

NEW SPECIES OF THE GENERA NEPETA AND AJUGA (LABIATAE) FROM IRAN

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Ajuga saxicola Assadi & Jamzad sp. nov., *Nepeta pogonosperma* Jamzad & Assadi sp. nov. and *N. shahmirzadensis* Assadi & Jamzad sp. nov. are described. Relatives or affinities of the new species are discussed and the differences are explained.

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گونه‌های گیاهی جدیدی از جنس‌های *Nepeta* و *Ajuga* در ایران
از: زیبا جمزاد و مصطفی اسدی

Ajuga saxicola Assadi & Jamzad, sp. nov., *Nepeta pogonosperma* Jamzad & Assadi, sp. nov., *N. shahmirzadensis* Assadi & Jamzad, sp. nov.

عنوان گونه‌های گیاهی جدید برای دانش گیاهی معرفی و شرح داده میشوند.
علاوه بر این گونه‌های نزدیک به گونه‌های جدید مورد توجه قرار گرفته و
اختلافاتشان با گونه‌های جدید مورد بررسی قرار میگیرد.

Introduction

Through the identification of herbarium specimens collected in two excursions from N. and S. Iran and in the course of studies on the family *Labiatae* in the herbarium of Research Institute of Forests and Rangelands, at first three specimens considered to be of interest, which our closer cooperative studies proved them to be new species to the science.

Ajuga saxicola Assadi & Jamzad, sp. nov.

Planta perennis, pluricaulis, tota glabrata. Caules 10–40 cm longi, ascendentes, tenues, ca. 1mm crassi, simplices vel basi ramosi; internodia inferius ca. 4 cm longa, superius breviora. Folia inferiora cum petiolo ad 3 cm longa, mox emarcida, petiolata; petioli ca. 0.5 cm longi; lamina late obovato-cuneata, margine longis pilis ciliata, apice obtuse tridentata vel trilobata. Folia media et superiora [†] sessilia, obovato-cuneata, margine longis pilis ciliata, apice 3–5 lobata; lobi obtusi 4x2 mm. Inflorescentia laxus. Flores 13–18 mm longi, secus caules in axibus foliorum solitari, subsessiles. Calyx 4 mm longus, campanulatus, ad medium fissum; dens superior ca. 1 mm longus, anguste triangularis, margine ciliatus; dentes inferiores ad 2.5 mm longi, triangulares. Corolla

13–18 mm longa, rosea, extus pubescens, intus glabra; labium superius bidentatum; labium inferius trilobatum, lobus medianus ca. 6 mm longus, [†] orbiculatus, emarginatus, lobi laterales breviores, 1.5 mm longi. Stamina exserta. Stylus profunde bifidus. Nux ca. 3x1 mm, curvata, transverse rugosa, atrobrunnea.

Typus: Persia, Kohgilouyeh-Boirahmad, 41 km to Dehdasht on the road from Basht (VP3) 500 m, Assadi and Abouhamzeh 38650 (holotypus TARI), mixed *Quercus brantii* and *Amygdalus scoparia* woodland.

Perennial plant, many stemmed, glabrescent. Stems 10–40 cm long, ascending, thin, ca. 1 mm thick, simple or branched at base; lower internodes ca. 4 cm, uppers shorter. Lower leaves to 3 cm long, soon withering, petiolate; petioles ca. 0.5 cm long; lamina late-obovate-cuneate, ciliate with long hairs at margin, obtusely 3 – toothed to 3 – lobed at the apex. Middle and upper leaves [†] sessile, obovate-cuneate, ciliate with long hairs at margin, 3–5 lobed at the apex; lobes obtuse 4x2 mm. Inflorescence laxe. Flowers 13–18 mm long, solitary in axil of leaves along the stems, subsessile. Calyx 4 mm long, campanulate, toothed to the middle; upper tooth ca. 1 mm long, narrowly triangular, ciliate at margin; lower teeth to 2.5 mm long, triangular. Corolla 13–18



Fig. 1. *Ajuga saxicola* (x 1/2; flower x2.5).

mm long, rose, hairy outside, glabrous inside; upper lip bidentate; lower lip 3-lobed, middle lobe ca. 6 mm long \pm orbicular, emarginate, lateral lobes shorter, 1.5 mm long. Stamens exserted. Style deeply bifid. Nutlet curved ca. 3x1 mm, transversally rugose, dark brown.

