

A SHORT CONTRIBUTION TO GENUS *ASTRAGALUS* L. (FABACEAE) IN TURKEY

SHAHIN ZARRE AND DIETER PODLECH¹

*Department of Biology, Faculty of Sciences,
Tehran University, Tehran, Iran.*

Abstract

Through selecting new epitypes for incomplete type material of both *A. cryptocarpus* and *A. rechingeri* the systematic position of *Astragalus cryptocarpus* is clarified. It was confirmed that the latter must be reduced under synonymy of the former. Scanning-electron microscopy showed that *A. cryptocarpus* belongs to *A. sect. Acanthophace*.

Introduction

The genus *Astragalus* is one of the most variable genera in Turkey and this country is a very important speciation centre of this genus. Because of the availability of insufficient material to the authors of the volume 3 of the Flora of Turkey (Chamberlain & Matthews, 1970), there are still some taxonomical problems in this genus in Turkey. Within tragacanthic *Astragalus* (for terminology see Zarre, 2000), *A. sect. Adiaspastus* Bunge, *A. sect. Macrophyllum* Bunge and *A. sect. Pterophorus* Bunge have recently been revised (Zarre, 2000), but *A. sect. Rhacophorus* Bunge, of which 3 new species have been described recently (Zarre & Duman, 1999) needs a more detailed study. *A. sect. Acanthophace* Bunge has been treated very differently by the authors. For example most species which have been treated as belonging to this section in the Flora of Turkey (Chamberlain & Matthews, 1970) were transferred into *A. sect. Adiaspastus* (Zarre, 2000) or into *A. sect. Acidodes* Bunge (Deml, 1972). *A. cryptocarpus* DC., was ignored by Chamberlain & Matthews (1970) and Deml (1972). The main goal of the present paper is to clarify the systematic position and present a detailed description of this species.

Material and Methods

This study is mainly based on herbarium material, received on loan from the herbaria: BM, E, G-DC, K, M, UPS and W abbreviations according to Holmgren *et al.*, 1990, and the supplements in different volumes of Taxon. Indumentum characters were measured in all parts of the plants using a Willd-Heerbrugg dissecting microscope. Scanning-electron-micrographs were prepared using a "Leo 962" instrument at the Institut für systematische Botanik der Universität München. Flower dissections were made for some specimens and added to the sheets after examination.

Results and Discussion

The type material of *A. cryptocarpus* is composed of only some sterile shoots, without any fruiting or flowering material that is why this species was treated as doubtful by Bunge (1867/68) and Boissier (1872). The original description (Candolle,

¹Institut für Systematische Botanik der Universität München, Menzingerstr. 67, 80638 München, Germany.

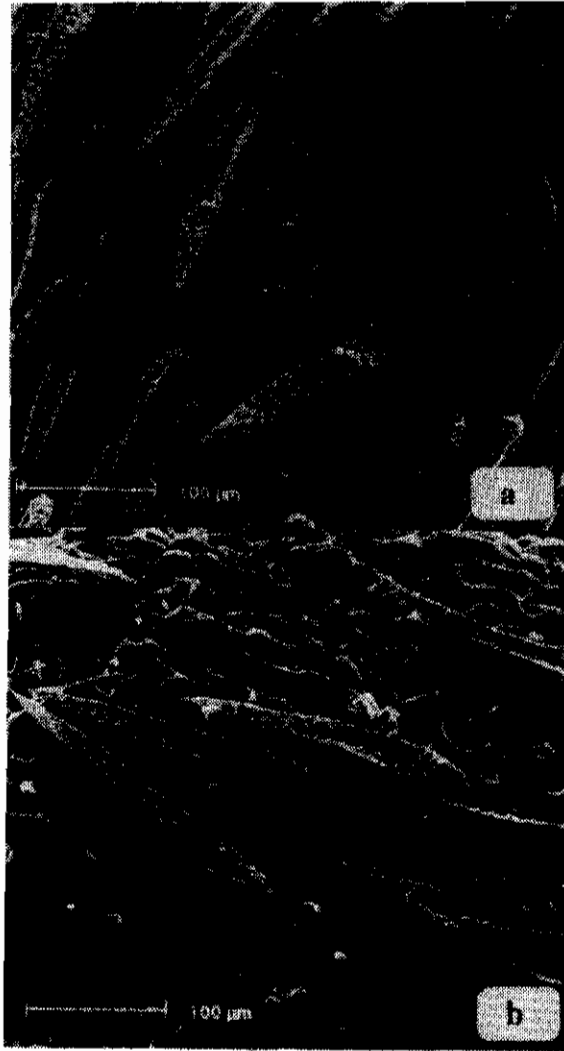


Fig 1. Scanning electron micrograph of the leaflet hairs in *A. sect. Acanthophaea*. a) *A. horridus* Boiss., and b) *A. cryptocarpus*.

1802) was most likely prepared on the basis of a poor specimen with only a few flowers and pods. Since the type material associated with this name is demonstrably ambiguous and cannot be critically identified, it was necessary to select an epitype (according to Greuter *et al.*, 1994), which is consistent with the original description and material of this name.

A. rechingeri Širj. & Rech.f., is the only thorny species of *Astragalus* in Turkey, whose characteristics match to some extent with the description of *A. cryptocarpus*. The type material of *A. rechingeri* is again a young plant without any ripe pod. But the new

collections of this species by Engel near the type locality confirmed that this species has bilocular fruits and therefore belongs to the *A.* sect. *Acanthophaea* sensu Deml (1972). Bilocular pods with only one seed in each valve and almost glabrous leaves and stipules are the features which were cited as characteristic of both *A. cryptocarpus* and *A. rechingeri* in the original descriptions. Moreover, there is no other species of *A.* sect. *Acanthophaea* distributed in Turkey. Therefore, the synonymy of *A. rechingeri* is well confirmed.

The type material of *A. rechingeri* as well as other specimens belonging to *A. cryptocarpus* show the hair type typical for *A.* sect. *Acanthophaea*: the hairs are appressed, ribbon-like and densely papillose (Fig. 1). As recently reported by Zarre (2000), this hair type is also common within subtribe *Coluteinae* of the tribe *Galegeae*.

Specimens examined:

Turkey: Prov. Bitlis/Van: mt. 10 km SE Pelli, 8000', 8.7.1954, *Davis & Polunin 22582* (BM, E) ; Prov. Van: dist. Satak: Kavussahap Dag, 9000', 27.7.1954, *Davis & Polunin 23075* (BM, E); Tatvan to Gevash, Kugunkiran Gecidi, 2250 m, 11.8.1987, *Engel 110* (M).

A. horridus Boiss., distributed on Iranian Zagros range, is the next relative of our species. Both species possess glabrous stipules and stem and similar flower parts, but stipules and bracts are membranous in *A. horridus*, while they are chartaceous in *A. cryptocarpus*. Moreover, the fruits are shorter in the former than the latter.

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