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BOTANIK

Hesperis luristanica DVOŘÁK sp. nova

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(With 3 Figures)

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1. Introduction

At the study of the genus *Hesperis* for the Flora of Persia I had difficulties with the classification of a specimen from the locality Dorud in Luristan. I had evaluated it provisionally as a form of *H. Novakii*. A second specimen from the same locality, kindly supplied by prof. RECHINGER, shows that it is another new species of the genus *Hesperis*.

2. *Hesperis luristanica* DVORÁK sp. nova

Planta perennis, pilis praecipue glanduliferis phragmiferis articulatis tecta, interdum autem subglabra. Radix palari-ramosa, lignosa, basi foliorum emarcidorum dilaceratorumque annorum praeteritorum vestita. Caulis erectus, circiter 30—50 cm altus, a parte media ramosus, basi pilis albis eglanduliferis simplicibus pro maxima parte reflexis usque ad 2 mm longis ac pilis glanduliferis supra descriptis adpressis tectus; pars caulina superior, inflorescentiae axis pedicellique pilis praecipue glanduliferis supra descriptis tecti; interdum caulis subglaber et superne solum pilis eglanduliferis bifurcatis, dichotomis ac pilis glanduliferis supra descriptis satis raris puberulus (Ic. 2b). Folia radicalia caulinaque inferiora oblonga usque lyrata, longe petiolata (lamina 8—9 cm longa et ca 3 cm lata, petiolus alatus usque ad 6 cm longus et ca 3 mm latus), apice obtusa usque acuta, margine remote dentata, basi autem grosse dentata; folia caulina media superioraque ovata: $\pm$4 cm longa et $\pm$ 3 cm lata), summa anguste ovata $\pm$2 cm longa et $\pm$0,6 cm lata), basi in petiolum brevem alatumque contracta seu omnino sessilia, apice acuta seu (folia summa) acuminata, margine grosse dentata; foliorum lamina pilis praecipue glanduliferis supra descriptis, foliorum margo nervusque primarius praecipue pilis eglanduliferis simplicibus tecti; interdum autem folia subglabra et pilis eglanduliferis bifurcis pilisque glanduliferis supra descriptis disperse puberula (Ic. 2a). Racemi

simplices, bracteae persistentes seu racemi omnino ebracteati. Pedicelli erecti, florendi tempore (6)—8—(12) mm longi. Sepala erecta, aequalibus pilis ut in pedicellis tecta, apice pilis paulo longioribus simplicibus eglanduliferis barbata, (7)—9—(10) mm longa. Petala fusca („brown"), venis saturatius coloratis; petalorum unguis ±15 mm longus; petalorum lamina (Ic. 2c) oblonga, 15—16 mm longa et ± 7 mm lata, apice usque ad 1 mm emarginata. Siliquae pilis tectae. Siliquas maturas seminaque non vidi. Floret: mense Aprili. Grana pollinis:

longitudo: $\bar{x} \pm 3.s\bar{x}$: 28, 13 μ ± 3,0,588 μ; ± s : 5,882 μ
latitudo: 21,54 μ ± 3,0,428 μ : 4,284 μ.

Affinitas: Haec species *H. odoratae* Dvořák, *H. Novakii* Dvořák ac *H. nivali* Boiss. et Haussk. proxima est. Ab *H. odorata* caule a parte media ramoso petalorumque forma, ab *H. Novakii* indumento, bracteis non semper persistentibus ac petalorum laminae forma, ab *H. nivali* caule ramoso, foliorum forma ac eorum margine atque petalorum forma dimensionibusque praecipue differt.

Typus: 1960/858 W: scheda: "Province of Luristan: Dorud. Rocky slope. 5. April 1941. Walter N. Koelz No 17186". Ic. 1.

Specimina visa: Province of Luristan, Dorud: 5. 4. 1941 Koelz No 17186; 1960/858 W. — Province of Luristan: Dorud. Alt. 8000 ft. Damp meadow. 2. 5. 1941 Koelz No 17417; 356/1960 W.

Note: A considerable variation of the species is evident from the description of *H. luristanica*. While the specimen No 17186, as appears from the photograph, preserved bracts in the inflorescence, the specimen No 17417 has no bracts in the inflorescence. The habit of both plants, the insertion of the leaves and their shape is identical. I do not propose, therefore, for the time being infraspecific taxa which could cover this variation.

