Auctores summam litterarum suarum ipsi praestant!

INSTITUTUM AGRONOMICUM "DR.PETRU GROZA" / ROMANIA /
NOTULAE BOTANICAE HORTI AGROBOTANICI 1979, X.

THE AGROBOTANICAL GARDEN OF THE AGRONOMY INSTITUTE "DR.PETRU GROZA"

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Abstract:
MOLDOVAN I., SZABÓ T.A., 1979, The Agrobotanical Garden of the Agronomy Institute "Dr. Petru Groza". Not.Bot.Hort.Agrobot. Cluj., 1979, X,45-52. The paper presents the main orientations in the activities of the Agrobotanical Garden from the Agronomy Institute "Dr. Petru Groza" Cluj-Napoca, founded 75 years ago. The first period of the garden was characterised by increased interest for medicinal plants, the second for plant taxonomy and systematics, the third by ecological orientations, research on cultivated varieties and for germplasm resources. The living plant collections of the garden are presented periodically in the Index Seminum Horti Agrobotanici Cluj-Napoca published since 1962, the results of botanical interest related to research on spontaneous species and cultivated plants are published in Notulae Botanicae Horti Agrobotanici Cluj-Napoca. As a result of the research activities a Herbarium of more than 31 000 cultivated and spontaneous plant specimens are preserved.

Index words: botanical gardens, herbarium, hystory of botany

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The Agrobotanical Garden of the Agronomy Institute "Dr.Petru Groza" form Cluj-Napoca, România have been developed during the times attached to the Department of Botany; it is the result and implementation of certain applied botanical work for the benefit of education-instruction, scientific research and productive practice based on the

assertion, that green plants represent the basic elements of all terrestrial ecosystems and that their study is a fundamental activity of research in the field of biology.

The Agrobotanical Garden of Cluj-Napoca is one of the oldest among the gardens is our country which develops its activity on the same location. The documentary proof of its foundation within the Institute dates back to the 1890-th when the alleys of the park were mapped out too. In 1903-1904 the land sorrounding the ruins of the cloister located on the Dealul Craiului (King's Hill) had been parcelled out, and a systematic botanical collection and a medicinal plant collection was founded right on the spot where the garden's collection is to be found now.

In the evolution of the Agrobotanical Garden there have been outlined three main periods of development determined by the character of the scientific research as well as by the necessities dictated by the agronomic higher education in Cluj.

The first period which started around 1905 was marked by an ever growing interest for the study of medicinal plants. Under the leadership of professor Bela Páter there were implemented certain extremly fruitful investigations concerning the systematics, biochemistry, pathology and cultivation of medicinal plants. Thees results paved the way of both the garden and laboratory towards a high ranking place in the farmacobotanical scientific life at the beginning of twentith century. The Research Institute of Medicinal Plants founded in 1904 to which the garden was practically joined at that time was the first institution of this kind on the European continet. During this pioneering period there was laid the foundation for the seeds and drugs collection and that of the didactic and scientific herbaria.

The second period had started after the First World War being determined by the extremely rich botanical activity of Professor Iuliu Prodan who, by means of his scientific works and those meant rendering the science of botany popular, had considerably influenced the deepening and spreading of botanical knowledge all over România. During this period the general agrobotanical outline of the collections belonging to the garden have been developed. Side by side with the systematic collection and that of the medicinal plants there had been extended the culture of some plant species and varieties; that of oleaginous, melliferous, weedy and fiber plants. The technical leadership during this period was ensured by the competency of the agronomy engineer Otto Kuhl. During the same period, there was

further developed the dendrological collection and the park of the Institute which greew richer through a series of species. The work of fitting out and extension of the park had been coordinated further by its senior gardener, V.Ritter.

During this period between the world wars, the estate of the Romanian botany became richer among others through the publication of some valuable monographs on the genera of Iris, Rosa, Achillea etc. written by professor I.Prodan and thees activities have been reflected on the development of the Agrobotanical Garden where new taxa, mostly belonging to genus Rosa, were introduced.

