Buletinul Grădinii Botanice Iaşi
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FLORISTIC CONTRIBUTIONS

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Abstract: The paper represents a part of the research carried out in a five-year period (within my Ph.D. paper called: "The Flora and the Vegetation of the Lower Hydrographic Basin of the River Motru", coordinated by Professor V. CIOCÂRLAN, Ph.D.). The material contains additional information for the diagnosis of the taxa: *Agróstis canína* L. subsp. *canína*, *Círsium créticum* (L.) D' Urv.; it suggests a new variety for the species *Trifólium stríctum* L. var. *pubéscens* Costache var. *nova*; the following species are noticed to be new for the region of Oltenia: *Achilléa roseo-álba* Ehrend., *Cárex guestphálica* (Boenn. ex Rchb.) Boenn. ex O. Lang (with taxonomic considerations), *Galinsóga quadriradiáta* Ruiz & Pav., *Xánthium saccharátum* Wallr.

Key words: taxa, diagnosis, chorology, the Romanian flora.

Introduction

Following a thorough analysis of the identified species in the territory under research, certain morphological characters were emphasized as not corresponding to the diagnosis of the dichotomy keys for certain taxa. Given this situation, we considered their mentioning as being a proper thing to do, in order to complete at least the diagnosis, without hurrying in creating new sub-specific taxa, which are subject to variability.

Within this context, the following taxa are taken into consideration, being presented alphabetically: *Agróstis canína* L. subsp. *canína*, *Cirsium créticum* (L.) D' Urv.

According to some constant and obvious quality characteristics, we have suggested a new variety for *Trifólium stríctum* L. var. *pubéscens* Costache var. nova.

On the other hand, the following species are to be considered as new ones for the region of Oltenia: *Achilléa roseo-álba* Ehrend., *Cárex guestphálica* (Boenn. ex Rchb.) Boenn. ex O. Lang (with taxonomic considerations), *Galinsóga quadriradiáta* Ruiz & Pav., *Xánthium saccharátum* Wallr., from the territory under research.

We have to mention that both the schemes, scannings and the photos taken with a digital camera, with a binocular lens, are based on original material (the text of the pictures does not contain this specification). For the pictures coming from the specialty literature, we have mentioned, in the text, their author and the year.

Taxonomic Observations

Agróstis canína L. subsp. ***canína***

The analyzed material (alive and then preserved) comes from mes-mesohygrophyle places in the Buiceşti Village (Mitulani), in the spreading area for the forests of Turkey oak (*Quércus cérris*) and Hungarian oak (*Q. fraínetto*), alt. 140-150 m, collected 19. VI. 2003; locality of Ciochiuţa (Strehaia), alt. 180-200 m, 01.VII. 2003.

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The features which were pointed out at the collected material in the territory under research best correspond to the diagnosis given by Tutin 1980, in Flora Europaea Vol. 5.

- The ratio pile of work/lemma = 1/2 – 1/3.

Revealing the unmentioned features in the diagnosis of the species in The Romanian Flora Vol. XII (Beldie 1972):

- stemy leaves of about 1-2 mm, either plain or involute (fig. 1)**,** scabres (features mentioned only by Tutin 1980) at the analyzed material, on its both surfaces;

- in transversal section (fig. 1.) one can notice, through the leaf under the panicle, the presence of the sclerenchyma both under the lower epidermis and under the lower one, better developed at the level of three nervures (something that resembles the section performed at *Agróstis gigantéa* Roth. subsp. *gigantéa* by Dihoru 1980 -Pl. III. fig. 11, but without talking about the same taxon);

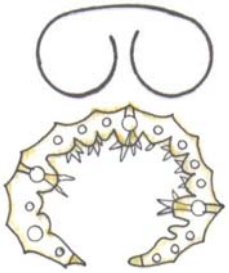

Fig. 1. Draft representing the involute shape and a transversal section through the leaf under the panicle.

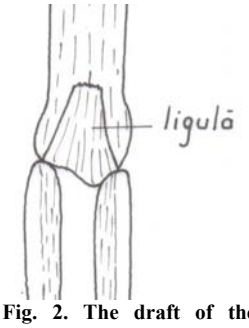

Fig. 2. The draft of the ligule.

