

## THE GENUS *HYOSCYAMUS* L. (SOLANACEAE) IN IRAN

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The genus *Hyoscyamus* L. in Iran is revised. Altogether 13 species are recognized from Iran. *H. bornmulleri* is described as a new species from Iran and is compared with its close species *H. tenuicaulis*. 6 new synonyms are reported and a key for the species occurring in Iran is presented.

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جنس بنگ‌دانه (*Hyoscyamus*) از تیره سیب‌زمینی در ایران

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جنس بنگ‌دانه (*Hyoscyamus*) در ایران مورد مطالعه قرار گرفته است. از این جنس جمعاً ۱۳ گونه از ایران تشخیص داده می‌شود. گونه *H. bornmulleri* به عنوان گونه جدیدی از ایران شرح داده می‌شود و با گونه نزدیک به خود *H. tenuicaulis* مقایسه می‌گردد. ۶ مترادف جدید گزارش می‌شود و کلید شناسایی گونه‌های شناخته‌شده برای ایران ارائه می‌گردد.

## INTRODUCTION

This work is a revision of the genus *Hyoscyamus* L. in Iran. The work is based on the study of numerous herbarium specimens. The study was completed in the field in various parts of Iran. All the species were studied in the field at the type localities or specimens from the locus classicus or even the types. Schönbeck-Temesy (1972) in K. H. Rechinger Flora Iranica recognized 18 species from Iran. In this work 13 species are recognized from Iran. This article contains 1 new species, 6 new synonymous and a key for the Iranian species of the genus.

## NEW SPECIES

*Hyoscyamus bornmulleri* Khatamsaz, sp. nov. -Fig. 1.

(Subgen. *Dendrotrichon* Schönbeck-Temesy).

Planta caespitosa, rhizomate crasso. Caules multicipiti, dense flavescenti tomentosi, flaccidi usque ad 100cm longi, sulcati, penduli. Pilis simplicibus ac ramosis, glanduliferis dense vestiti tomentosi. Folia 2.5-5 x 2-5cm, late triangulari-ovata, subreniformia, suborbicularia, margine inaequaliter paucidentata, dense

flavescentia, tomentosa, nervis leviter prominulis, petiolata ac saepe una cum petiolis laminam aequantibus, dense tomentosa. Folia floralia  $\pm$  integra, late ovata vel orbicularia, petiolata, dense tomentosa. Inflorescentia cymosa, pauciflora. Pedicellus infimus 3-15mm longus, erecto-patulus vel saepius patulus, fructiferi ideo horizontalis. Calyx 18-22mm longus, infundibularis; dentibus 4-8mm longis, triangularibus, acutis usque acuminatis, praecipue basin versus dense glanduloso-tomentosis, fructiferis usque ad 30mm longis. Corolla calycem subduplo superans, usque ad 40mm longa, infundibularis, zygomorpha, tubo angusto calycem superans, albida, intus intense violaceo-adspersa, extus glanduloso-pubescentis. Stamina regioni mediae tubi inserta, filamentis parte inferiore tantum villosulis. Stylus arcuatus, pilosus usque glaber. Capsula ca. 7mm longa, late ellipsoidea, operculo dimidium fructus aequante. Semina reniformia, tuberculato-reticulata.

*Typus.* Fars, Shiraz, Bamou Park, 1900m, Dehbozorgi 32707 (holotypus TARI).

Perennial, caespitose plant, rhizome thick. Stems branched, densely yellowish tomentose, flaccid, up to 100 cm tall,