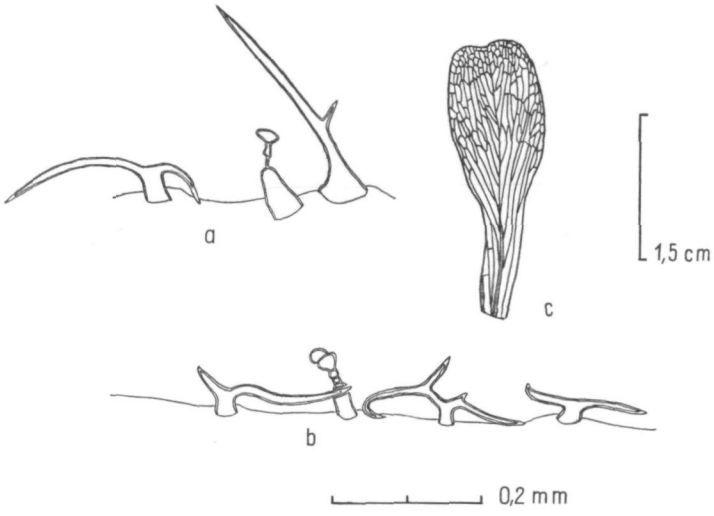

Abb. 2. *Hesperis luristanica* Dvořák sp. nova. Indumentum of leaves (a); indumentum of pedicels (b); petal (c). a b pictured according to specimen No 17417; c pictured according to specimen No 17186. Del. Dvořák.

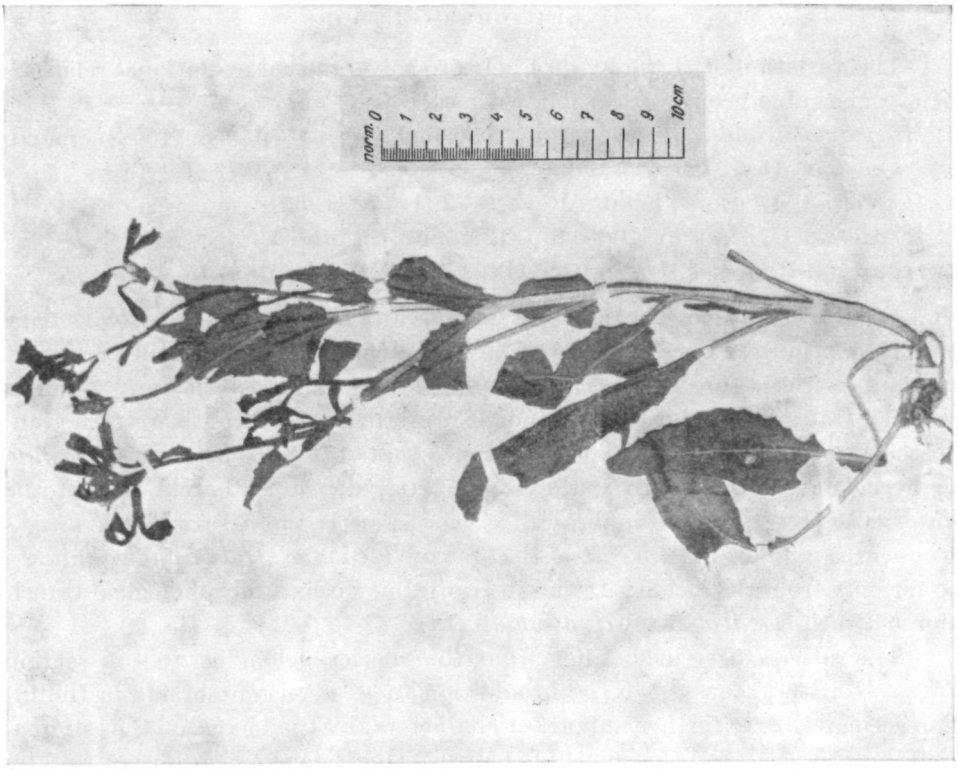

Abb. 3. *Hesperis nivalis* Boiss. et Haussk. Habitus.
Photo Nováček.

