

## Theodor von Heldreich (1822-1902) and His Turkish Collections

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**Abstract:** The distinguished German botanist Theodor von Heldreich (1822-1902) visited Anatolia on at least 6 separate occasions as documented by specimens cited in *Flora of Turkey* and *Flora Orientalis*. His first visit was in 1845 and his last, to İzmir, in 1852. Within this period of less than seven years he collected c. 3000 sets of specimens. They included the types of nearly 200 new taxa and, if including syntypes and lectotypes, the figure is 207. The majority stem from the first expedition of 1845. The non-type specimens cited in the *Flora* are 280. It is difficult to trace Heldreich's itinerary from the *Flora* alone as precise dates and numbers are rarely provided in the citations. However, by studying actual specimens deposited in herbaria we can obtain more information and this work is in progress. Heldreich's Turkish collections are represented in 27 herbaria located in 12 European countries excluding 2 in the United States. He is commemorated by the genus *Heldreichia* Boiss. (Brassicaceae), which has 4 species in Turkey. Numerous other taxa bear the epithets *heldreichii*, *heldreichianus*, *-a* or *-um*. At least 18 such taxa are listed in the *Flora of Turkey*. Heldreich died in Athens at the age of 80. He had 3 daughters and his youngest daughter lived till the 1960s. There are no surviving descendants.

**Key Words:** *Flora of Turkey*, Heldreich, Turkish collections, type specimens

### Theodor von Heldreich (1822-1902) ve Türkiye Koleksiyonu

**Özet:** Tanınmış Alman botanist Theodor von Heldreich (1822-1902), *Flora of Turkey* ve *Flora Orientalis*'te yer alan örneklerinin kayıtlarına göre, Anadolu'ya en az altı kez gelmiştir. İlk kez 1845'te gelmiş ve son gelişini İzmir'e 1852'de yapmıştır. Yedi yıldan az süren bu gezilerinde, takriben 3000 örnek toplamıştır. Koleksiyonu içinde yaklaşık 200 yeni takson vardır. Sintip ve lektotipleri de ilave edersek, tip örnek sayısı 207'yi bulur. Bunların büyük kısmı ilk 1845 gezisinde toplanmıştır. *Flora*'da kayıtlı olan tip dışı örneklerin sayısı 280'i bulur. Sadece *Flora*'dan faydalanarak, Heldreich'in gezi yollarını saptamak imkansızdır. Çünkü bu eserdeki Heldreich'in örnek kayıtlarında kesin toplama tarihi ve örnek numarası verilmemiştir. Bununla beraber, herbaryumlarda halen saklı bulunan örneklerinin incelenmesiyle daha fazla bilgi temin etmemiz mümkün olacaktır ki, böyle bir çalışma henüz sürdürülmektedir. Heldreich'in Türkiye örnekleri, 12 Avrupa ülkesinde 27 herbaryuma, ilaveten A.B.D.'de 2 herbaryuma dağılmıştır. Heldreich'in adı yeni bir cinse verilmiştir: *Heldreichia* Boiss. (Brassicaceae). Türkiye'de bu cinsin 4 türü vardır. Birçok takson adında *heldreichii*, *heldreichianus*, *heldreichiana* veya *heldreichianum* epitetine rastlarız. *Flora of Turkey*'de bu tip en az 18 takson adı vardır. Heldreich, Atina'da 80 yaşında iken vefat etmiştir. Üç kızı vardı. En genç kızı 1960'lara kadar yaşamıştır. Bugün, soyundan yaşayan kimse yoktur.

**Anahtar Sözcükler:** *Flora of Turkey*, Heldreich, Türkiye bitkileri, tipörnekler

### Introduction

We are interested in the botanical collections of Theodor von Heldreich, a man who died 105 years ago. They are important because although his number of specimens is small the number of types is large (Figure 1).

For this presentation we have consulted the Anatolian specimens collected by him and which are cited in *Flora of Turkey* (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000) and *Flora Orientalis* (Boissier, 1867-1881; Boissier, 1888).

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We have learned that the herbarium of Theodor von Heldreich, professor of botany and director of the Botanic Garden, Athens, is for sale. It contains approximately 20,000 species, and richly represents the floras of Greece, Asia Minor, and Egypt. It contains also hundreds of types and authentic specimens of new species described by Heldreich in the works of Boissier.

