

## *Astragalus hamzaoglui* (Fabaceae), a new species from the east Black Sea region, Turkey

Osman Ketenoglu<sup>1</sup> & Yusuf Menemen<sup>2</sup>

<sup>1)</sup> Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey

<sup>2)</sup> Kirikkale University, Faculty of Science and Literature, Biology Department, Kirikkale, Turkey

Received 5 Nov. 2001, revised version received 27 Mar. 2002, accepted 27 Mar. 2002

Ketenoglu, O. & Menemen, Y. 2003: *Astragalus hamzaoglui* (Fabaceae), a new species from the east Black Sea region, Turkey. — *Ann. Bot. Fennici* 40: 59–62.

*Astragalus hamzaoglui* O. Ketenoglu & Y. Menemen (Fabaceae), a new species from Turkey is described and illustrated. It belongs to section *Hypoglottioidei* DC. and resembles *A. viciifolius* DC. and *A. viridissimus* Freyn & Sint., from which it differs in the habit, indumentum of stem and leaf, and floral features.

Key words: *Astragalus hamzaoglui*, Fabaceae, new species, taxonomy

### Introduction

On a botanical trip to the east Black Sea region, some interesting *Astragalus* specimens were collected from the Zigana Pass (Trabzon, Turkey). These specimens have been checked in the herbaria of ANK, GAZI and ADO, and compared to Chamberlain and Matthews (1970), Aytac (2000), Tutin (1968), Townsend and Guest (1974), and Gontcharov *et al.* (1946). The specimens represent a species new to science.

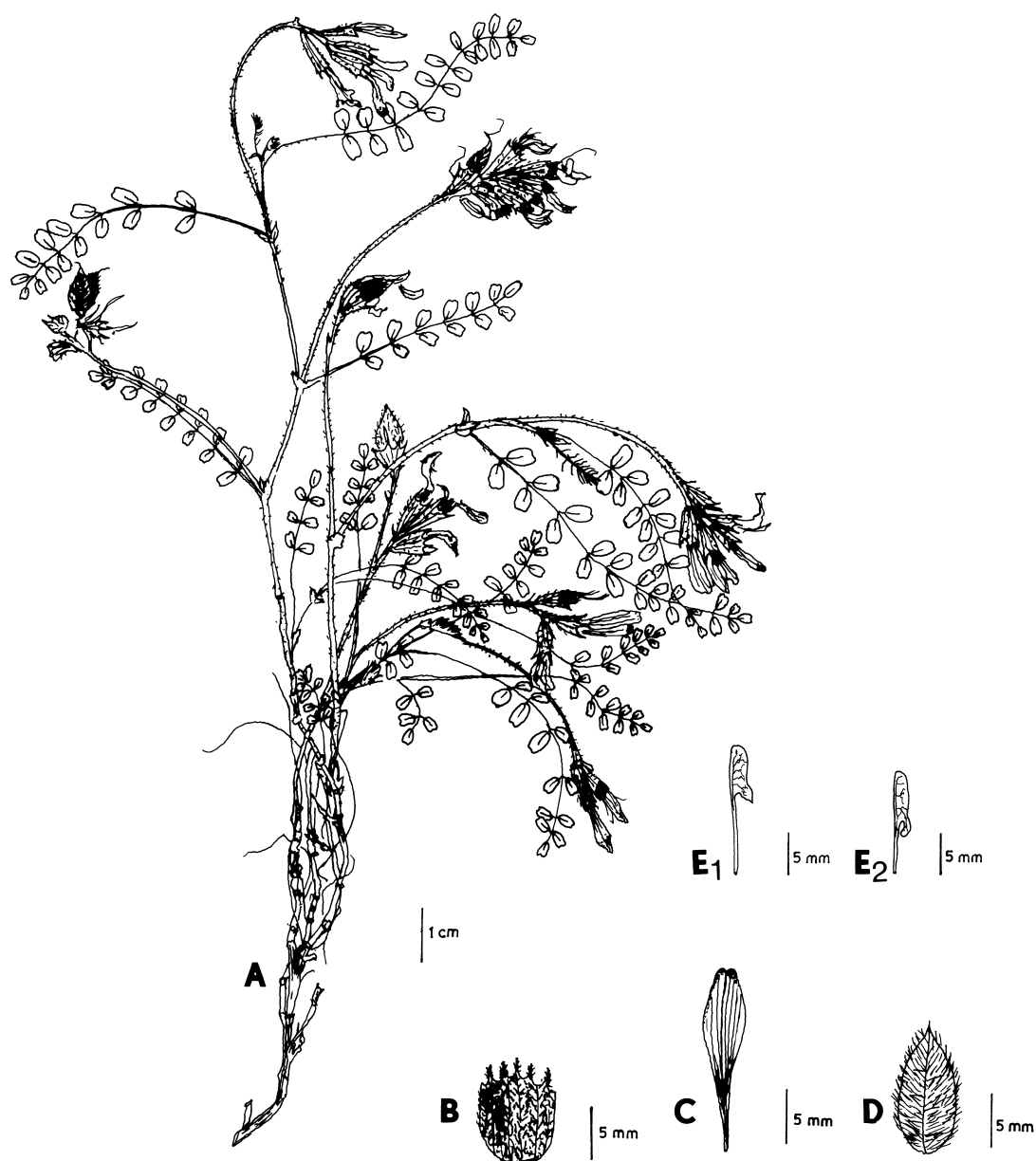
***Astragalus hamzaoglui* O. Ketenoglu & Y. Menemen, *sp. nova* (Figs. 1 and 2)**