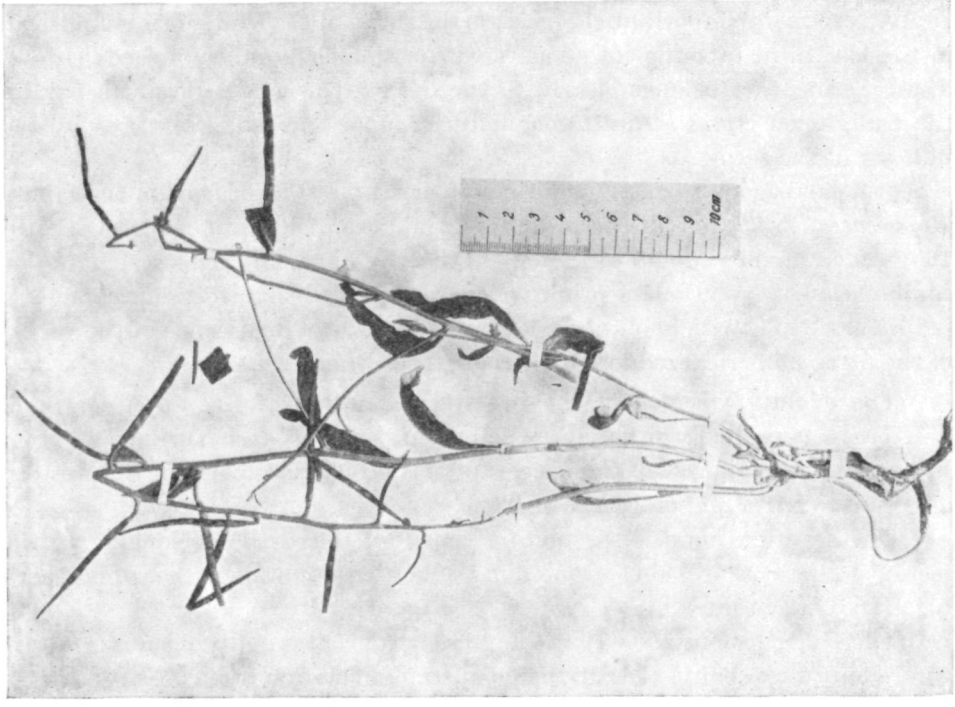

Abb. 1. *Hesperis luristanica* Dvořák sp. nova. Type.
Photo Nováček.

3. Evolutional relations

The variation of *H. luristanica* helps to solve mutual evolutional relations of a remarkable group of the following species:

1. *H. pulmonarioides* BOISS., Ann. Sci. nat. ser. 2, 17, 68 (1842) emend. DVOŘÁK, Oest. bot. Z. (1966);
2. *H. Novakii* DVOŘÁK, Feddes Repert. 72 (1): 22 (1965);
3. *H. odorata* DVOŘÁK in RECH. fil. Fl. Iranica (in press a);
4. *H. nivalis* BOISS. et HAUSSKN. in BOISS. Fl. Orient. suppl. 45, 1888.

From these species I consider *H. Novakii* and *H. odorata* to be evolutionary the most primitive ones: all flowers are bracteate; bracts are still persistent in plants with mature fruits *H. Novakii* grows in south-eastern Turkey and in western Iraq; *H. odorata* grows in north-western Iraq and south-western Iran. In the West the area of *H. Novakii* adjoins that of *H. pulmonarioides* (growing in Syria and south-eastern Turkey); the latter developes bracts only at the lowermost flowers of the inflorescence. The same is the case with *H. nivalis* whose area extends in Iran east of the area of *H. odorata*. *H. luristanica* (known so far only from the locality Dorud in Iran) thus forms a morphological transition between *H. nivalis* and *H. odorata*.

The species described differ from the species belonging to the section *Hesperis* of the genus *Hesperis*, in addition to ± persistent bracts in the inflorescence, also by further important characters: by the shape of the stigma, by the dehiscence and the shape of the fruits, by the colour of flowers, and by the shape of the petals.

An especially important character is the shape of the fruits: it is cylindrical, in the last third tapering into a part with a smaller number of seeds (Ic. 3). The tapering part belongs clearly to the ovary. The valves do not separate, the fruits open crosswise into unequally long portions (differing thus by the number of the seeds).

If it holds good that an evolutionary primitive type of fruit in the family *Brassicaceae* is "valvoid" according to the terminology of ZOHARY (1948: 160) — accepted by MOGGI in 1965 — so there is, in these species, a remarkable combination of evolutionary primitive characters (ball-shaped stigma, bracts — see HAYEK 1911) with evolutionary characters (loss of dehiscence of the valves of the pods, numerical reduction of seeds — see ZOHARY 1948).

The evolution centre of the investigated group of five species around *H. Novakii* is probably situated in the present south-eastern Turkey and Iraq. From there a migration of the species of this group took place in the western direction to Syria and eastward to Iran.

On the other hand the evolution centre of the species belonging to the section *Hesperis* is probably situated in the border mountain ranges of northern Asia (DVOŘÁK in press b).

These conclusions show that the present conception of the genus *Hesperis* will require a revision. I identify here 5 distinct evolution branches.

4. Summary

1. A new species of the genus *Hesperis* is described: *Hesperis luristanica* Dvořák.

2. *H. luristanica* represents a remarkable evolution branch with the species *H. Novakii* Dvořák, *H. pulmonarioides* Boiss. emend. Dvořák, *H. odorata* Dvořák and *H. nivalis* Boiss. et Haussk., differing from the species that belong to the section *Hesperis* not only by important morphological characters but also by the presumptive evolution centre.

5. References

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— (in press a): *Hesperis* L. — in K. H. Rechinger fil. Flora iranica.

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