Figure 1. Announcement of sale of Heldreich's herbarium.

Heldreich collected the type specimens of 196 new taxa from Anatolia, which are still valid and have not been relegated to synonymy. The numbers of Turkish specimens cited in the relevant volume of *Flora of Turkey* are as follows:

Vol. 1: 14; 2: 29; 3: 20; 4: 17; 5: 26; 6: 45; 7: 37; 8: 5; 9: 2 and 10: 1.

The type specimens number 207 if we also include syntypes and lectotypes. They are from only 7 provinces: Antalya, Burdur, Isparta, Karaman, Konya, Niğde and İzmir. Most of them were collected during the first expedition of 1845. Seven specimens are dated 1846. There is only 1 in each of the years 1847, 1849, and 1851. The earliest (*Anchusa limbata*, Heldreich 468) was collected on 12 March 1845 from C3 Antalya. *Verbascum antinori* (Heldreich 2179), thought to be one of the latest, was collected on 3 July 1851 from B1 İzmir. However, we note there is an undated specimen from Uludağ (A2 Bursa) which bears the number Heldreich 2533; so this could be the last Anatolian type specimen he collected.

The non-type specimens cited in the volumes of the *Flora* are 280 in number. Thus 487 Anatolian specimens from Heldreich are cited in the *Flora of Turkey* of which 207 are type specimens.

#### The Anatolian expedition of 1845

Even now, it is not possible to trace the full itinerary for Heldreich's 1845 expedition because to do so it is necessary to go through several herbaria. The first set of his collections was acquired by Berlin (B) but this was completely destroyed in 1943 when the city was bombed. Incomplete sets and individual specimens exist elsewhere. Even then the list would not be complete, as there are many specimens without precise dates and many are unnumbered. And you have to know the taxonomic group. Heldreich also gave plants to numerous botanists as gifts or in exchange, e.g., P.B. Webb. However, we can provide a few short notes based on a study of his specimens and Anatolian localities.

*March to May:* Antalya.

*May to August:* Burdur, Isparta, Karaman, Konya, and Niğde. He must have returned to Antalya as there are specimens collected from Antalya and from Geyik dağı in July. He visited Tahtalı dağ and Bey dağı in May; he collected on Karadağ in June and July; he explored Davras dağı from May to August; he was on Anamas dağı in August.

*August:* Antalya.

*End of September:* the type specimen of *Verbascum cilicium* (not to be confused with *Verbascum cilicum* Boiss.) was collected from Bolkar dağı on 27 September, "[Turkey C5 Niğde] in saxosis Tauri Cilici ad radices

montis Bulghurdagh prope Tchiftékhan, *Heldreich* 1260 (holo. GI)”. This seems to be one of the later numbers of his 1845 expedition.

We presume that Heldreich probably collected more than 1300 specimens (with several sets of duplicates) on his first Anatolian expedition.

#### Other visits to Anatolia

From scattered references in *Flora of Turkey* there is evidence that after the long expedition of 1845 Heldreich came again to Anatolia in 1846, 1847, 1849, 1851 and 1852.

1846 Antalya, Isparta and Konya (Vol. 2: 118, 197; Vol. 3: 436; Vol. 5: 408; Vol. 6: 566, 674; Vol. 8: 439)

1847 Konya (Vol. 5: 290) and Izmir (Vol. 6: 407)

1849 Isparta (Vol. 7: 17)

1849 Antalya (Vol. 6: 718)

1851 İzmir (Vol. 6: 548, dated 3 July)

1852 İzmir (Vol. 9: 8) *Juncus maritimus* (B1 Izmir: Elias nr Smyrna) was one of the specimens recorded in this later year.

Heldreich had visited Uludağ as indicated by an undated specimen of *Gymnadenia conopsea* which bears the highest Anatolian number: A2(A) Bursa: Olympus Bithynus, *Heldreich* 2533. We will search for other references to confirm and supplement our findings. One locality to be verified is from Vol. 6: 255. There is a specimen citation for *Heliotropium supinum* without date or number, “A7 Trabzon: Trabzon, *Heldreich*”. Did Heldreich botanise in NE Anatolia? We do not know.

#### Extent of Heldreich's Turkish collections

In *Flora of Turkey* we found that the highest specimen number (2533) is for a specimen collected from Uludağ (Bursa). The specimen dated 1852 from İzmir (Vol. 9: 8) was unfortunately not numbered. This suggests that the Anatolian collections of Heldreich may comprise c. 3000 numbers (with sets of duplicates).