*Affinis* *A. viridissimus* et *A. viciifolius* sed habitu ascenti; indumento effuso; pedunculo 4–8 cm longo; ala 15–16 mm longa; lamina triangulari et acuta basi; carina 14–15 mm longa differt.

TYPE: Turkey. A7 Trabzon, Trabzon-Gumushane arasi, 51 km, Zigana Dagi kuzey yamaçlari, 1500 m, 20.VI.2001 Y.

Menemen & E. Hamzaoglu, Y. Menemen 96 (holotype ADO, isotype ANK).

Perennial, 17–25 cm long, much branched; stems ascending, vested with sparsely spreading, long white and black hairs. Leaves 4–8 cm long, oblong, imparipinnate, rachis with sparsely spreading, long white and black hairs; leaflets 3–7 mm long, oblong-elliptic, apex obtuse or retuse, upper surface with sparsely adpressed, long white hairs, lower surface ± densely covered by adpressed, long white hairs, 7–13-paired (leaflets 15–27 in number); stipules 3–5 mm long, triangular-lanceolate, joined at base, ± densely covered by spreading, long white and black hairs especially at apex and margins. Peduncles 4–8 cm long, ± densely covered by spreading, long white and black hairs, mostly shorter than leaves. Inflorescence a subcapitate, 4–8-flowered spike. Bracts ca. 3 mm long, linear-lanceolate, with slightly spreading, long white and black hairs. Calyx 7–9 mm long, cylindrical, ± densely covered by spreading, long black hairy and



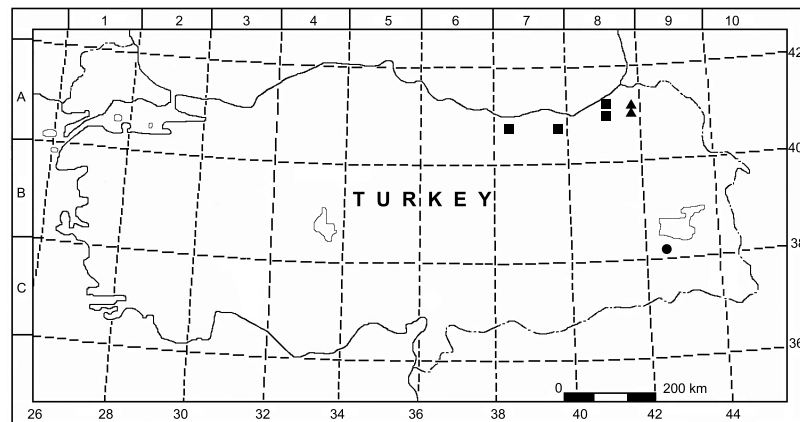
**Fig. 1.** *Astragalus hamzaoglu* (from the holotype). — **A:** Habit. — **B:** Calyx. — **C:** Standard. — **D:** Fruit. — **E<sub>1</sub>:** Wing. — **E<sub>2</sub>:** Wing of *A. viciifolius* and *A. viridissimus*; both are of the same size and shape.

