

## CURIOSITIES ABOUT THE *ARTEMISIA* COLLECTIONS FROM “ALEXANDRU BELDIE” HERBARIUM

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### ABSTRACT

*The present paper presents show characteristic aspects of Artemisia samples present in „Alexandru Beldie” Herbarium. The first part of the article presents some characteristics of this herbarium hosted by „Marin Drăcea” National Institute for Research and Development in Forestry. The material consisted of 187 vouchers that contain Artemisia samples. These vouchers were synthesized in order to emphasize the main characteristics of this genus. As such, the development dynamic of these collections was created and graphically rendered over time, followed by a map with the main European harvesting areas from where samples were collected. Romanian and foreign botanic personalities that have identified and archived Artemisia plants in this herbarium are also mentioned. The article ends with an emphasis of the usage and importance of plants belonging to this genus.*

### INTRODUCTION

„Marin Drăcea” National Institute for Research and Development in Forestry from Bucharest holds in adequate conditions a herbarium created in 1929 that holds the name of the renowned “Alexandru Beldie” botanist. The herbarium contains approximately 40.000 vouchers (Dincă M. et al., 2018; Vechiu et al., 2018) and is inscribed in Index Herbariorum, having the international BUCF code.

The herbarium contains numerous plant species and genera, among which

we mention: 19 *Scorzonera* species (Dincă and Cântar I.C. 2017), 21 *Agrostis* species (Cântar I. et al, 2019), 41 *Polygonum* species (Vechiu et al., 2018), ), 15 *Veronica* species (Dincă et al., 2017), 80 *Trifolium* species (Cântar I. et al, 2018), 15 *Ornithogalum* species (Enescu R. and Dincă L. 2017), 69 *Potentilla* species (Crișan, V. et al., 2017), and 16 *Abies* species (Enescu, C et al., 2018).

### MATERIALS AND METHODS

The work material is represented by 187 vouchers present in the herbarium that contain *Artemisia* species. The vouchers were systematized based on the collection to which they belong, the harvesting place and date and the name of the specialist that has collected them. In addition, each plant has a conservation degree assigned, on a scale from 1 to 4.

This collection’s development dynamic over time was rendered based on each plant’s harvesting date. Furthermore, spatial data such as the harvesting place of each sample was used to create a European map with *Artemisia* harvesting places.

An excerpt regarding the systematization method can be seen in Table number 1.

**Excerpt from “AlexandruBeldie” Herbarium’s database**

**Table 1**

Drawer number	Voucher number	Herbarium/ Botanic collection/ Institution(from the herbarium’s voucher label)	Species name	Harvesting date	Harvesting place	Collected/ Determined by:	Conserv. degree (1...4)
45	1	Forest Research Institute’s Herbarium	<i>Artemisia vulgaris</i> L.	1937.09.11	Valeanca forest Oc. Pogoanele	C.C. Georgescu	1
45	15	HortusBotanicusInstitut iAgronomici T. Vladimirescu Craiova-RomanianSocialistRepublic	<i>Artemisia scoparia</i> W. et K.	1963.09.17.	Oltenia, Balș district, 120 m alt	M. Păun	1
45	21	Museum BotanicumUniversitatis , Cluj / Flora Romaniaaeexsiccata	<i>Artemisia salina</i> Willd . Ssp. <i>monogyna</i> W. et K.	1920.10.11	Transylvani a, Cluj district, 400 m alt	M. Péterfi	2
45	22	Cluj University’s Herbarium	<i>Artemisia maritima</i> L. ssp. <i>salina</i> Willd .	1933.10.10	Transylvani a, distr. Cluj, 400-500 m alt	E.L. Nyarady	1
45	27	Bucharest Polytechnic School’s Herbarium / Botanic Laboratory	<i>Artemisia salina</i> Willd	1939.08.01	Sandy lakes, Carmeu forest	C.C. Georgescu	1
45	29	Museum BotanicumUniversitatis , Cluj / Flora Romaniaaeexsiccata	<i>Artemisia salina</i> Willd . Ssp. <i>monogyna</i> W. et K.	1923.09.26	Muntenia, distr. Ialomița, Siliștea-Cotorca forest, alt 75 m	G.P. Grințescu/E. L. Nyarady	2
45	40	Forest Research Institute’s Herbarium	<i>Artemisia pontica</i> L.	1937.09.02	Maxim forest, com. Mălin-Buzau	C.C. Georgescu	1

**RESULTS AND DISCUSSION**

The systematization of vouchers that contain *Artemisia* samples from AlexandruBeldie Herbarium has enabled the analysis of harvesting periods and places as well as emphasizing the most representative species from this herbarium.

The development of *Artemisia* samples in the herbarium was realized on a period of over 150 years, with a maximum development in the period between the wars (Fig. 1). The oldest *Artemisia* plant present in the herbarium dates back to 1838 and is an *Artemisia villarsii* sample.