- the ligule of the last leaf of about 2 mm is truncated and not acute - fig. 2 - (characteristic mentioned in every diagnosis);

- the glumes (of about 2-2.2 mm) present thin aculeoles on the whole surface - fig. 3 - (and not only ciliary on the bottom, a feature met in all the diagnoses);

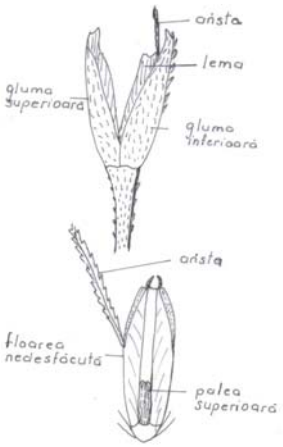

Fig. 3. Draft representing the little ear and the flower

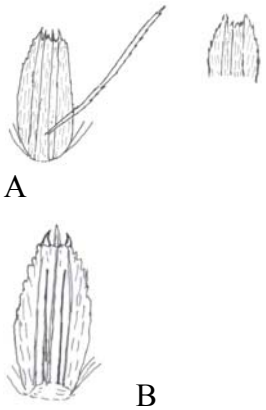

Fig. 4. Draft representing lemma shapes: with arista (A) and without arista (B).

Fig. 5. Lema, according to Zangheri 1976

- in the same panicle we have both little ears with flowers where the lemma is with aristae, and little ears with flowers where the lemma is without aristae (characteristics also mentioned in The Romanian Flora at subsp. *canína*, var. *canína* f. *canína*);

- the arista is geniculated, inserted in the lower half of the lemma - fig. 4 - (feature mentioned by Tutin

Fig. 6. *A. canína* according to Rothmaler 2000

1980). In the Romanian Flora, Beldie 1972, and in the Flora Italica, Zangheri 1976, it is specified that the arista is inserted in the middle or above the middle of the lemma (fig. 5.);

- the lemma for the little ears with arista presents two lateral denticles (a characteristic that appears in the diagnosis) and another 4 denticles which can be noticed in extension to the nervures (unspecified characteristic) - fig. 4 (A);

- the lemma for the little ears without aristae presents three nervures, two laterals and a median one, which continue with noticeable denticles, and two nervures which do not reach the top of the lemma - fig. 4 (B) - (unspecified characteristic);

- in all the cases, the lemma presents delicate aculeoles at the surface (unspecified characteristic);

- at the basis of the lemma, the callose presents a tuft of delicate hairs (characteristic which appears only in Flora Europaea, Tutin 1980); at the Ciochiuța material, with little ears without aristae (corresponding to *A. canína* var. *mútica* Gaud.), the callose at the basis of the lemma does not present thin hairs.

Cirsium créticum (L.) D' Urv. [*C. polyánthemum* auct., non (L.) Spreng.]

In The Romanian Flora, the species is mentioned just in few localities: Cs: Orşova; MH: In the Danube River Meadow, near the Drobeta-Turnu Severin City; in the Motru River Meadow at Broşteni Village (Strehaia); OT: Cilieni (Corabia) (Grecescu 1898, Nyárády 1964, Beldie 1979, Ciocârlan 1990, 2000), being included in the Red National Lists.

In the lower basin of the Motru River, the species was identified in low, swampy areas, both in the meadows and in the hilly areas, in all localities (Costache 2004).

After analyzing the collected material in several stations, we have pointed out the variability of the following features:

- the roots are spindly-shaped tuberized (fig. 7) and they are not as thin as it appears in the species diagnosis;

- the leaves range from a narrow to a broad, lanceolate, pinnate-partite shape, and not only with a narrow, lanceolate, deeply pinnate-sectional shape (fig. 8, 9);

- the antodies are solitary, with a long peduncle but they are grouped (two or three) in sessile or sub-sessile raceme (fig. 10);

In Flora Europaea Vol. 4 (Verner 1976) there is no mention of these features.