The coordonating activity had been taken over, but for a rather short period, by Prodan's collaborator and disciple, Professor Alexandru Buia under whose guidance the Botanical Garden of Craiova was organized later on. During this time, the affiliated scientifc herbarium had been enriched considerably through the inclusion of some collections belonging to renown botanists from Romania such as Al.Buia, Şt. Csürös, E.Ghişa, I.Todor who developed their botany-teaching activities within this Institute. The scientific value of the collections have been increased through the inclusion of plant and seed specimens fr[illegible] the inventary of the Seed-Control Station's collection.

The third period had started after the World War Two by the reorganisation of the garden entierly devastated by the war. In the systematic section and herbarium the works had started in 1950 under the leadership of Professor A.Nyárády assisted by the enthusiastic work of the skillful technicean I.Petridean, gardener. The newly initiated reorganization followed mainly didactic considerations. Thus in the grouping of the plant families, there were taken in account, as much as possible, certain phylogenetic criteria, the species within the families were selected among the most commone ones and planted in the plots in an alphabetical order. Thus the functionality of the garden increased considerably, offering an useful and varied material available for researde and the botanical instruction of the agronomy students. In the systematic section, there are cultivated with priority species of economic importance and with importance for the agroecosystems as meadow plants, agricultural weeds, ornamental species of Transylvanian peasant gardens, pulse crops, species of landscape interest a.s.o.

In 1968 as an aftermath of certain sport fields extension works, there was necessary to reorganize the collections of the garden by separating the systematic collection from the section of cultivated varieties; thus the present organisation have been outlined (Fig.1)

The upbuilding of the Faculty of Animal Breeding and Veterinary Medicine within the campus of the Institute lead to the extension of the old park; new landscape scenaries have been built to reveal the modern architectural lines of the buildings. The works of extension, regeneration and menagement were guided, from horticultural and landscape points of view by the professor of Horticultural Department, D.Indrea and by the Rectors respectively, who were at the head of the Institute in this last period. Thus the present state of a large and beautiful park of scientific, didactic and recreational functions have been outlined.

Begining with 1962, the Agrobotanical Garden of the Institute has been publishing periodically seed catalogues including plant material offered for exchange with the other similar institutions in the country and abroad. This catalogue containes, beside materials obtained in the Agrobotanical Garden and spontaneous flora, a rich collection of varieties cultivated and maintained by the Departaments themselves (Phytotechny, Genetics and Amelioration, Pomiculture, Vegetable Growing, etc.). Beginning with 1975 the catalogues include a part of the collections maintained by the Station for Horticultural and Viticultural Research Institute Cluj-Napoca. At present time the Seed Catalogue of the Agrobotanical Garden is available for 269 botanical gardens or similar institutes, in 45 countries all over the world. (Table 1.). There are sent annually thousands of seed and other scientific samples to our exchange partners.

The year of 1965 has marked the publication of the first issue of Notulae Botanicae Horti Agrobotanici Cluj-Napoca which comprises the agrobotanical results of the genuine scientific works done by the staff of our Institute on the field of applied plant biology. The reference list of articules published in the first 10 issues of this publication has been presented int the attached bibliography.

Between 1967-1975 the scientific herbarium have been also reorganized and catalogised by the Herbarium curator A.T.Szabó. In this herbarium there are represented mostly species belonging to the spontaneous and cultivated plants of Romanian flora; in the last period the collections have been enlarged mostly by specimens related with the study of the variablity of agronomically important plant species (Asteraceae, Fabaceae, Poaceae).

The reorganisation of scientific research activities in Romania the new orientations related with the tasks of research concerning the rendering valuable of the vegetal resources (1,7), are being reflected in the entire activity developed within the Agrobotanical

Table 1

Scientific exchange relations of the Agrobotanical Garden, Agronomy Institute "Dr.Petru Groza", with similar institutions, in the period 1975-1980 (number of institutions)