The new species differs from *A. austro-iranica* Rech.f., which believed to be its most close species in glabrate habit, long glabrous and thinner stems and longer internodes. Inflorescence in the new species is always lax contains more numerous pairs of flowers.

***Nepeta pogonosperma* Jamzad & Assadi, sp. nov.**

(Sec. *Cataria* Benth.).

Perennis, basi lignescens. Planta tota pilis ramosis canis aureo-glandulis sessilibus immixtibus tecta. Caules pauci, 30–40 cm longi, erecti, ramosi; rami breves et steriles. Folia inferiora squamiformia, membranacea, atrobrunnescentia; folia media 3–4x1.5 cm., ovato-oblonga, basi rotundato-cuneata, subacuta, regulatim dentata, petiolata; petioli 5–6 mm longi; folia floralia caulinis similia sed minora. Verticillastri superiores sessiles et approximati; 1–2 inferiores remoti et in brevibus 2–3 mm longis pedunculis. Bracteae 6 mm longae, lineari-lanceolatae, violaceo-suffusae. Calyx 8 mm longus, tubuloso-campanulatus; dentes superiores

2 mm longi, triangulares; dentes inferiores 1.5 mm longi, lineares. Corolla 16 mm longa, violacea, extus puberula; tubus exsertus; labium superius 3 mm longum, ad 1/2 – 2/3 in lobos obtusum fissum; labium inferius lobo mediano 4 mm longum et 7 mm latum, distincte nervosum, basi pilis longis articulatis praeditum. Nux 3 mm longa, oblonga, indumento apice barbata ceterum pilis sparsis praedita.

Typus: Persia, prov. Mazandaran, S. of Lapasar, 2950 m, Runemark & Maasoumi 21689 (holotypus TARI).

Perennial, woody at base, total plant covered with branched whitish hairs intermixed with sessile golden glands. Stems few, 30–40 cm long, erect, branched; branches short and sterile. Lower leaves scale-like, membranous, dark brown. Middle leaves 3–4 x 1.5 cm, ovate-oblong, rotundate-cuneate at base, subacute, regularly toothed, petiolate; petioles 5–6 mm long. Floral leaves similar to the cauline leaves, but smaller. Upper verticillasters sessile and approximate; 1–2 lowers remote and on short 2–3 mm long peduncles. Bracts 6 mm long, linear-lanceolate, violet tinged. Calyx 8 mm long, tubular-campanulate; upper teeth 2 mm long, triangular; lowers 1.5 mm long, linear. Corolla 16 mm long. violet, puberulent on the outside; tube exserted, upper lip 3 mm long, cleft to 1/2 – 2/3



Fig. 2. *Nepeta pogonosperma* (x 1/2; flower x2; calyx x3).

into obtuse lobes; the middle lobe of lower lip 4 mm long and 3 mm broad, distinctly nerved, with long articulated hairs at base. Nutlets 3 mm long, oblong, with a tuft of hairs at the apex and few scattered hairs on other parts.

The most characteristic feature of the new species is presence of tuft of hairs on seeds which rarely occurs within the species of the genus *Nepeta*, but absent in close affinities of the new species.

N. pogonosperma resembles with *N. menthoides* Boiss. & Buhse, *N. asterotricha* Rech.f., *N. chionophila* Boiss. & Hausskn. and *N. crispa* Willd. in habit, indumentum, etc., which their seeds are destitute of tuft of hairs.

