

ON THE SYSTEMATIC POSITION OF RED CLOVER (*TRIFOLIUM PRATENSE* L.)
CULTIVATED IN ROMANIA

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During about two centuries, *Trifolium pratense* L. has been growing in Romania turning from a spontaneous plant to an intensely cultivated species. Parallely with the intense cultivation, with breeding and variability studies, there have been formed and differentiated under cultivation - within the ecological conditions of Transylvania -, some valuable ecotypes, characteristic to specific climatic and geographic zones.

The local populations taken under cultivation from the spontaneous flora, as well as from seed imported from abroad, have contributed, beginning with the end of the 19-th century, to the formation of these ecotypes generally and collectively known under the name of "Transylvanian Red Clover" (7).

There were many researches in connection with the red clover of Transylvania (6, 7, 8, 9, and others); these had contributed to the outlining of the peculiarities of this source group. Thus during the checking of populations for drought resistance (6) there was possible to establish that various sources collected in Transylvania constitute a group fairly united inasmuch as moisture requirement is concerned, but the representatives of this group, save few exceptions, are not resistant to drought.

Following certain comparative studies in frost- and drought resistance, respectively the development rate in a population collection of clover comprising all crop areas of Romania as compared with red clover variants originating in the south and north of Europe (PUIA, SAVATTI and GEORGESCU 1973, in 7), there was inferred that the red clover populations of Romania may be generally considered as belonging to the two-cut early red clover ecological group, but these populations are more perennial and possess a good winterhardness - outstanding

Auctores summae litterarum
suarum ipsi praestant!

characteristic of the late red clover. Due to these properties, the Romanian (Transylvanian) red clover proved to be a valuable biological material, a germplasm resource, that assembles the valuable characters both of the southern ecotypes and those of northern ones. Since the populations of the red clover of Romania - and mostly that of Transylvania - is located in the middle of the European crop area of the species, in mountainous and hilly region of varied pedoclimatic conditions where intense micro evolutionary processes take place, revealed in a considerable number of endemic plant species; the through research of the spontaneous and locally cultivated Trifolium pratense populations has an outstanding theoretical and practical value both for the understanding of microevolution that takes place in the case of this species in this geographic zone, and for the outsetting of the special worth of Romanian red clover for the forage production and plant breeding.

Taking into account some intermediary specific characters of Transylvanian red clover sources as compared with the early (southern) variants and late ones, one should examine the systematic position of these sources.

The early cultivated red clover - Trifolium pratense L. ssp. sativum (Afz.) Jáv. var. praecox Witte - may be differentiated from the late cultivated red clover (var. serotinum Witte) both in ecophysiological characters and in morphological ones, as well - thus the recognition of these taxa is well founded (4). The situation is essentially similar in the case of Transylvanian red clover, too; beside that this group of varieties neither morphologically, nor ecophysiologically may be perfectly integrated within the above two taxa (6, 7, 9). The problem that is to be looked into, in order to integrate these sources is the one raised in general sense by HEYWOOD 1959 (ap. in 1), that is "what is useful to recognize and to what purpose?".

In cultivated plants, the first purpose of subspecific taxonomic units is the informational one - that is, the grouping on basis of some morphological, physiological and common agroproductive characters. This has kept its importance in the present stage and it is necessary for the evidence and maintenance of genetic resources (2). Investigating the seed catalogues of some large germplasm collections of Central Europe (Gatersleben 1977, Radzikow-Warszaw 1974, Praha-Ruzyne 1976-1978, Tópiósztele-Budapest 1976-1977 etc.) it can be asserted, that in the present time this desideratum is not fulfilled in the case of Trifolium pratense. In order to serve the defined informational purpose, based on a rich experience acquired along almost three

decades of research on this species, it is considered as beneficial the recognition of a new taxonomic unit: var. intermedium var. nova.

Having the intention of expressing the microevolutive differentiation of cultivated populations in taxonomic categories according the generally accepted principles (1, 11), but without having left out the fact, that the systematics of cultivated varieties is always based inherently on statistic analysis of population, and in order to complete the contradictious classifications published in the literature cited (3, 4, 5, 7, 10) we suggest hereunder the following scheme for the red clover varieties cultivated in our country:

sp. Trifolium pratense L.

