PLANT GERMPLASM COLLECTION REPORT

USDA-ARS
FORAGE AND RANGE RESEARCH LABORATORY
LOGAN, UTAH

Foreign Travel to:
Romania
August 5-23, 1984

U.S. Participants

Melvin D. Rumbaugh (retired)
Crops Research Laboratory
Logan, Utah U.S.A.

Norman L. Taylor, Professor
Department of Agronomy
University of Kentucky
Provo, Utah U.S.A.

GERMPLASM ACCESSIONS

Purpose of Trip:

1) To collect seeds and Rhizobium nodules of Astragalus spp., particularly A. cicer.

2) To collect seeds and Rhizobium nodules of endemic Trifolium spp.

Note: M. D. Rumbaugh was substituting for C. E. Townsend who developed the collection proposal for Astragalus but who could not participate in the collection trip.

London	August 6
Bucharest	7-8
Brasov	9
Piatra Neamt	10
Suceava	11
Cluj	12-14
Craiova	15-16
Bucharest	17
Constanta	18-19

Bucharest	20
Munich	21

SUMMARY

The ecological regions of Romania searched for plant germplasm resources of interest to scientists in the United States include alpine, subalpine, montane and flood plain forest, grassland, and beach zones. A circular route of 3,000 km permitted a rapid survey and sampling of the most promising vegetation types. The 139 seed samples collected will be valuable for the improvement of several important forage legume and grass species. The perennial clover (Trifolium spp.) Germplasm resources of Romania are adequately represented in the collection. However, only 3 accessions of Astragalus cicer were obtained. Although A. cicer was a major target species for the collection, it proved to be relatively uncommon in Romania. A. cicer may be more widespread in other countries which should be documented by correspondence with other European scientists prior to development of another collection proposal.

TRAVEL DETAILS:

August 5-8:

We traveled from our duty stations to Bucharest, Romania, with a one-day stop at London. In London we visited the Kew Botanical Gardens to study herbarium specimens of Astragalus, Medicago, and Trifolium. Kew has 32 of the type mounts of the 220 Astragalus species listed in Nyman's Conspectus Florae Europaea. Astragalus cicer specimens originated in Austria, Bulgaria, Czechoslovakia, France, Germany, Greece, Romania, Scotland, Spain, Switzerland, and Syria. The collections of Medicago and Trifolium are very extensive but lacked specimens from Romania.

We were met in Bucharest by Mr. Thomas B. O'Connell, the U.S. Agricultural Attache, and his assistant, Mr. Tony Pavel. They had arranged for us to discuss our objective with Dr. Tiberiu Muresan, President of the Academy of Agricultural and Forestry Sciences. Dr. Muresan introduced Dr. Gheorghe Turcu, a systematic botanist form the Institute Agronomic N. BaPcescu. Dr. Turcu had earlier been advised as to the nature of the collection trip and had planned a travel route to attain the objectives. He had been assigned the responsibility of traveling with us throughout our stay in Romania and proved to be both an able interpreter and a very competent taxonomist. Dr. Muresan also speaks English very well. Their addresses are as follows:

Prof. Dr. Tiberiu Muresan
Academy of Agricultural and Forestry Sciences

Bul. Marasri 61
Buchuresti, Romania

Prof. Dr. Gheorghe Turcu
Catedra de Botanica
Inst. Agronomic N. BaPcescu
B'dul Marasti Nr. 59
Buchuresti, Romania

We rented a car, hired a driver, and began the collection trip. En route to Brasov we collected several legumes near Ploiesti. Coronilla varia, Sytisus nigra, Dorycnium herbaceum, Lotus corniculatus, Medicago lupulina, Melilotus alba, Trifolium fragiferum, T. pratense, and T. repens were all located at this site.

August 9-10:

Various types of habitats were examined near Brasov and Piatra Neamt. We took the cable car up the Buceqi Mountains at Busteni to search for alpine forms of Astragalus and Trifolium species. Even at the highest elevations, intense and abusive grazing by sheep had eliminated many species and made it very difficult to obtain seeds. Several Astragalus, Oxytropus, and Trifolium species growing at 2,200 m elevation were just beginning to form pods. At lower elevations near Risnov we found matures seeds of a number of legume, grass, and forb species. West of Piatra Neamt, we collected seeds of A. pseudopurpureus in the Cheile Bicazului. This species grows only in this locality. Although it is a small plant with limited agronomic potential, it will be of interest to cytogeneticsts and systematic botanists.

August 11:

Visited the experiment station at Suceava and toured the corn breeding plot area. Personnel at this station specialize in plant breeding and the corn project emphasizes the development of flint corns adapted to a 120 day maturity zone. They employ 40 workers on the project during periods of peak labor requirement and make 150,000 pollinations per year. The station has a staff of 30 scientists.

We collected in a hay meadow 12 km south of Suceava in the afternoon. This site proved to have the richest and most diverse flora of any site we observed in Romania. We obtained seeds of Astragalus cicer, Trifolium pannonicum, T. ochrolecon, T. medium, and T. alpeste. Medicago

falcata plants were seen but, as was the case throughout the mountains, the pods were not mature.

August 12-14:

We traveled to Cluj where we were assisted by the staff of the Agronomic Institute Petro Groza. The Institute has 153 professional staff members and 1,200 students in the agronomy, horticulture, and veterinary medicine. About one-tenth of the students are working in doctoral programs. Plant breeding research is done on forage legumes, hops, sugar beets, and ornamental and medicinal crops. The work with red clover (Trifolium pratense) is very extensive with a six ha nursery area. A modification of the polycross procedure is the most common clover breeding method.