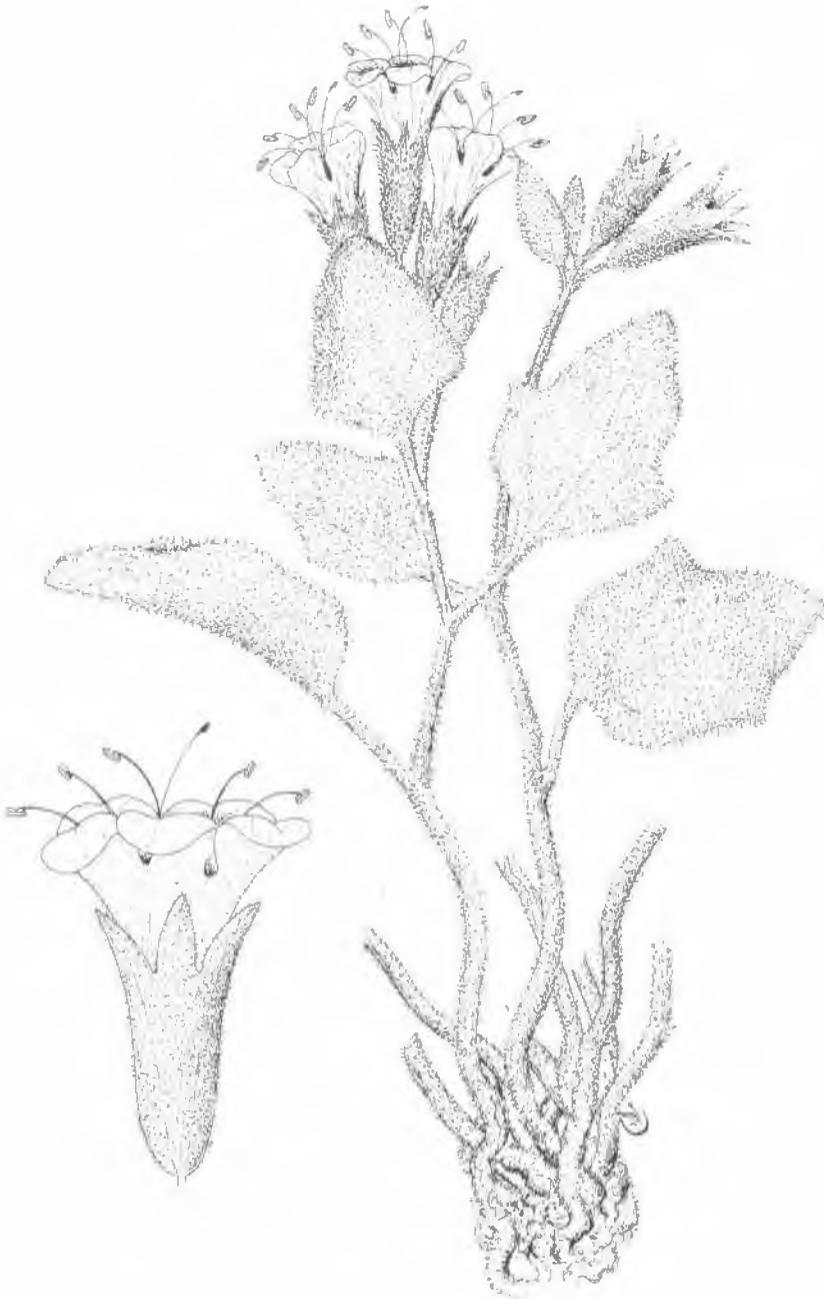


Fig. 1. *Hyoscyamus bommulleri* (x.07); flower (x1.4).

sulcate, pendulous. Hairs simple and branched, mixed, densely glandular-tomentose. Leaves 2.5-5 x 2-5 cm, broadlytriangular-ovate, semireniform, semiorbicular; unequally few-toothed at the margin, densely yellowish tomentose, nerves slightly raised. Petiole equal to lamina, densely tomentose. Raceme few flowered. Pedicel 3-15 mm long, erect-patent or patent. Calyx 18-22 mm long, funnel-shaped; teeth 4-8 mm long, triangular, acute to acuminate, especially toward the base glandulose-tomentose, up to 30 mm long in fruiting stage. Corolla double longer than the calyx, up to 40 mm long, funnel-shaped, zygomorph, tube narrow, white, violet inside, glandular-pubescent outside. Stamens included; filaments villous. Style arcuate, pilose to glabrous. Capsule ca. 7 mm long, broadly ellipsoid. Seeds reniform, tuberculate-reticulate.

The new species is close to *H. tenuicaulis* but is distinguished by having dense yellowish tomentose hairs, rounded to angular leaves, and up to 20 mm long calyx. In *H. tenuicaulis* indumentum villous, leaves triangular, rhomboid or very often lanceolate, and calyx up to 40 mm long.

The name *Hyoscyamus bornmullerianus*

was used first by Pascher and later by Bornmüller in Beih. Bot. Centrbl. 61B: 106 (1941), but without a Latin description. It is recognized as a distinct species and is described as a new species.

