A TAXONOMIC REVISION OF COUSINIA CASS. SECT. CHAETOCEPHALAE (ASTERACEAE)

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The series Cousinia sect. Leptocephalae ser. Chaetocephalae is raised to sectional rank as a comb. nov. It is characterized from the closely related section Leptocephalae by having solitary heads at the top of stems and branches, sessile stem leaves and yellow corolla. Three species namely Cousinia crassipes, C. attariae and C. chaetocephala are included in the new section. C. attariae is described as a new species from the mountains near Esfaraen in Khorasan province.

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INTRODUCTION

The genus Cousinia Cass. has recently been the subject of taxonomic studies for preparing Cousinia as a part of the project Flora of Iran by the author and his colleagues F. Attar from College of Science, University of Tehran (TUH) and I. Mehregan from Islamic Azad University (Assadi 1989). In the recent years many new species have been described by various authors (Attar & Ghahreman 2006; Mehregan & Kadereit 2008; Attar & Mirtadzadini 2009; Mehregan & Assadi 2009; Assadi 2009; Attar & Djavadi 2010). The number of species has been estimated from 600 to 700. However, great controversy is on the circumscription of the species and accordingly number of species (Attar & Ghahreman 2006 and Mehregan & Kadereit 2009).

Among the studied specimens, a specimen seemed to be interesting and not fitting to any of the known species. These specimens seemed to be affinities of Cousinia sect. Leptocephalae. The present species was included in the series Cousinia sect. Leptocephalae Tschern. ser. Chaetocephalae Tschern. by Tscherneva (1962) in Flora of the USSR. Rechinger (1972) in Flora Iranica excluded Cousinia sect. Leptocephalae from the sect. Chaetocephalae and cited it as species of uncertain position.

The aim of this paper is to circumscribe sectional rank of Cousinia sect. Leptocephalae and to revise the section and its contents taxonomically.

MATERIALS AND METHODS

Field trips were made to different places of Iran mainly also in the type localities from 1975 afterwards. The herbarium specimens of TARI and partly TUH herbarium were studied. Different Floras and taxonomic revisions were used for the identification of materials (Bunge 1865; Winkler 1892; Tscherneva 1962; Rechinger 1972; Rechinger 1979) Photographs of many type materials were prepared by my colleague I.
RESULTS AND DISCUSSION

During the studies, it seemed Cousinia sect. Leptocephalae as described by Tscherneva (1962) is quite heterogeneous by having following characters: heads solitary or congested, ovoid or narrowly cylindrical; corolla pink, flesh colored or yellow; leaves sessile or long decurrent. Based on the variations of these characters Tscherneva (1962) divided the section into three series, i. e. ser. Leptocephalae, ser. Hypopoliae Tschern. and ser. Chaetocephalae Tschern. Among them ser. Chaetocephalae by having solitary heads, yellow corolla and sessile leaves clearly differs from the other two series and therefore comparing to the characters of the other sections of the genus needs to raise its rank to sectional level.

Cousinia sect. Chaetocephalae (Tschern.) ex Assadi, comb. nov.


Differt a sectionis Stenocephalae Bge. capitulis ad apicem ramis singularibus, foliis caulinis petiolatis, sessilibus vel amplexicaulis supermis deficientibus. Typus. Cousinia chaetocephala Kult.

Plants perennial, woody at the base. Leaves leathery, spiny toothed or lobed at the margin, concolor or discolor; stem leaves amplexicaule or shortly decurrent. Capitula 1-4, single at the apex of branches, making a ±corymbose panicle, including spines 1-4 cm in diam.; lateral capitula exceeding the alar capitulum. Involucrum ovate, arachnoid. Bracts 70-120 in number, spiny at the apex; lower and middle bracts deflexed. Flowers 20-40. Corolla yellow. Anther tube purple, spiny at the apex; inner bracts shorter, narrowly oblongellipticate, membranous, spiny at the apex, scabrous at the margin. Flowers 30-40. Corolla 16 mm long, yellow, with 5 mm long tube, 11 mm long limb and 4 mm long teeth. Anther tube purple and glabrous. Receptacular bristles entire. Achene ca. 5 mm long, obpyramidate, brown, longitudinally striate, without teeth at the apex. Bristles of the pappus scabrous, longer than the achenes.