#### Herbaria

According to the *Flora of Turkey*, Heldreich's Anatolian type specimens are distributed in the following herbaria:

B, BM, CGE, E, FI, G, GH, GOET, H, JE, K, LE, LIV, LIVU, M, MO, OXF, P, PR, TO, UPS, W, WU, Hb. Hub.-Mor.

GH (Harvard) and MO (Missouri) are in the USA; the others are in Europe (27 herbaria in 12 countries). Lanjouw & Stafleu (1957) list only 11 herbaria where Heldreich's West Anatolian material collected in 1846 and 1851 can be found. BORD, LY, LZ, TCD, and WAG are to be added to the above list. Heldreich distributed many sets of his collections, which sometimes had up to 8 duplicates.

#### Genus named after Heldreich

Edmond Boissier (1810-1885), the celebrated Swiss botanist, describer of many species from Spain and author of *Flora Orientalis*, etc., dedicated the genus *Heldreichia* (Brassicaceae) in honour of Heldreich's successful collecting expedition to Italy (Sicily, Campania, Toscana) in 1840-1841. Heldreich was at that time only 19 and his first botanical publication was on 3 new species from Sicily. *Heldreichia* (Figures 2) is represented in Turkey by 4 species, with the fourth species, *H. atalayi* Kit Tan, described in 1986.

#### Boissier-Heldreich collaboration

Boissier was fortunate to have the valuable collections of Heldreich at his disposal. When describing new taxa, he accepted Heldreich as a co-author. Approximately 140 Turkish taxa have as authors “Boiss. & Heldr.” When Boissier had to name them alone, he gave credit to Heldreich and never failed to use Heldreich's name in the epithets.

Taxa in *Flora of Turkey* with the epithets *heldreichii* or *heldreichianus*, -a, -um

1: 531 *Viola heldreichiana* Boiss.

2: 236 *Silene heldreichii* Boiss.

2: 415 *Alcea heldreichii* (Boiss.)Boiss.

3: 205 *Astragalus heldreichii* Boiss.

3: 415 *Trifolium heldreichianum* Hausskn.

4: 300 *Eryngium bourgatii* Gouan subsp. *heldreichii* (Boiss.) Davis

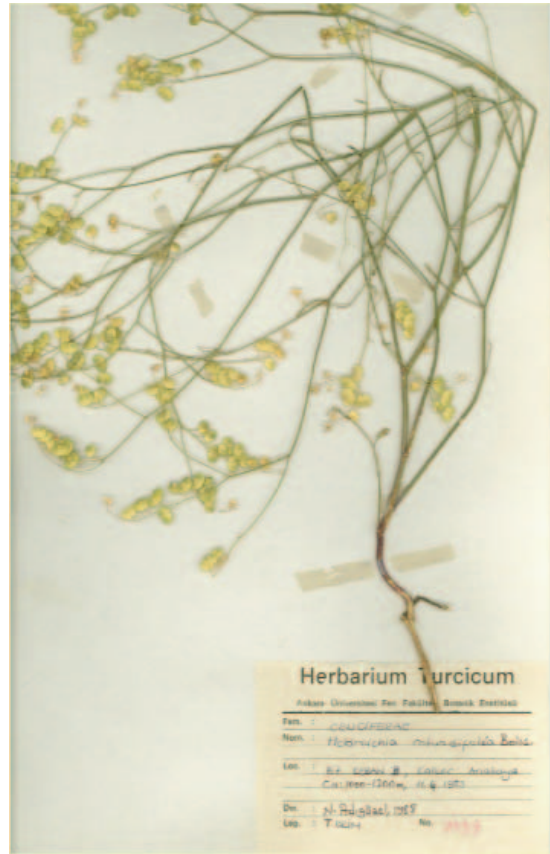
4: 398 *Bupleurum heldreichii* Boiss. & Bal.

6: 87 *Jasione heldreichii* Boiss. & Orph.

6: 589 *Verbascum cheiranthifolium* Boiss. var. *heldreichii* Boiss.

7: 10 *Orobanche heldreichii* (Reuter) G. Beck

7: 209 *Stachys germanica* L. subsp. *heldreichii* (Boiss.) Hayek



Figures 2. *Heldreichia* in Turkey.

