyermark, and Clifford Gregg of the Field Museum; Aaron J. Sharp of University of Tennessee, Knoxville; William W. Ashe, Ira M. Clokey, and J.M. Pickens of the USDA; John K. Small, Edward J. Alexander, and John H. Barnhart of New York Botanical Garden; Francis W. Pennell and Arthur N. Leeds of Academy of Natural Sciences, Philadelphia; C. Stuart Gager and Henry K. Svenson of Brooklyn Botanical Garden; Lincoln Constance of the University of California, Berkeley; Hugh O'Neil of the Catholic University of America; William Trelease of University of Illinois; Edward W. Berry of Johns Hopkins University; Edgar T. Wherry of the Uni-

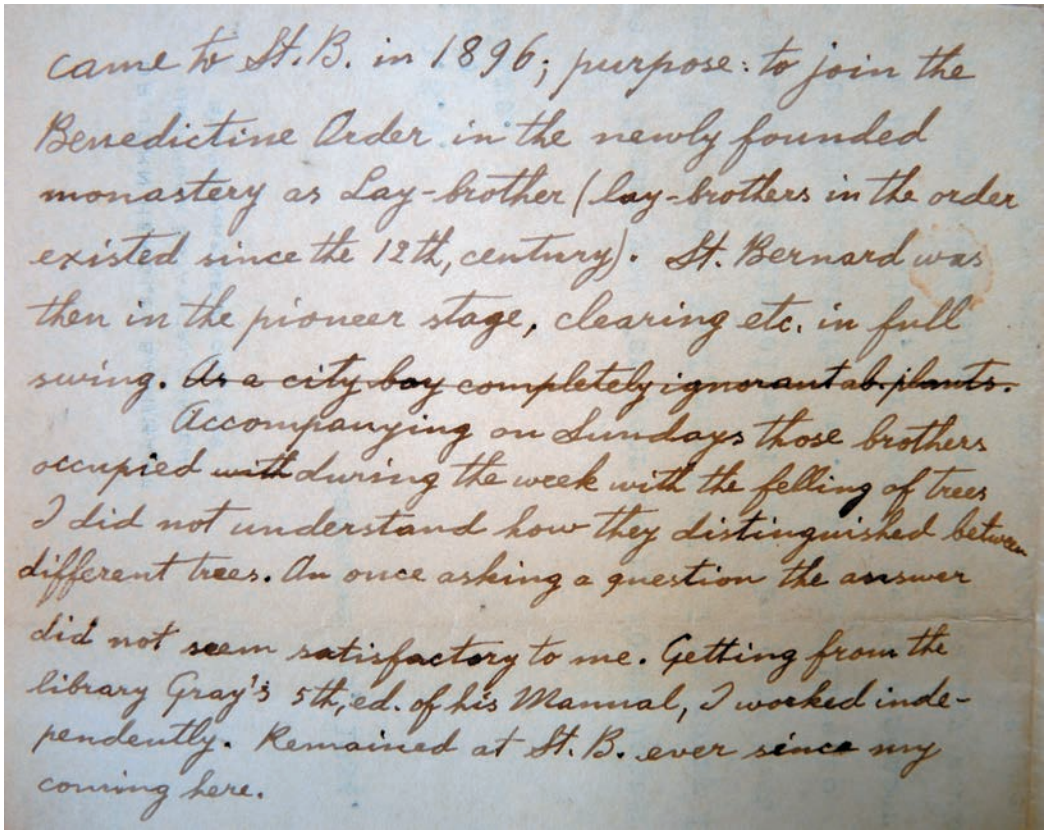
came to St. B. in 1896; purpose: to join the Benedictine Order in the newly founded monastery as Lay-brother (lay-brothers in the order existed since the 12th, century). St. Bernard was then in the pioneer stage, clearing etc. in full swing. ~~As a city boy completely ignorant ab plants.~~

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Fig. 2. Handwritten note by W. Wolf describing his arrival to the St. Bernard Abbey in Cullman Co., AL and the beginning of his botanical studies (courtesy Auburn University Special Collections and Archives, Wolfgang Wolf papers, Box 2, Folder 19).

versity of Pennsylvania; Eugene A. Smith and Roland M. Harper of the University of Alabama; Clair A. Brown of Louisiana State University; Thomas G. Harbison of University of North Carolina; Donovan S. Correll of Duke University; Herbert F. Copeland of Sacramento College; Theodor K. Just of Notre Dame; Basile J. Luyet of St. Louis University; Eileen W. Erlanson and John T. Baldwin, Jr. of University of Michigan; Earl L. Core of West Virginia University; and others (Auburn University Special Collections and Archives, W. Wolf papers).