Name of the country	seed and publication	seed only	publication only
EUROPE			
Austria	3	.	2
Belgium	4	.	1
Bulgaria, P.R	3	.	.
Czehoslovakia, S.R.	10	1	2
Danemark	1	2	1
England	6	.	3
Federal Rep. of Germany	13	1	11
Finland	3	.	1
France	9	2	7
German Democratic Rep.	7	1	2
Holland	5	.	3
Hungary, P.R.	8	.	6
Iceland	.	.	1
Italy	7	3	4
Norway	1	.	.
Poland, P.R.	6	1	2
Portugal	5	.	.
Romania, R.S.	15	1	19
Spain	3	.	1
Sweden	4	1	1
Switzerland	9	1	1
U. S. S. R.	29	.	.
Yugoslavia	3	.	4
AMERICAS			
The Argentine	5	.	1
Brazil	.	.	.
Canada	7	1	.
Chile	.	.	1
Columbia	.	.	1
Cuba	.	.	1
Equador	.	.	1
Mexico	.	.	1
U. S. A.	16	.	2
A S I A			
India	1	.	2
Indonesia	1	.	.
Iran	1	.	.
Israel	2	.	.
Japan	5	.	1
Pakistan	1	.	.
Peoples Rep. of China	4	.	1
Turkey	1	.	.
A F R I C A			
Egypt	.	.	1
Jordan	.	.	1
Marocco	1	.	.
S. A. R.	2	.	.
Australia	5	.	1

Garden and integrated, more and more in a complex activity with strong applied character.

The collected biological material at the disposal of partners in the country and abroad, as well as the results of researches published in langauages generally used in the scientific world, the seed and publication exchage (Table 1.) have paved the way for the possibility of the integration of the activities from the Agrobotanical Garden of the Agronomy Institute "Dr.Petru Groza" Cluj-Napoca in national and international network o circulation of sciantific values on plant sciences. Consequently both the Garden and Herbarium are to be found in the latest issues of international directories.

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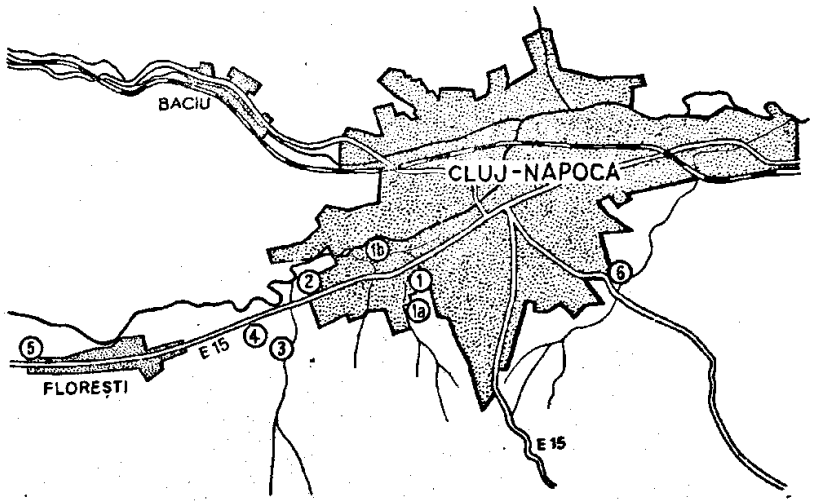

Fig. 1. The location of the living plant collections listed in the Index Seminum Horti Agrobotanici Cluj-Napoca. 1 - Dendrological collection and main buildings; 1a - Systematic collection, pomological collections (Dealul Craiului); 1b - the location of the horticultural and medicinal plant collections up to 1967; 2 - collections of the Plant Genetics and Breeding Department (Trifolium); 3 - collections of the Fitotechnical Department; 4 - collections of horticultural and forage crops; 5 - the planed location of the new experimental farm of the Agronomy Institute "Dr. P. Groza"; 6 - collections of tne Horticultural and Viticultural Experiment Station Cluj-Napoca.