The new species more to the seed character differs from, *N. menthoides* which believed to be the most close species in having small sterile branches, leaves with rotundate base and different shape of calyx which has narrower anterior teeth as well as shallower incision between them. In *N. menthoides* branches are well developed and floriferous, leaves with cuneate base, etc. From *N. crispa* in ovate-oblong leaves with rotundate base (not ovate with cordate base) and different calyx characters. From *N. chionophila* in verticillasters which are close together (only 1–2 lowers remote) and longer calyx.

Nepeta shahmirzadensis Assadi & Jamzad sp. nov.

(Sec. *Capituliferae* (Benth.) Pojark.).

Perennis, basi lignescens. Planta tota canescenti-lanata. Caules plures ad 13 cm longi, simplices, foliis 2–3 paribus praediti. Folia inferiora petiolata; petioli laminae aequales vel longiores; laminae ad 18 x 16 mm, suborbiculares; basi truncatae vel leviter cordatae; marginibus crenatae. Folia superiora sessilia, diminuta. Inflorescentia capitata; capitulum rotundato-ovatus, raro verticillaster infimus remotus. Bractee 5 mm longae, lanceolatae, calicibus multo breviores. Calyx 8–9 mm longus, tubularis, [†]curvatus, obliquus, ad 1/3 fissum; dentes inferiores 3 mm longi, anguste lanceolati, superiores 2 mm longi, triangulares. Corolla 15–17 mm longa, caerulescens; tubus bene exsertus, limbo bene amplius abrupte expansus; labium superius profunde emarginatum, [†]obcordatum; labium inferius trilobatum, lobo mediano [†]orbiculari, lobis lateralibus suborbicularibus. Stamina leviter exserta. Stigma breviter bifidum. Nux immatura 2 x 1 mm, obscure verrucosa.

Typus: Persia, Prov. Semnan, ca. 50 km N. of Shahmirzad, Tang-e Parvar, 2100 m, Assadi & Mozaffarian 40448 (holotypus TARI).