In poor health for the last several years of his life, Wolf did little field work and left several unpublished works upon his death including preparations to name a new hybrid species of *Asimina* (see Morgan 1942:42) and works on azaleas and *Quercus nigra* L. Wolf died on September 22, 1950, was buried at the St. Bernard Abbey in Cullman, and was eulogized by long-time friend and colleague Roland Harper (Harper 1951). Beginning in 1900, every U.S. Census listed Wolf as either a tailor or student, but on the 1940 U.S. Census, Wolf's occupation was listed as "Botanist" (U.S. Federal Census records viewed at Ancestry.com, accessed June 2016). At 68 years old, this city boy had indeed come to know the plant life of north central Alabama.

During more than five decades of botanical studies Wolf accumulated thousands of plant specimens in the St. Bernard herbarium (ca. 4000 sheets), gathered from personal collecting and active exchange with other institutions. Designated SB by Index Herbariorum (Theirs 2016), the St. Bernard herbarium was transferred to the John D. Freeman Herbarium (AUA) in 1995 and is now part of the Auburn University Museum of Natural History (Hansen 2003). Two boxes of Wolfgang Wolf's personal papers, notes and drawings were also trans-

ferred to Auburn University and are housed in the Special Collections and Archives Department at the Ralph Brown Draughon Library.

As a field researcher and writer, Wolf was active throughout his career. Among the nine taxa he described and named (several now in synonymy) are two hybrid oaks, *Quercus* ×*bernardiensis* (Wolf 1918), in honor of the St. Bernard Abbey, and *Quercus* ×*capesii* (Wolf 1945a, b); two species of fame-flower or rock-pink, *Talinum mengesii* (Wolf 1920) and *Talinum appalachianum* (Wolf 1939); two species of trout-lily, *Erythronium rostratum* and *Erythronium harperi* (Wolf 1941), the latter named in honor of his friend and colleague, Roland Harper. In addition, Wolf erected the genus, *Cryptophila* (Ericaceae) (Wolf 1922) and the monotypic tribe Cryptophileae to accommodate it and named two infraspecific taxa of *Cryptophila pudica*, forma *maxima* and variety *knapkei*.

TYPIFICATIONS

Type statuses for the following names are presented and adherence to the International Code of Nomenclature for Algae, Fungi, and Plants (the *Code*; McNeill et al. 2012) was followed, as well as additional recommendations by McNeill (2014). Currently accepted names (in bold) are followed by synonyms, publication and collection information, type specimen, herbarium of deposition (all numbers following herbarium designations are accession numbers with the exception of WVA which is a barcode number), and additional notes. Results of this study add five additional type specimens to the John D. Freeman (AUA) herbarium at Auburn University (Hansen 2003).

Monotropeae Dumort. Anal. Fam. Pl. 47. 1829

=*Cryptophileae* W. Wolf, Amer. Midl. Naturalist 8:118. 1922. Type genus: *Cryptophila* W. Wolf.

Wolf established the monogeneric tribe Cryptophileae to accommodate his newly described genus *Cryptophila* (Wolf 1922). See further discussions below. Originally published as "*Cryptophileae*S," the capitalized, non-italicized "S" is attributed to a typing or printing error.

Monotropsis Schwein. ex Elliott. Sketch Bot. S. Carolina 1:478. 1817. Type species: **Monotropsis odorata** Schwein. ex Ell.

=*Cryptophila* W. Wolf, Amer. Midl. Naturalist 8:115. 1922.

Wolf erected the genus *Cryptophila* to accommodate diminutive plants with unique fruit characteristics, found on the grounds of the St. Bernard Abbey that resembled *Monotropsis odorata* but that he thought warranted generic recognition based on the small stature and description of the fruits (Wolf 1922). Fruit descriptions of *Monotropsis* given by other authors at that time were lacking sufficient detail and Wolf interpreted his plants differently enough to convince himself they warranted genus-level recognition. However, his Latin diagnosis of the genus *Cryptophila* very closely matches modern descriptions of *Monotropsis*, two genera which are not currently treated as synonyms (Wallace 2009).

Monotropsis odorata Schwein. ex Elliott. Sketch Bot. S. Carolina 1:479. 1817. Type: UNITED STATES. North Carolina. Stokes Co.