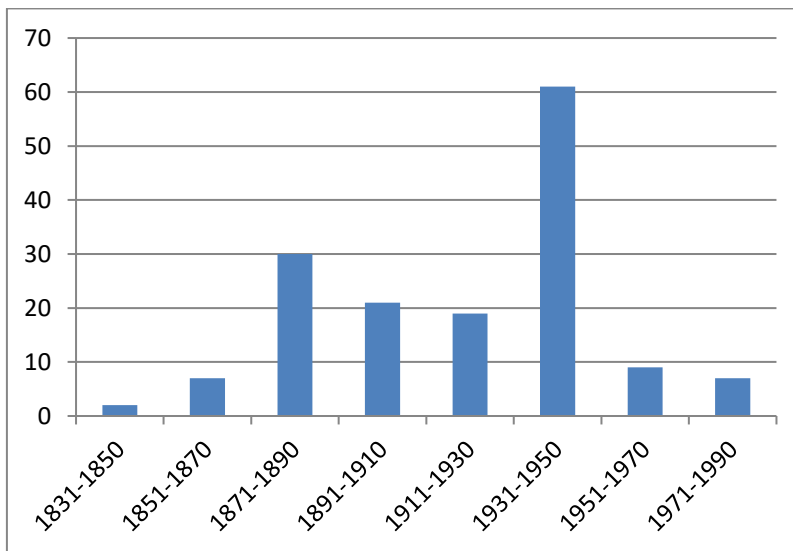


Fig. 1. The dynamic of *Artemisia* genus's development over time within the herbarium

The analysis concerning the harvesting places of *Artemisia* samples has shown that the samples present in

“AlexandruBeldie” Herbarium cover the entire Europe (Fig. 2).



Fig. 2. The map of harvesting *Artemisia* samples present in “AlexandruBeldie” Herbarium

As it can be seen in Figure number 2, the latitudinal limits that represent harvesting places of *Artemisia* samples that enrich “AlexandruBeldie” Herbarium are Norway (North limit) and Sicily, Italy

(South limit). From a longitudinal point of view, the most West point from where *Artemisia* plants were gathered is the South-West of Spain, while the most East one is in Volgograd, Russia. The majority

of plants are harvested from Romania, while a considerable number of species were also gathered from Spain or Germany.

The systematization of the 187 *Artemisia* vouchers has emphasized 59

species. The most well represented species in the herbarium are: *Artemisia austriaca* Jacq. (19 samples, fig. 3), *Artemisia absinthium* L. (18 samples), *Artemisia vulgaris* L. (14 samples), and *Artemisia pontica* L. (10 samples).



Fig. 3. Vouchers with *Artemisia* plants present in “Alexandru Beldie” Herbarium from “Marin Drăcea” National Institute for Research-Development in Forestry (*Artemisia arenaria* – left, *Artemisia austriaca* - right)

*Artemisia* species, popularly known as sage have numerous usages. The aromatic leaves of some species are used for aromatization. Most species have an extreme bitter taste. *A. dracunculus* (tarragon) is used worldwide as a culinary plant, extremely important in the French cuisine. *Artemisia vulgaris* was used in popular medicine for treatments against internal and external parasites, fleas and moths, as well as in brewing beer, treating hangovers and nightmares. *Artemisia absinthium* is used for preparing absinth drinks, vermouth or other drinks.

Artemisinin (extracted from *Artemisia annua*) and its derivative are a group of compounds with the fastest

action from all current medicines used in treating malaria. Treatments that contain an artemisinin derivative are nowadays a worldwide standard treatment in treating malaria caused by *Plasmodium falciparum*.

*Artemisia cina* and other sage species are the source of some anthelmintic medicines. Chinese sage, *Artemisia argyi*, is used in traditional Chinese medicine, while *Artemisia capillaris* is renowned for its strong sedative-hypnotic effects. *Artemisia austriaca* has beneficial effects in reducing morphine receding syndrome ([https://en.wikipedia.org/wiki/Artemisia\\_\(genus\)](https://en.wikipedia.org/wiki/Artemisia_(genus))).

The creation and development of collection that contain *Artemisia* plants was possible due to numerous Romanian and foreign specialists such as Wolf, Richter, Georgescu, Cretzoiu, Tontarlier, Reverchon, Becker, Lange, Stefanoff, Georgieff, Sauter, Griewank, Borza, Buia, Morariu, Grintescu, Ross, Nyarady, Bourdot, Iacobescu, Rothmaler, Purcelean, Coman, Pascovschi, Morar, Naret, Badea, Neuwirth, Mașca, Vidal, Păun, Gh. Popescu, Fulga, Petcuț,

Haralamb, Rigo, Peterfi, Gergeli, Bujorean, Gurtler, Lagger, Don de Aubouy, Roth, Buek, Woeff, Hutman, Beldie, Johkan, Holuby, Mascheseti, Pau, Autheman, Grabmayr, Janke, and Simkovics. They have covered Romanian and European forests, meadows and parks in order to collect, determine and archive species belonging to this genus, leaving us a valuable scientific and historical heritage.

### CONCLUSIONS

The systematization of 187 vouchers from "Alexandru Beldie" Herbarium that contain *Artemisia* samples has allowed the identification of 57 species.

The oldest *Artemisia* plant from the herbarium is an *Artemisia villarsi* samples, harvested in 1838.

The development of this genus within the herbarium was realized over 150 years, with a maximum development during the period between the wars. The creation and development of these collections were possible due to

numerous Romanian and foreign specialists.

The *Artemisia* samples present in "Alexandru Beldie" Herbarium were gathered from all over Europe, with numerous plants harvested from Romania or countries such as Spain, Germany and France.

*Artemisia* species have numerous usages in medicine and the food industry, being renowned for their qualities even from the earliest times and cultures.

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