We have to follow, in the future, whether it is about another sub-specific taxonomic unit or not.

Fig. 7. Tuberized roots at the same plants.

Fig. 8. The shape of the leaves at the plants in swampy places

Fig. 9. The shape of the leaves at the plants in moist places

Fig. 10. Detail regarding the inflorescence.

Trifólium stríctum L. [*T. laevigatum* Poir.] (fig. 11)

Comparing the material collected by us to the plants collected from the Olimp Mountain, the locality of Orşova (CS) - Leg. et det. E. I. Nyárády - F.R.E. Nr. 562/30. V. 1923, we have noticed the following differences:

All the plants collected by E. I. Nyárády have glabrous stems and the pods with two lenticular seeds, of a brown-blackish color (L. = 1-1,1 mm and width = 0,8-09 mm) (fig. 12, A); the pedicels of the inflorescences are hairy adpressed (fig. 13).

Looking into the specialty bibliography, in the species diagnosis (Nyárády A. 1957, Coombe 1968, Zángheri 1976, Beldie 1977, Ciocârlan 1999, 2000) the plants are glabrous, and the pods have two seeds.

In The Bulgarian Flora (Cozhukharov 1976) we have in the diagnosis of the species glabrous plants, and pods with one or two seeds.

Fig. 11. *Trifólium stríctum*

A

B

Fig. 12. The calyx, the pod, and the seeds at: **A**-*Trifólium stríctum*; **B**-*Trifólium stríctum* L. var. *pubéscens* Costache var. *nova*

T. stríctum L. var. ***pubéscens*** Costache var. *nova* in Add.

The stems have short, thick hairs (fig. 14), disposed more or less patently, while the pods have a globulous-ellipsoidal seed, of a lighter colour (L. = 1,2 mm and width = 0,7 mm), (fig. 12, B).

Ecology: brown, mesobasic soils with a weak acid-neutral reaction – mesoxerophilic, calcifugal, subthermophilic.

Cenotaxonomic belonging: Festuco-Brometea, Festucetalia valesiacae.

Localities: MH: Strehaia, Ciochiuța, in the meadows of *Festuca rupicola*, alt. about 200 m.s.m., 01. VII. 2003.

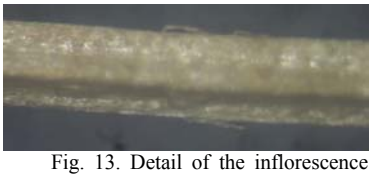

Fig. 13. Detail of the inflorescence peduncle, where one can notice the adpressed hairs at *Trifólium stríctum*.

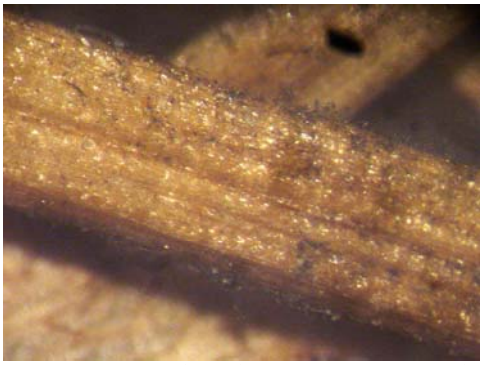

Fig. 14. Detail of the stem, to point out the hairiness at *Trifólium stríctum* L. var. *pubéscens* Costache var. nova

Achilléa roseo-álba Ehrend. (fig. 15)

The collected material corresponds to the description made by Morariu I. & Nedelcu G. 1978, being also identified f. *violacea* Morariu & Nedelcu with violet-purple flowers which differ from the pale-reddish or white flowers characteristic to this type.

The possibility for the taxon to have a hybrid origin between *A. asplenifólia* Vent. x *A. setácea* Waldst. & Kit. (Richardson 1976), is rather doubtful because, both in Flora Italica (Zángheri 1976) and in *Exkursionsflora von Deutschland* (Rothmaler 1994, 2000, 2002) *A. asplenifólia* Vent. it is not mentioned, the only mentioned being *A. setácea* Waldst. & Kit and *A. roseo-álba* Ehrend.