=*Cryptophila pudica* W. Wolf, Amer. Midl. Naturalist 8:117. 1922. Type: UNITED STATES. Alabama. Cullman Co.: dry woods, 1 Nov 1900, *N. Knapke & W. Wolf 1071* (holotype: not located and presumed lost or destroyed; neotype, **designated here:** UNITED STATES. Alabama. Cullman Co.: St. Bernard, upland woods, 17 May 1911, *W. Wolf 1075*, AUA-74581!).

After thoroughly searching the St. Bernard collection at AUA no holotype specimen was located but an unattached, hand written label dated Nov. 1, 1900 was found. This label has the holotype collection number 1071 and the inscription "*Monotropsis odorata*" written on it. This single loose label was never glued onto the herbarium sheet but was undoubtedly meant for Wolf's type of the name *Cryptophila pudica*. In the end, a synonym of *Monotropsis odorata* was created based on Wolf's misinterpretation of ovary morphology when compared with available references at that time, most of which lacked adequate gynoecium descriptions, in his estimation. Nuttall (1818) described *Schweinitzia* (=*Monotropsis*) plants from the mountains of North Carolina as having "5-celled?" fruit capsules. Wolf was not satisfied with this description and insisted that the Alabama

plants were different, having a "1-celled, 5-pouched" ovary and claimed it to be a new genus (Wolf 1922; Copeland 1939). Wolf essentially described the 1-locular, 5-carpellate ovary of *Monotropsis* well known today (Wallace 2009). Wolf noted that these plants could be found flowering in both late fall and in the spring, confirming a phenomenon later described as the seasonal phases of *Monotropsis odorata* (Wallace 2009). The specimen chosen as neotype is consistent with the type description in the protologue and is labeled with the epithet "*Monotropsis odorata densiflora*" (Fig. 3).

It is worth noting that none of the sheets found in the SB collection of this taxon (even specimens collected after the date of publication) carry the name *Cryptophila* on the label—they all bear the epithet *Monotropsis odorata*. One wonders if Wolf was fully convinced of his new genus and species. Wolf wrote several other infraspecific names on labels based on varying morphological differences he interpreted among specimens of *Monotropsis odorata*. These names, never published and noted here as *manuscriptum* (*ms*) or instances of *nomen nudum*, include four varieties, *altissima*, *chamaecephala*, *densiflora*, and *gracilis,* and one forma, *hexaloba*.

=*Cryptophila pudica* W. Wolf forma *maxima* W. Wolf, Amer. Midl. Naturalist 8:117. 1922. TYPE: UNITED STATES. ALABAMA. Cullman Co.: 4 Mar 1913, *W. Wolf 1452* (HOLOTYPE: AUA-74580!).

The name *Monotropsis odorata* var. "*altissima*" is written on the label of this holotype specimen, but Wolf apparently chose to formally publish it as forma *maxima* based on a population of unusually tall plants though the measurements are well within the normal scape height of *Monotropsis odorata* (Fig. 4).

=*Cryptophila pudica* W. Wolf var. *knapkei* W. Wolf, Amer. Midl. Naturalist 8:118. 1922. TYPE: UNITED STATES. ALABAMA. Cullman Co.: (HOLOTYPE: Illustration 3 of plate II, in Wolf, W., 1922. Notes on Alabama plants. Amer. Midl. Naturalist 8:104–127. EPITYPE, **designated here:** UNITED STATES. ALABAMA. Cullman Co.: St. Bernard, dry woods, 9 Dec 1913, *W. Wolf s.n.,* AUA-74579!).

For *C. pudica* var. *knapkei*, Wolf referenced an illustration (Fig. 5a) of live plants in his original paper (Wolf 1922: illustration 3 of plate 2) as the holotype for this name. Though uncommon, an illustration can serve as original material if the author expressly designated it in composing the protologue (see Art. 9.1 and Art. 8.1, incl. footnote 1; McNeill et al. 2012). The only other mention in the protologue of specimens associated with this varietal name was a colony of "extreme dwarf" (scapes from 1.5–2 cm) plants discovered in "March 1910," but there is no indication that any collections were made and no herbarium sheet was found matching this later date (Wolf 1922). The holotype photograph is in black-and-white and of low quality such that the plants "cannot be critically identified for purposes of the precise application of the name to a taxon" (under Art. 9.8 of the Code, McNeill et al. 2012), therefore an epitype specimen is designated to support the original holotype photograph. Among the extant collections of *Monotropsis* dating from 1911 to 1916 is one collected by Wolf that matches the Latin diagnosis of scapes up to 2 cm and bears a handwritten label with the varietal inscription "*chamaecephala,*" indicating its low-growing habit (Fig. 5b). This taxon was named in honor of fellow Brother Norbert Knapke, the original discoverer of *Cryptophila* (Wolf 1922).