Perennial, woody ad base. Total plant

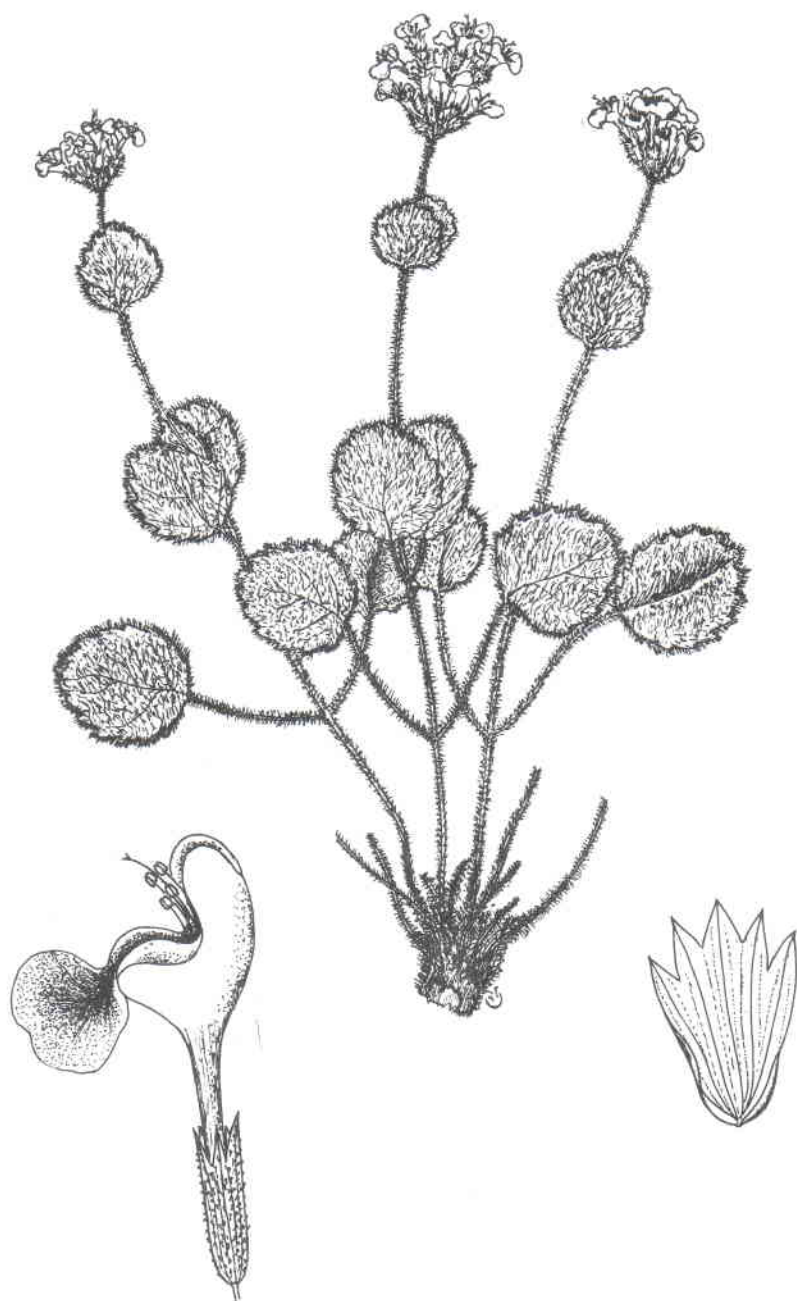


Fig. 3. *Nepeta shahmirzadensis* (nat. size; flower 4; calyx 3.5).

canescent-lanate. Stems many, to 13 cm long, simple with 2–3 pairs of leaves. Lower leaves petiolate; petioles equal to longer than lamina; lamina to 18 x 16 mm, suborbicular, truncate to somewhat cordate at base, crenate at margin. Upper leaves sessile, diminish in size. Inflorescence capitate; capitule rotundate-ovate, rarely the lowest verticillaster remote. Bracts 5 mm long, lanceolate, much shorter than the calyx. Calyx 8–9 mm long, tubular, \pm curvate, oblique, toothed to 1/3; lower teeth 3 mm long, narrowly lanceolate, upper teeth 2 mm long, triangular. Corolla 15–17 mm long, bluish; tube well exerted from the calyx, abruptly expanded to a well developed limb; upper lip deeply emarginate, \pm orbiculate; lower lip 3-lobed, middle lobe \pm orbicular, lateral lobes suborbicular. Stamens somewhat exerted. Stigma shortly bifid. Immature nutlets 2x1 mm obscurely verrucous.

The new species seems to be most closely related to *N. monocephala* Rech. f., but differs in its leafy stem, calyx length (8–9 mm), broader calyx teeth and larger upper and lower corolla lips (5 mm). In *N. monocephala* stems with 1–2 red-

uced bract-like leaves to 4x1.5 mm at base, calyx \pm 6.5 mm and much smaller corolla lips. It also differs from *N. iran-shahrii* Rech. f. in canescent-lanate habit, thin and narrow corolla tube which suddenly broadened to limb. In *N. iran-shahrii* greenish-glandulose habit, broader corolla tube which gradually broadened to the limb, smaller to 3 mm upper and lower lips.

N. lasiocephala Benth. with scattered crispate hairs and minute dense glands, equal or longer bracts than the calyx and somewhat exerted corolla differs from our new species with lanate indumentum, much shorter bracts than the calyx and well exerted corolla. Moreover the new species grows in crevices of rocks, whereas *N. lasiocephala* so far has been seen grows on soil slopes.

Comparing the new species with *N. kokanica* Rgl. and *N. pamirensis* Franch. more to the completely different geographical distributions following differences can be mentioned: In *N. shahmirzadensis* stems simple, leaves truncate to subcordate at base, bracts much shorter than the calyx, whereas in the two other species, stems branched all over, leaves cuneate at base and bracts longer.