- ssp. pratense (= var. spontanum Willk. 1868) - non-improved, spontaneous red clover. For the variability of the taxon see (5, 10).
- ssp. (convar.) sativum (Afzelius 1791 pro var.) Jáv. 1924, Janchen 1953 (syn. var. subnudum Witte 1918) - cultivated red clover, with \pm fistulous stems, leaflets up to 5 cm length, bracteant leaves \pm not closely attached to inflorescence.
- var. (provar.) serotinum Witte 1918 (recte var. sativum) - one cut late red clover, multiannual, high stems of 77 cm average (average values according to HAWKINS 1953, ap. in 4), 14.5 internodes, single headed, winter hard; one cut yearly, flourishes during 2nd year, perennity over 3 years generally.
- var. (provar.) intermedium var. nova - medium late red clover in which taxon may be included the semi-precocious and semi-late populations of Transylvanian hilly areas and other similar populations and cultivated varieties. This botanical variety include representatives with morphological and ecophysiological characteristics between the variety praecox (hispanicum) and serotinum (sativum) according to the following diagnosis: planta robusta, 50- usque 150 cm alta, copiose ramificata, 30 ad 80 caules instructa, unus quisque caulis cum 1-7 internodiis et 0-4 ramis praeditus. Floret primo anno post sationem. Gelu resistens, sed siccitati sensibilis. Characteres oecophysiologicali et morphologici inter varietatem serotinam (sativam) et praecocem (hispanicam) sunt. Holotypus: CLA nr. 25920.
- var. (provar.) praecox Witte 1918 (recte var. hispanicum Gaud 1829) - broad red clover of two cut. Early. Average height of the stem is 60 cm, average internode number 6.7, generally with two inflorescence heads, flowerishes in the 1st year; perennity 1-3 years.

Cold susceptible.

- var. (provar.) expansum (W. et K. 1808 pro sp.) Hausskn. 1895
 subvar. (conculita) expansum - European cultivated hairy red clover.
 subvar. (conculita) americanum (Harz 1891) - American cultivated hairy red clover.

The systematic interpretation of var. expansum is also controversial (3, 4, 5, 7, 10), but following the study of the herbarium material existent in the Herbarium of the University Cluj-Napoca (CU), it seems that the opinion of WILLAX (in 3) and WILSIE (in 4) referring to the common origin of the two geographically isolated groups is well founded.

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BEITRÄGE ZUR KENNNTNIS DER MAKROMYCETEN RUMÄNIENS II.

D. Pázmány

Der zweite Beitrag zur Pilzflora Rumäniens enthält Daten über die Standorte und die Merkmale der in dem Artikel erwähnten Pilzarten, welche bisher aus Rumänien nicht bekannt waren, oder von denen nur 1-2 Fundorte angegeben wurden. Die Arten Verpa fulvocincta, Hebeloma clavulipes, Hygrophyrus lucorum und Russula zvarae sind entweder seltene oder umstrittene Arten aus ganz Europa.

OTIDEA CONCINNA (Pers.) Sacc.

Diese Pyrenomyceten-Art mit asymmetrischem einseitig-verlängertem Fruchtkörper, mit zitronengelblichem Äusseren und mit fleischgelblichem Hymenium war aus Rumänien an einem einzigen Standort, bei Bădulești (Kreis Argeș) bekannt (14). Neuerdings wurde der Pilz in den Parkanlagen des Agronomischen Instituts von Cluj-Napoca unter Picea abies, am 1.10. 1972 in spärlichen Büscheln gefunden. Die Sporen der untersuchten Exemplare haben eine durchschnittliche Grösse um 11,5-12/5-6 μ m (Abb. 1).

GYROMITRA FASTIGIATA (Krombh.) Rehm.

(Discina fastigiata Svr. et J. Moravec 1972; Neogyromitra caroliniana (Bosc ex Fr.) Imai)

Häufig in Laubwäldern in der Umgebung von Cluj-Napoca, zwischen April und Mitte Mai, besonders unter Quercus petraea, Carpinus betulus, aber auch unter Populus tremula, wo er im Wald Făget von I. PAP (10.5. 1971) und von D. PÁZMÁNY (12 und 27.4.1975) und im Wald Pădurea Baciului von K. LÁSZLÓ und D. PÁZMÁNY (10.4.1977) gesammelt wurde.

Bis jetzt wurden aus Rumänien nur drei Nadelwald-Gyromitra-Arten mitgeteilt: G. infula (Schff. ex Fr.) Quéél., G. gicca (Krombh.) Imai und

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