Erythronium americanum Ker-Gawl. ssp. **harperi** (W. Wolf) Parks & Hardin, Brittonia 15:252. 1963.

≡*Erythronium harperi* W. Wolf, Castanea 6:24. 1941 [as *Harperi*]. TYPE: UNITED STATES. ALABAMA. Marion Co.: rich woods along Buttahatchie River, Hamilton, 16 Apr 1938, *M. Morgan s.n.* (LECTOTYPE: SB-4340, designated by Parks & Hardin 1963—not located and presumed lost or destroyed; LECTOTYPE, **designated here:** US-1786964, image!; ISOLECTOTYPES: US-1786965, image!, F-1071538, image!, F-1071539, image!, CM-111274, image!, CM-111273, image!). Additional SYNTYPES: SB-4312 and SB-4340—not located.

Wolf listed two syntypes for *E. harperi*, 4312 and 4340 for flower and fruit, respectively; however no sheets with those numbers were found in the SB collection. Wolf listed additional "co-types" that were deposited at US and F (Wolf 1941). Later, Parks and Hardin (1963) designated the lectotype of *E. harperi* to be SB 4340 but since the designated lectotype was based on an original SB collection that was not found and presumed lost or destroyed, a new lectotype (US-1786964) was chosen here from among the existing syntypes in accordance with the Code, Art. 9.12 (McNeill et al. 2012). This taxon was named in honor of Roland M. Harper, Alabama State Geologist, long-time collaborator and good friend whom Wolf acknowledged as the original discoverer of this plant (Wolf 1941; Shores 2010).

Erythronium rostratum W. Wolf, Castanea 6:24. 1941. TYPE: UNITED STATES. ALABAMA. Blount Co.: woods, Warnock Mt.,

Fig. 3. Neotype of *Cryptophila pudica* W. Wolf (AUA-74581).

Fig. 4. Holotype of *Cryptophila pudica* W. Wolf forma *maxima* W. Wolf (AUA-74580).

Fig. 5a. Holotype photograph of *Cryptophila pudica* var. *knapkei*, "Illustration 3 of plate II," from the original protologue (Wolf 1922) (courtesy of JSTOR).

4 Apr 1938, *M. Morgan s.n.* (LECTOTYPE: US-1786963, image! SYNTYPES: US-1786962, image!, F-1071536, image!, F-1071537, image!). Additional SYNTYPES: SB-4171 and SB-4224—not located.

As with *E. harperi*, Wolf named two type specimens, SB-4171 and SB-4224, and sent duplicate sets of "co-types" to both US and F (Wolf 1941). Parks and Hardin (1963) designated the lectotype of *E. rostratum* to be the US specimen, dated 4 April 1938.

Quercus ×bernardensis W. Wolf [*Q. prinus* × *Q. stellata*], Torreya 18:161. 1918 [as *bernardiensis*]. TYPE: UNITED STATES. ALABAMA. Cullman Co.: along the Little River, *W. Wolf 1580a* and *b* (LECTOTYPE: **designated here:** UNITED STATES. Alabama. Cullman Co.: bank of Little River, 28 Apr 1918, *W. Wolf s.n.* SB-1580, AUA-74601!).

Wolf originally listed two type collections (syntypes) in the protologue, numbers "1580a and b" (Wolf 1918). One specimen was found with the accession number 1580, but without any letter designation. This specimen (SB-1580, accessioned as AUA-74601) surely represented Wolf's concept of this taxon and is designated as lectotype (Fig. 6). This hybrid taxon was named in honor of the St. Bernard Abbey, Cullman, Alabama.

Quercus ×capesii W. Wolf [*Q. nigra* × *Q. phellos*], Castanea 10:120. 1945a [as *Capesii*]. TYPE: UNITED STATES. ALABAMA. Cullman Co.: on St. Bernard College ground, 22 Oct 1945, *U. White s.n.* (HOLOTYPE: US-1874796, image!; ISOTYPES: A (no accession or barcode number), image!, NA (no accession or barcode number), image!, WVA-V-0007347, image!).