At a national level, it is mentioned as rare in ruderalized meadows around the city of Constanța (Morariu & Nedelcu 1978; Ciocârlan 1990, 2000).

Stations. MH: Stângăceaua (between the villages of Poșta Veche and Pârlogeni), alt. 180, 09.VII.2003; Slătinicul Mare, alt. 180, 09.VII.2003; Gura Motrului, alt. 150-200, 15.VIII.2001 (Costache 2004).

At the analyzed material, the following features were mentioned, regarding the leaves and the antodies (fig. 16, 17):

- uniformly silked, hairy leaves, 0.5-0.7 mm in width, resembling those of *A. setácea;*
- the rachis: 0.8-0.9 mm, crenated;
- narrowed segments, similar to those of *A. setácea*;

Fig. 15. *Achilléa roseo-álba*

- the antody with L.= about 4 mm and width = about 2 mm;

- involucral hypsophilis, with scarce hairs, without obvious edge.

Fig. 16. Leaf fragment, at *Achilléa roseo-álba*

Cárex guestphálica (Boenn. ex Rchb.) Boenn. ex O. Lang [*C. polyphýlla* Kar. & Kir., *C. leérsii* F. W. Schultz non Willd, *C. pairéi* F.W. Schultz var. *leérsii* (F. W. Schultz) Kükenth., *C. muricáta* L. var. *leérsii* Kneuck., *C. chábertii* F. W. Schultz, *C. leersiána* Rauschert, *C. divúlsa* subsp. *leérsii* (Kneuck.) W. Koch)].

The process of differentiating the taxa within the **muricáta** group seems to raise some difficulties.

This question was raised because of the difficulty given by the framing of our collected material, in the territory under research, at one of the three taxa:

Fig. 17. The antody at *Achilléa roseo-álba*

- *Cárex divúlsa* Stokes subsp. *chabértii* (F. W. Schultz) Asch. & Graebn. [*C. chabértii* F. W. Schultz] - fig. - 19, B - (collected material MH: Comăneşti (common oak glades), alt. 300-380 m, 04.VI. 2000) according to Ciocârlan 2000;

- *Cárex polyphýlla* Kar. & Kir. [*C. divúlsa* subsp. *leérsii* (Kneuk.) W. Koch] - fig. 19, A - (collected material MH: Butoieşti (Dl. Ştefanu, in the meadows near the skirt of the Turkey oak and Hungarian oak forest), alt. 200m, 10.VI.2001; Buiceşti (Sat Mitulani), alt. 160-250 m, 10. VI. 2001) according to: Dihoru 1970, Beldie 1979, Ciocârlan 2000, Rothmaler 2000 (fig. 18);

- *Cárex pairéi* F. W. Schultz var. *leérsii* (F. W. Schultz) Kükenth. - (collected material MH: Dl. Cerângani, alt. 300-347 m, 16.IV.2000) - according to Şerbănescu 1966.

These difficulties appear because of the similar characteristics regarding the length of the inflorescence, the disposition of the little ears, the disposition, dimensions and the morphological characteristics of the utricles and the width of the leaves.

In *Exkursionsflora von Deutschland*, Band 9, Rothmaler 2002 reconsiders the **muricáta** group and rethinks the systematic position of the taxa *Cárex polyphýlla* Kar. & Kir., passing it in synonymy at *Cárex guestphálica* (Boenn. ex Rchb.) Boenn. ex O. Lang, next to the taxa: *C. leérsii* F. W. Schultz non Willd., *C. chabértii* F. W. Schultz, *C. leersiána* Rauschert; *C. divúlsa* Stokes subsp. *chabértii* (F. Schultz) Asch. & Graebn.

Although we do not possess all the information that Rothmaler uses to present the taxa, we can be sure that it is based on the International Nomenclatural Code.

Regarding the differentiating characteristics and the diagnosis of the two taxa: *Cárex pairéi* F. W. Schultz (fig. 20, 21-left) and *Cárex guestphálica* (Boenn. ex Rchb.) Boenn. ex O. Lang (fig. 19, A and B; 21-right), we must say that they remain the same according to Ciocârlan 2000.