7: 424 *Salvia heldreichiana* Boiss. ex Bentham

7: 793 *Galium heldreichii* Hal.

8: 276 *Hyacinthella heldreichii* (Boiss.) Chouard

8: 496 *Ophrys oestriifera* Bieb. subsp. *heldreichii* (Schlechter) Soó

9: 5 *Juncus heldreichianus* Marsson

9: 239 *Aegilops comosa* Sm. subsp. *heldreichii* (Boiss.) Eig

11: 252 *Colchicum heldreichii* K.M. Perss.

Taxa named by Boissier bearing the name of Heldreich are in the genera *Alcea*, *Allium*, *Alsine*, *Anemone*, *Astragalus*, *Bellevalia*, *Bupleurum*, *Carum*, *Chaerophyllum*, *Crataegus*, *Cyperus*, *Echinops*, *Eryngium*, *Fumaria*, *Helichrysum*, *Hieracium*, *Hypericum*, *Jankaea* (Figure 3), *Leontodon*, *Muscari*, *Oenanthe*, *Papaver*, *Rhamnus*, *Salvia*, *Scrophularia*, *Senecio*, *Silene*, *Stachys*, *Verbascum*, and *Viola*.

Taxa named by other botanists are in the genera *Acer*, *Aegilops*, *Alyssum*, *Arum*, *Asperula*, *Avena*, *Centaurea*, *Cirsium*, *Digitalis*, *Euphorbia*, *Galium*, *Gonolimon*, *Isoetes*, *Jasione*, *Juncus*, *Lilium*, *Myosurus* (Figure 4), *Nepeta*, *Onobrychis*, *Phelypaea*, *Pinus* (Figure 5), *Ranunculus*, *Rosa*, *Trifolium*, etc.

Some of them have been reduced to synonymy, e.g., *Rosa heldreichii* is now *Rosa villosa* and *Onobrychis heldreichii* is *Onobrychis alba*. Altogether c. 700 taxa were named based on Heldreich's collections (Halácsy, 1902).



Figure 4. *Myosurus heldreichii*. This was published by A. Lévillé after Heldreich's death in 1902. The plants were collected by Heldreich on his last excursion in 1901 and labelled with the unpublished name "*Myosurus sanctus* Heldr. nov. sp."



Figure 3. *Jankaea heldreichii* on Mt Olympus, named after V. Janka and Heldreich.



Figure 5. *Pinus heldreichii* H. Christ.

### Turkish specimens of Heldreich cited in *Flora Orientalis*

Edmond Boissier in Geneva had a great interest in Heldreich's collections as he was intending to prepare a flora of the Near East covering the geographical area from Greece and Egypt towards the east and up to Turkestan. He encouraged Heldreich, who was by then director of the Botanical Garden in Athens and collecting all over Greece, to explore also the south and western parts of Anatolia. Heldreich gave his collections to Boissier, who identified them. We found that 676 Anatolian specimens had been cited by Boissier in the 6 volumes of *Flora Orientalis*. They are mainly from the south, including Pamphylia, Lycia, Pisidia, Isaurica, Lycaonia, and Cilicia. The citations were only of localities which were in accordance with those mentioned in *Flora of Turkey*, but bore no date or number, except one in Vol. 4: 1167 (Lydiae, Heldr. 2185!). We can safely state that this specimen was collected in 1851; as we see in *Flora of*

*Turkey* Vol. 6: 548, there is a Heldreich type specimen no. 2179 which was collected from İzmir in Lydia on 3 July 1851.

Two monocot specimens cited in *Flora Orientalis* Vol. 5 reveal that Heldreich had visited İstanbul.

5: 115 "circa Byzantium et Scutari (Auch. 2123 ! Heldr.!)"

5: 664 "insula Prinkipos prope Byzantium (Heldr.!)"

It is possible that he visited Troas as indicated in citations for 2 species of *Muscari*.

5: 290 "in agro Trojano (Schmidt ex Heldr.)"

5: 290 "in agro Trojano (Schmidt ex Heldr.). Non vidi".

By studying actual specimens deposited in herbaria we can obtain more information, e.g., from the *Flora* the information provided is "Lycia, Karabahir, Mt Climax, *Heldreich*" but from the specimen itself "Karabahir, mt Climax (Solyma), 24.3.1845, *Heldreich* 503 (G-Boiss.)".