In a supplement to his protologue naming *Quercus ×capesii*, Wolf designated the type specimen to be sent to US with "co-types" distributed to the other institutions listed above. The NA specimen was originally sent to the Catholic University of America (LCU), the types of which were later transferred to NA (Thiers 2016). Wolf included PH in the list of co-type recipient institutions however this sheet was not located upon a recent inquiry (E. Benamy, March 2016, pers. comm.) and may possibly be lost. This taxon was named in honor of Andrew Capesius, a fellow brother at the Abbey who cultivated this naturally occurring hybrid on abbey grounds from seed originally collected from *Quercus phellos* (Wolf 1945a).

Phemeranthus parviflorus (Nutt.) Kiger, Novon 11:320. 2001.

≡*Talinum parviflorum* Nutt. J. Torrey & A. Gray, Fl. N. Amer. 1: 197. 1838. TYPE: UNITED STATES. ARKANSAS: n.d., *T. Nuttall s.n.* (possible isotypes or syntypes at K (Kiger 2001)).

=*Talinum appalachianum* W. Wolf, Amer. Midl. Naturalist 22:319. 1939. TYPE: UNITED STATES. ALABAMA. Chilton Co.: on granite rock about 300 yards from Coosa River, one mile below Mitchell Dam, 17 Aug 1937, *M. Morgan & M. Mages s.n.* SB-4211 (HOLOTYPE: AUA-74602!).

Fig. 5b. Epitype of *Cryptophila pudica* W. Wolf var. *knapkei* W. Wolf (AUA-74579).

Fig. 6. Lectotype of *Quercus* ×*bernardensis* W. Wolf (AUA-74601).

Fig. 7. Holotype of *Talinum appalachianum* W. Wolf (AUA-74602).

Fig. 8. Holotype of *Talinum mengesii* W. Wolf (AUA-60731).

Though sparse in length, Nuttall's original description of *T. parviflorum* (Torrey & Gray 1838) is consistent with Wolf's later description of *T. appalachianum* which was subsequently transferred in synonymy under *Phemeranthus parviflorus* (Kiger 2001). Kiger (2003) noted that there is considerable morphological variation in *P. parviflorus* and that populations found at the edge of the species' range may exhibit more extreme variation. Alabama populations of this taxon are notably disjunct from most other populations of *P. parviflorus* found west of the Mississippi River and Wolf was aware of this fact. He suggested that the *T. appalachianum* (Fig. 7) population from Chilton Co. might represent the "eastern counterpart" of *T. parviflorum* (Wolf 1939). However, despite the disjunct range, chromosomal and crossing studies between *T. parviflorum* and *T. appalachianum* revealed identical chromosome numbers and fertile hybrids between the two, further supporting the current synonymy (Murdy & Carter 2001).

Phemeranthus mengesii (W. Wolf) Kiger, Novon 11:320. 2001.

≡*Talinum mengesii* W. Wolf, Amer. Midl. Naturalist 6:153. 1920 [as *Mengesii*]. TYPE: UNITED STATES. ALABAMA. Cullman Co.: St. Bernard, Eight-Mile Creek, near exposed sandstone rock, 9 Aug 1919, *W. Wolf s.n.* SB-1668 (HOLOTYPE: AUA-60731!).

Likewise transferred in synonymy under *Phemeranthus* (Kiger 2001), *P. mengesii* is an easily distinguished but uncommon southeastern species, having petals greater than eight mm long, stamens more than 50, and a subcapitate stigma mounting a style that surpasses the stamens. This species was named in honor of Benedict Menges, Abbot of St. Bernard at the time Wolf lived there. Previously documented by Hansen (2003), this holotype (Fig. 8) is listed again in the context of Wolf's entire published body of work.

ACKNOWLEDGMENTS

I thank the curators, collections managers, and staff at A, CM, F, NA, PH, US, and WVA for assistance locating and providing photographs of specimens. Staff at the Auburn University Special Collections & Archives Department gave helpful access to the Wolfgang Wolf papers. I am grateful to T.W. Barger for initial discussions about this topic and to L.J. Davenport for comments on an earlier draft of the manuscript. I acknowledge R. Soreng and E. Tripp for critical and thorough reviews. I am grateful to D. Laurencio for the Spanish translation of the abstract. This is contribution no. 736 of the Auburn University Museum of Natural History.

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