*Sparrige Segge – *Cárex muricáta* 0.20–0.60 ♃ 5–8 (Sp meist braun bis rot braun). Von L nach R: *C. spicáta*, *C. divúlsa* (Sp blaßbraun), *C. pairaéi*, *C. leérsii*

Fig. 18. Group *muricáta* (Rothmaler 2000).

Fig. 21. *Cárex pairéi* (left); *Cárex*

A **B**

Fig. 19. *Cárex guestphálica* [A - *C. polyphýlla* (*C. pairéi* var. *leérsii*); B - *C. divúlsa* subsp. *chabértii*].

Fig. 20. *Cárex pairéi* (Scanned according to the herbarium material: Leg. & det. Erik Asplund, 6. VII. 1927 Mus.Botan. Stokholm. Flora Suecica.

Fig. 22. Detail where one can notice the involucral squamae which are shorter than the calyx at *Galinsóga quadriradiáta.*

Fig. 23. Detail where one can notice the fructiferous involucre thorns, with 80% not uncinate and 20% uncinate, glandulous almost to the tip at *Xánthium saccharátum.*

Galinsóga quadriradiáta Ruiz & Pav., **Xánthium saccharátum** Wallr., it is only mentioned their identification in the lower basin of the Motru River, the presentation of the two species being made by Ciocârlan 2004.

Stations for: *Galinsóga quadriradiáta* (fig. 22): MH: Strehaia (Lunca Huşniţei), alt. about 180 m, 06.VIII.2003; GJ: Glogova (Lunca Motrului), alt. about 200 m, 15.X.2000; *Xánthium saccharátum* (fig. 23) is also identified in the lower basin of the Motru River, between Negoeşti and Gura Motrului, in mezohygrophilic places, on barren, ruderalized agricultural areas.

Conclusions

The paper presents original floristic contribution in the direction of diagnosis completion for the taxa: *Agróstis canína* L. subsp. *canína*, *Cirsium créticum* (L.) D' Urv.; it suggests a new variety in the case of the species *Trifólium stríctum* L. var. *pubéscens* Costache var. nova; the following are noticed to be new for the region of Oltenia: *Achilléa roseo-álba* Ehrend., *Cárex guestphálica* (Boenn. ex Rchb.) Boenn. ex O. Lang (with taxonomic considerations); *Galinsóga quadriradiáta* Ruiz & Pav., *Xánthium saccharátum* Wallr. (without taxonomic considerations, being processed and presented by Ciocârlan 2004.

ADDENDA
DIAGNOSES PLANTARUM NOVARUM

Trifólium stríctum L. var. **pubéscens** Costache var. nova.

Caulis ± minute patento-pubescentibus. Fructus unio seminibus (raro 2). Seminibus formatura ± globosus, roseis, 1,2 mm longis, 0,7 mm latis. Oltenia, Distr. Mehedinți. In pratis "Festucion valesiacae" prope pagum Ciochiuța (Strehaia). Alt. cca. 200 m., 01. VII. 2003.