Specimen seen. Khorasan: Kalate Naderi, Gharasou, 1450 m, Assadi & Mehregan 92013.

The type material of C. crassipes has not been studied by the author. The description of the collected specimens differs partly from the original description of C. crassipes, by having upright stems 40-55 cm high (not ascending ca. 20 cm high); lanceolate or narrowly elliptic leaves lobed at the margin (not ovate oblong sinuate pinnatifid) and 7-12 x 3-5 cm basal leaves (not 6 x 3.5). However, the specimens have been collected near the type locality and the differences could well be due to the variation of the species.

C. crassipes was described by Kultiassov (1929) under the section Homalochoetae C. Winkl. questionably. Rechinger (1972) regarded the species under the same section together with C. czerniakowskae Kult. and C. horrida Kult. The section Homalochoetae is mainly a Central Asian section with the characters clearly different from C. crassipes. i. e. corolla pink. Therefore, C. crassipes is excluded from the section Homalochoetae and included in newly described sect. Chaetocephalae. Studies showed that C. horrida and C. czerniakowskae should also be excluded from the sect. Homalochoetae (not published).

Cousinia attariae Assadi & Joharchi, sp. nov. Fig. 2.

Planta perennis, caulibus numerosis, basi induratis foliis numerosis, 34 cm alta. Synflorescentia 3-4 capitulata, corymbosa. Folia basalia cum petioli 13 cm longis; laminae 5-7 cm longae, 3-4 cm latae, late ellipticeae, margine spinoso-dentatae spinis ca. 4 m longis, supra et...
Fig. 1. Cousinia crassipes (×0.58); flower (×12).
Fig. 2. *Cousinia attariae* (×0.5); flower (×1.5).
The new species is related to C. chaetocephala Kult., but differs from it by having basal leaves broadly elliptic, 3-5 cm broad (not narrowly elliptic, 1-3 cm broad), rounded at the apex (not clearly discolor), capitula 3-4 together (not 1-2 rarely 3), including spines 1.5-2.5 cm diam. (not 1-1.5).

The new species is named in honor of my colleague Dr. F. Attar from University of Tehran who has made a great contribution to the knowledge of Cousinia taxonomy.

3- C. chaetocephala Kult., Acta Univ. Asiae Mediae ser. 8b, Bot. no. 7: 7 (1929). Fig. 3.

Plant perennial, with numerous stems, woody at base with numerous basal leaves, 12-25 cm high. Stems cream, with wooly indumentum, ca. 2 mm in diam. at the base, branched from the middle. Capitula 1-3. Basal leaves including petioles 5-10 cm long; blade 4-7 cm long and 1-3 cm broad, narrowly elliptic, spiny toothed at the margin with ca. 5 mm long spines, on the lower side densely arachnoid, gray, on the upper side with less hairs, greenish gray, acute, asymmetric at the base; lower stem leaves similar to basal leaves; middle and upper leaves decreased in size, amplexicaule or shortly decurrent at base, ovate or lanceolate. Capitula including spines 1-1.5 cm in diam. Involucr. 1.5 cm long and 0.8-1 cm in diam., ovate, densely arachnoid. Involucral bracts 80-100, arcuate deflexed at the apex with ca. 3 mm spines; lower bracts smaller; middle bracts 10 mm long, subulate-linear, keeled on the dorsal surface, canaliculate on the inner surface; inner bracts 13 mm long, oblanceolate, membranous, scabrous at the margin and on the back. Flowers 20-30 in number. Corolla 13 mm, tube ca. 4, limb ca. 9 and teeth ca. 2 mm long, yellow. Anther tube purple, glabrous. Receptacular bristles glabrous. Achene ca. 5 mm long longitudinally nervet with 4 unequal apical teeth, brown; bristles of pappus scabrous, equaling the achene.

Specimens seen. Khorasan: 16 km N. of Ghouchan, on the road to Darrehgaz, 1750-2000 m, Assadi & Maassoumi 21401; mountains N. of Ghuchan, above the village Zubaran (EG4), 1700 m, Assadi & Hamdi 85626; the same locality, Babakanlou & Pabot 19874.

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Fig. 3. *Cousinia chaetocephala* (×0.77); flower (×4).