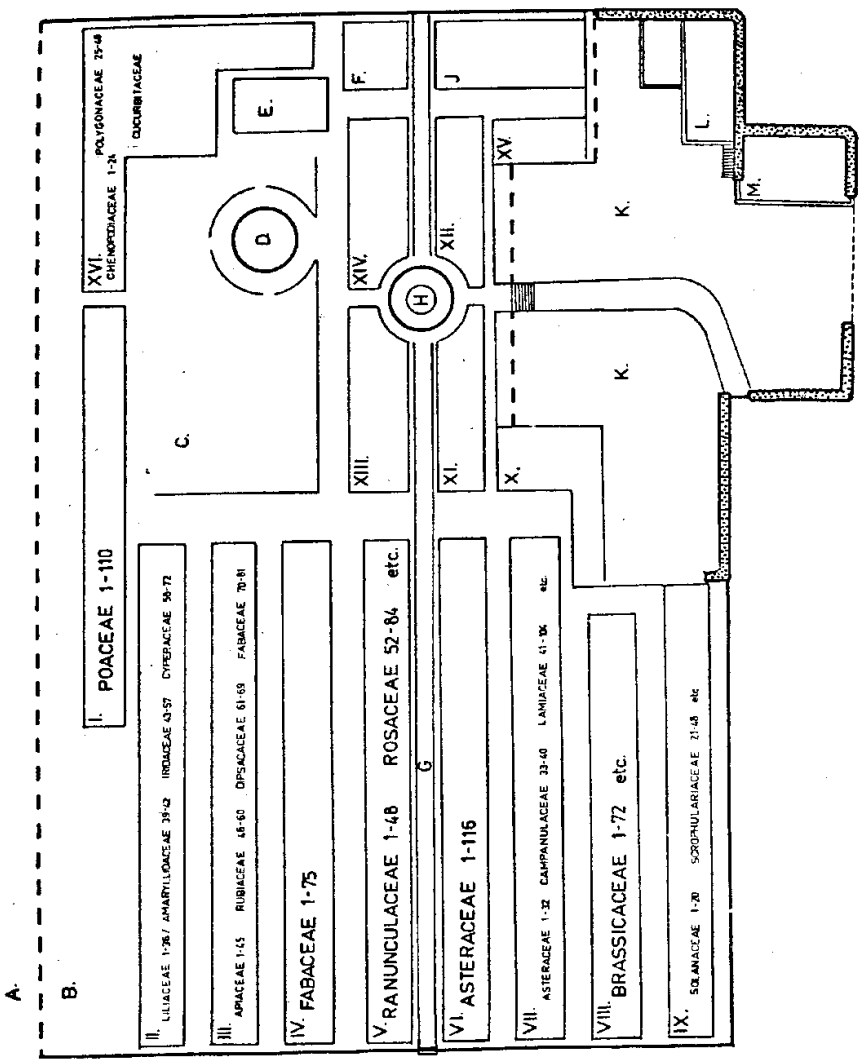

Fig. 2. The Systematic collection of the Agrobotanical Garden situated on Dealul Craiului (King's Hill) Cluj-Napoca. I - XVI = systematic plots with plant families and economic groups; A = experimental field; B = forest plants; C = Gymnospermae; D = rock; E,L,M = buildings F,J = experimental plots; G = main path; H = basin; K = courtyard.

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RESULTS REGARDING THE STUDY OF AN ESPARCET (ONOBRYCHIS) COLLECTION

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Abstract:
ROMAN A.,PERSECĂ E.,KAIN I.1979,Results regarding the study of an esparcet (Onobrychis) collection.Not.Bot.Hort.Agr.Cluj., 1979, X, 53-58. The results of the studies done between the years 1974-1975 on a number of 101 samples of esparcet (Onobrychis spp.) under the conditions of Cluj-Napoca are being recorded. There have been remarked for higher DM production and very significant growth 5 samples, other 6 varieties achieved a significantly higher growth. The quality of fodder was appreciated according to protein and cellulose contents and leaf percentage. A number of 5 samples displayed significantly higher protein contents and that of cellulose lower than the control. All the 23 samples remarked for their precocity, resistance to diseases, production and quality, are worth being used as genitors in the breeding of cultivated varieties.

Index words: Onobrychis spp., variability, resistance, DM production,breeding.

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Esparcet is characterised by very valuable features under fodder and melliferous aspects, resistance to wintering and drought and a high biological capacity of synthetizing the fertilizing elements from the eroded, poor, stony and calcareous soils. Being cultivated with perennial herbs or alone, it lets a high quantity of roots in soil, which contribute to the increasing of the supplies of organic