### KEY TO THE SPECIES

1. Plant woody at the base. Leaves succulent. Hairs simple and branched 2
- Plant annual or perennial, not woody at the base. Leaves thin, not succulent. Hairs simple 4
2. Stem erect, robust, terete. Calyx shallowly lobed. Leaves ovate, cuneate to attenuate at the base
  1. *H. insanus* Stocks
  - Stem pendulous, flaccid, sulcate. Calyx lobes oblong triangular. Leaves not ovate, cordate or truncate at the base 3
3. Plant covered with dense yellowish tomentose hairs. Leaves rounded to angular. Calyx up to 20 mm long
  2. *H. bornmulleri* Khatamsaz
  - Plant villous. Leaves triangular, rhomboid, very often lanceolate. Calyx up to 40 mm long
  3. *H. tenuicaulis* Schönbeck-Temesy
4. Pedicels longer than the calyx. Leaves rounded-elliptic. Flowers yellow or white

- without violet veins 5
- Pedicels shorter than the calyx. Leaves ovate to lanceolate. Flowers yellow with distinct violet veins 7
5. Pedicel in fruiting stage up to 7cm long, erect-patent to reflexed, contorted, plant prostrate 6. *H. senecionis* Willd.
- Pedicel long but never contorted. Plant caespitose or cushion-formed. 6
6. Flowers paniculate. Pedicels 1 to 3cm long. Stem 6 to 20cm
4. *H. malekianus* Parsa
- Flowers few, often solitary. Pedicels up to 5cm long. Plant very small (less than 10cm long) and cushion-formed
5. *H. leptocalyx* Stapf
7. Annual herb. Corolla slightly exceeding the calyx 13. *H. pusillus* L.
- Biennial or perennial. Corolla twice longer than the calyx 8
8. Leaves sessile, cauline leaves amplexicaul 7. *H. niger* L.
- Leaves petiolate, cauline leaves never amplexicaul 9
9. Leaves entire, plant minutely pubescent 9. *H. squarrosus* Griff.
- Leaves dentate to pinnately lobed. Plant densely pubescent 10
10. Stem single. Leaves oblong-ovate or lanceolate 10. *H. kurdicus* Bornm.

- Stem branched from the base. Leaves ovate 11
11. Plant covered with long arachnoid hairs 11. *H. arachnoides* Pojark.
- Plant pubescent 12
12. Petioles as long as or longer than the blade. Leaves cordate at the base
12. *H. turcomanaicus* Pojark.
- Petioles shorter than the blade. Leaves not cordate at the base
8. *H. reticulatus* L.

## NEW SYNONYMS

### *Hyoscyamus insanus* Stocks

syn.: *H. orthocarpus* Schönbeck-Temesy, Flora Iranica no. 100: 74 (1972); *H. nutans* Schönbeck-Temesy, Flora Iranica no. 100 : 75 (1972); *H. rosularis* Schönbeck-Temesy, Flora Iranica no. 100: 76 (1972).

*Hyoscyamus insanus* is morphologically variable. Schönbeck-Temesy (1972) described *H. orthocarpus*, *H. nutans*, and *H. rosularis* as new species. The new species and some of the characters used by Schönbeck-Temesy (l.c.) in key, descriptions and diagnoses are shown in Table 1. The species were studied in the type localities as well as much more herbarium specimens. Habit of the species

is either erect or ascending. Rosette leaves

Table 1. Differences of *Hyoscyamus insanus* and its affinities based on key, descriptions and diagnoses in Flora Iranica (Schönbck-Temesy 1972).

<i>H. insanus</i>	<i>H. orthocarpus</i>	<i>H. nutans</i>	<i>H. rosularis</i>
Stem procumbens or ascendens.	Stem erect or ascendens.	Stem lightly ascendens.	Stem erect or ascendens.
Leaves cordate, rotundate, truncate or cuneate at base.	Leaves cuneate at base.	Leaves cuneate at base.	Leaves cuneate at base.
Plant glutinose-tomentose or tomentose-villose.	Plant pubescent, hairy.	Plant tomentose-villose	Plant tomentose, pilose.
Lower leaves not rosulate.	Lower leaves not rosulate.	Lower leaves not rosulate.	Lower leaves rosulate.
Branch of inflorescence erect, spread or curved-ascendens.	Branch of inflorescence strict to erect.	Branch of inflorescence curved.	—
Capsule 9-12 mm long.	Capsule 8-10 mm long.	Capsule 7.5-9 mm long.	Capsule 5 mm long.

and nodding flowers appear in the beginning of growth, but later stem leaves appear and cymes become erect. Therefore, due to the changes of characters in ages and continuous variation of them, the new species described by Schönbeck-Temesy are designated as the synonymy of *H. insanus*.

***H. reticulatus* L.**

syn.: *H. leucanthera* Bornm. & Gauba,

Feddes Repert. 41: 329(1937).

***H. kurdicus* Bornm.**

syn.: *H. kotschyanus* sensu flora of Iran non Pojark.; *H. pojarkovae* Schönbeck-Temesy Fl. Iranica no. 100: 56(1972).

**REFERENCE**

Schönbeck-Temesy, E. 1972: *Hyoscyamus* in K. H. Rechinger Flora Iranica 100: 49-79. -Graz.