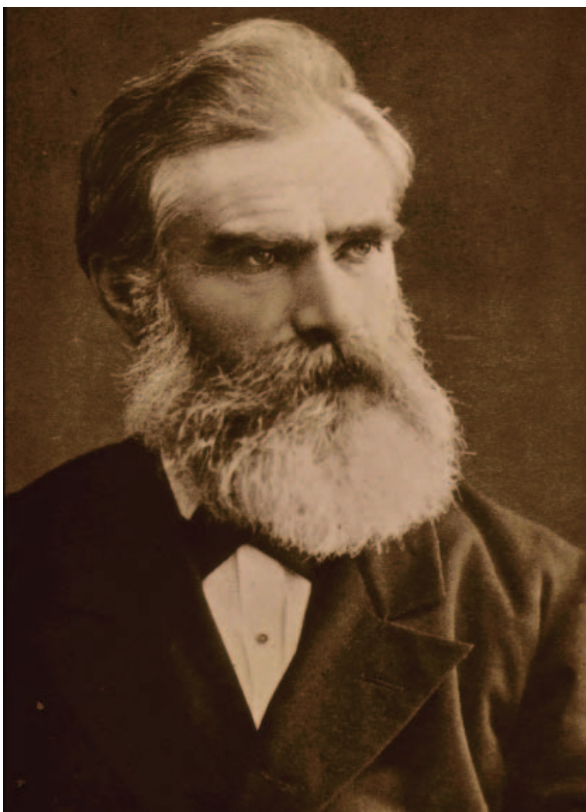


Figure 6. Theodor Heinrich Herman von Heldreich (1822-1902).



Figure 7. Gravestone of Heldreich's eldest child, Minna.

### Who was Heldreich?

Theodor Heinrich Herman von Heldreich (Figure 6) was a distinguished German botanist born to an old aristocratic family in Dresden on 3 March 1822. Besides German, his native language, he was fluent in French, Greek, Latin, and Italian. At the age of 18 in the years 1840-1841, he made his first botanical journey to Italy

and Sicily. His successful collecting in Sicily was the reason for Boissier's dedication of the genus *Heldreichia* when he was only 19. He completed his botanical education in Geneva and became curator of the De Candolle herbarium when he returned from Sicily (1841-1842). He went to Greece in 1843 or 1844 and stayed there till 1849, travelling extensively. His first expedition to Anatolia was



Figures 8. The Heldreich family gravestone.



Figure 9. The Mindler family gravestone.

in 1845. In 1846 he went to İzmir and Chios. For a short period (1850) he was curator of the P.B. Webb herbarium in Paris. He went to Greece again in 1851 and remained there for the last 53 years of his life as director of the Botanical Gardens in Athens, from 1851 until his death in 1902. He was also director of the Natural History Museum, University of Athens from 1858-1883 and created the departments of zoology and palaeontology.

He also taught natural history from 1880 to 1883 to the children of the royal family. Heldreich published extensively, with more than 70 publications relevant to the Greek flora in reputable journals in Greece and abroad. He died in Athens at the age of 80, on 7 September 1902.

#### Family

In 1855 Heldreich married Sophia, daughter of I. Katakuzenos and granddaughter of the Greek scholar and patriot Konstantinos Koumas. She lived from 1835-1900

and died 2 years before Heldreich, at the age of 65. They had 3 daughters. All previous biographers have documented only 2. Kit Tan found the gravestone of his first child in a cemetery in Athens (Figure 7). Minna von Heldreich was born in Athens on 3 January 1856 and died at the age of 8 on 26 January 1864. The engraved inscription translates

*“Your death came early,  
your life is short  
but your memory  
lives eternal”.*

His second daughter was Karolina who lived from 1857-1931 and married Gangolf von Kieseritzsky, Curator of Antiquities at the Imperial Hermitage Museum in St Petersburg (Leningrad). She died at the age of 74. There was a son, Wolfgang (1888-1948) and grandson, Achilles (1923-1983). They are all buried in the same family grave as Heldreich, in Athens (Figures 8). His third



child was Ioanna, who married Mark Mindler, attorney and head of the stenographer's office of the Greek parliament. She was buried in the 1960s, not in the family grave but in another section of the cemetery, together with the Mindlers (Figure 9).

As far as we can determine there are no direct descendants of Heldreich still alive.

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