Dr. T. Attila Szabo was most helpful with our seed collection in the vicinity of Cluj. His address is:

Dr. T. Attila Szabo

Str. Plopilor 26

3400 Cluj-Napoca

Romania

The Institute furnished a 4-wheel drive vehicle and we collected a number of species near Cluj including a second accession of Astragalus cicer. As at Suceva, only a few plants of this species were found even in a very favorable colleting site.

August 15-17:

After traveling to Craiova and participating in an orientation discussion with the rectors of the University of Craiova, we visited an experiment station 30 km south of the city. An area which had formerly been sand dunes had been reclaimed for agricultural production by land shaping, irrigation, and fertilization. Corn, soybeans, peanuts, potatoes, and watermelons are grown. Double cropping is practiced with a first crop of early potatoes followed by `Charleston Grey' watermelons.

Medicago falcata, M. sativa, Trifolium medium, and a number of other species were collected in the People's Park in Craiova. Several other sites were examined but all were unproductive and of little interest. We returned to Bucharest via Curtea de Arges where we collected T. montanum.

August 18-20:

During this three-day period we collected near the Black Sea Coast in the vicinities of Constanta and Magnalia. The most important accession obtained was of Medicago marina. This perennial species grows on sand dunes and may prove to be of value in alfalfa breeding if the interspecific cross can be made. Another species was found growing on the sand was the annual Trifolium echinatum.

August 21-23:

After returning to Bucharest, the seeds were packaged and shipped to the United States via diplomatic pouch. We then returned to the United States with an overnight stop at Munich.

ACADEMIA Bucuresti

DE Bd. Aldrasti nr. 61

STIINTE AGRICOLE SI SILVICE Nr. 290/RS/ 20.08.1984

Oficial relatii stiintifice

Internationale

Ctre,

PUNCTUL VAMAL - OTOPENI

Conform aprobrii conducerii A.S.A.S., în perioade 7-21 august a.c., specialistii americani M. Rumbaugh si. N. L. Taylor an efectuat un stagiu de documentare în tara noastr, în probleme privind rspîndirea speciei Astragalus var.

Specialistii americani transport specii de plante, conform anexei.

Lista probelor se seminte a fost aprobat de ctre conducerea ASAS cu Nr. 290/RS/20.VIII.1984.

DIRECTOR,

Inga Cover

Lista speciilor de plante ce vor fi transportate în S.U.A. de ctre specialistii: M. Rumbaugh

si N. L. Taylor

Agropyron intermedium	2	probe
Anthoxantum adoratum	1	"
Arthyllis vulnaria	1	"
Astragalus cicer	2	"
Astragalus glycophyllus	2	"
Astragalus monosplessulamus	1	"
Astragalus onobrychis	2	"
Astragalus peterfii	1	"
Astragalus pseudopurpurea	1	"
Bromus inermis	1	"
Coronilla varia	2	"
Cyonosurus crestatus	1	"
Cytesus austreacus	1	"
Dactylis glomerata	4	"

Deschompsia caespitoza	1	"
Dorycnium bearaceum	3	"
Festuca pratensis	1	"
Festuca rubra	2	"
Genesta sagetalis	1	"
Genesta tinctoria	1	"
Holius lanatus	1	"
Lathyrus hirsitus	1	"
Lathyrus niger	1	"
Lathyrus pratense	1	"
Lathyrus sylvestris	1	"
Lathyrus vernalis	1	"
Lotus cornicutatus	3	"
Lotus sileguous	1	"
Medicago falcata	3	"
Medicago lupulina	1	"
Medicago sativa	2	"
Onobrychis avenaria	1	"
Onobrychis vicaefolia	3	"
Oxytropis bilbosa	1	"
Phleum pratense	1	"
Trifolium alpestre	5	"
Trifolium arvense	3	"
Trifolium arvense vargracile	1	"
Trifolium complestre	2	"
Trifolium dubium	2	"
Trifolium fragiferum	2	"
Trifolium hybridum	3	"
Trifolium medium	4	"
Trifolium montanum	5	"
Trifolium ochrolecon	2	"
Trifolium pannonicum	3	"
Trifolium pratense	7	"
Trifolium repens	4	"
Trifolium strepens (aureum)	1	"
Trisetum flavescens	1	"

Viburnum lantona	1	"
Vicea angustifolia	2	"
Vicea cracca	2	"
Vicea clumetorum	1	"
Vicea nersutum	2	"
Vicea tetrasperma	1	"
Vicea tenufolia	1	"
Vicea sagitalis	1	"
Agropyron crestatum	3	"
Agropyron intermedium	2	"
Astragalus asper	1	"
Astragalus monspessulanus	1	"
Astragalus sprunri	1	"
Astragalus varius	1	"
Bromus inermis	1	"
Coronella varia	2	"
Dactylis glomerata	2	"
Elymus arenarius	1	"
Festuca valesiace	1	"
Koeleria brevis	1	"
Koeleria gracilis	1	"
Medicago falcata	1	"
Medicago marina	1	"
Melica celesta	2	"
Melitatus albe	1	"
Onobrychis arenaureus	2	"
Phleum phlecides	1	"
Trifolium echenatum	1	"
Trifolium pannonicum	1	"
Astragalus cicer	1	"