Bibliography

1. BELDIE AL., 1977, 1979 – *Flora României. Determinator ilustrat al plantelor vasculare.* Vol. I, II. Bucureşti: Edit. Academiei Române 412 pp., 406 pp.
2. CIOCÂRLAN V., 1988, 1990 – *Flora ilustrată a României*. *Determinarea şi descrierea speciilor spontane şi cultivate*. Vol. I, II. Bucureşti, Edit. Ceres, 512, 597
3. CIOCÂRLAN V., 2000 – *Flora ilustrată a României*. *Pteridophyta et Spermatophyta.* Bucureşti, Edit. Ceres, 1138 pp.
4. CIOCÂRLAN V., 2004 – Contribuții la cunoașterea Florei României. *Bul.Grăd. Bot. Iași,* 12: 5-7
5. COSTACHE I., 2004 – *Ecologia, corologia şi cenologia speciilor rare şi vulnerabile din Bazinul inferior al Motrului/The Ecology, Chorology and Coenology of the Rare and Vulnerable Species in the Inferior Basin of the River Motru.* Analele Univ. din Craiova, Fac. de Horticultură, Volum Omagial/Annals of the University of Craiova, Vol. VII(XLIII). Cluj-Napoca, Edit. Eurodidact, P-ța Karl Liebknecht nr. 2.: 239-257
6. COZHUKHAROV S. (EDS.), 1976 – *Trifolium.* Pp. 327-441. In: D. Iordanov. *Flora Republicae Popularis Bulgaricae* VI. Serdicaie in Aedibus Academiae Scientiarum Bulgaricae
7. DIHORU G. & DONIȚĂ N., 1970 – *Flora şi vegetația podişului Babadag*. Bucureşti, Edit. Academiei Române, 438 pag.
8. DIHORU G., 1980 – Două specii de Agrostis gigantea. *Stud.Cercet.Biol., Biol. Veg.,* **32**(1):19-26
9. MORARIU I. & NEDELCU G., 1978 – O nouă specie de Achillea în Flora României. *Stud. Cercet. Biol., Biol. Veg.,* **30**(2): 123-124
10. NYÁRÁDY E. I., 1964 – *Cirsium*. Pp. 712. In Tr. Săvulescu & al. (ed.). *Flora României.* Vol. IX. Bucureşti, Edit. Academiei Române.
11. PRODAN I., 1931 – *Achilleele României.* Monographie. Tipografia "Cartea Românească", Cluj. 68 pag. + 43 Tabulis et 4 Chartis
12. PRODAN I. & NYÁRÁDY E. I., 1964 – *Achillea*. Pp. 362-410. In: Tr. Săvulescu & al. (ed.). *Flora României.* Vol. IX. Bucureşti, Edit. Academiei Române
13. RICHARDSON I. B., 1976 – Pp. 163 *Achillea*. In: T.G. Tutin & al. (eds*). Flora Europaea.* Vol. 4. Cambrige, Cambrige University Press., i-xxx, 1-439 pp. + 5 maps.
14. ROTHMALER W., 1994 – *Exkursionsflora von Deutschland.* Band 4. Gefäßpfanzen: Kritischer Band. Gustav Fischer Verlag Jena – Stuttgart. 811 pp.
15. ROTHMALER W., 1999 – *Exkursionsflora von Deutschland.* Band 2. Gefäßpfanzen: Grundband. Spektrum Akademischer Verlag Heidelberg - Berlin. 640 pp.
16. ROTHMALER W., 2000 – *Exkursionsflora von Deutschland.* Band 3. Gefäßpfanzen: Atlasband. Spektrum Akademischer Verlag Heidelberg - Berlin. 754 pp.

17. ROTHMALER W., 2002 – *Exkursionsflora von Deutschland.* Band 9. Gefäßpfanzen: Kritischer Band. Spektrum Akademischer Verlag Heidelberg - Berlin. Pp. 813
18. ŞERBĂNESCU I., 1966 – *Carex.* Pp. 723. In: Tr. Săvulescu & al. (ed.). *Flora României*. Vol. XI. Bucureşti, Edit. Academiei Române
19. ZÁNGHERI P., 1976 – *Flora Italica (Pteridophyta-Spermatophyta).*A Chiavi Analitiche Corredate Da 7750 Illustrazioni In 210 Tavolex per la determinazione delle piante spontanee indigene, naturalizzate, avventizie e delle piú largamente cultivate. Con la collaborazione Aldo J. B. Brilli-Cattarini. I Testo. Padova Cedam-Casa Editrice Dott. Antonio Milani. 210 pp.
20. ZÁNGHERI P., 1976 – *Flora Italica (Pteridophyta-Spermatophyta).*A Chiavi Analitiche Corredate Da 7750 Illustrazioni In 210 Tavolex per la determinazione delle piante spontanee indigene, naturalizzate, avventizie e delle piú largamente cultivate. Con la collaborazione Aldo J. B. Brilli-Cattarini. Ii Testo. Padova Cedam -Casa Editrice Dott. Antonio Milani. 1157 pp.