slightly spreading, long white hairs; calyx teeth ca. 2 mm long. Corolla violet when fresh (brownish when dry). Standard 17–20 mm long, attenuate below; lamina 13–15 mm long, oblanceolate, bilobed at apex; claw 7–8 mm long. Wings 15–16 mm long; lamina 6–8 mm long, oblong, triangular and acute at base, claw 8–9 mm long.

Keel 14–15 mm long; lamina 5–6 mm long; claw 8–9 mm long. Pod 12–14 × 4–6 mm, bilocular, ovoid, densely covered by spreading, long white hairs; beak ca. 2 mm long.

ADDITIONAL SPECIMENS EXAMINED (paratypes). **Turkey.** A7 Giresun, Kodana, 24.VI.1977 Y. Akman 6794 (ANK);

**Fig. 2.** Distribution of *Astragalus hamzaoglui* (■), *A. viciifolius* (●) and *A. viridissimus* (▲) in Turkey.



A8 Rize, Çamlıhemsin, Çat-Elevit arası, 1200–1500 m, 24.VI.1980 *A. Güner* 2450 (ANK); A8 Rize, Çamlıhemsin, Ortayayla-Hisarçık koyleri, 1600–2000 m, 6.VII.1981 *A. Güner* 4003 (ANK).

ETYMOLOGY. The species is named after the Turkish botanist Dr. Ergin Hamzaoğlu.

HABITAT AND PHENOLOGY. Wet rocky slopes and open forests. Flowering and fruiting in June–August.

DISTRIBUTION. Endemic to Turkey, Euro–Siberian element.

*Astragalus hamzaoglui* closely resembles *A. viciifolius* DC. and *A. viridissimus* Freyn & Sint. It differs from both in the habit, indumentum of stem and leaf, and floral features (see Table 1).

REPRESENTATIVE SPECIMENS EXAMINED. *Astragalus viciifolius*: **Turkey**. B9 Bitlis, Bashan Koyu, ca. 1800–1900 m, 1983 *N. Adigüzel* 7550 (ANK). — *Astragalus viridissimus*: **Turkey**. A8 Artvin, Murgul ustu, Tiryal Dagi, 2300 m, 1957 *Davis & Hedge*, *Davis* 29940 (ANK); A8 Artvin, Goktas, Tiryal (Alaca) Dagi, Kurudere, 2570 m, 1978 *A. Duzenli* 972 (ANK).

**Table 1.** Diagnostic characters of *Astragalus hamzaoglui* and the two morphologically closest species.

| Characters | <i>A. hamzaoglui</i>                                                                                                   | <i>A. viciifolius</i>                                                 | <i>A. viridissimus</i>                                                               |
|------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Stems      | ascending, 17–25 cm tall, with spreading, long white and black hairs                                                   | prostrate, 5–10 cm tall, with adpressed short white hairs             | prostrate, 5–15 cm tall, glabrous or with adpressed short white hairs                |
| Leaves     | 4–8 cm long                                                                                                            | ca. 3 cm long                                                         | 2–3.5 cm long                                                                        |
| Rachis     | with spreading, long white and black hairs                                                                             | with adpressed short white hairs                                      | glabrous or with adpressed short white hairs                                         |
| Leaflets   | 7–13 paired, upper surface with sparsely adpressed, long white hairs, lower with ± densely adpressed, long white hairs | 7–11 paired, both surfaces with short, adpressed white hairs          | 4–7 paired, upper surface glabrous, lower with sparsely adpressed, short white hairs |
| Peduncle   | 4–8 cm long, with spreading, long hairs                                                                                | 2–3 cm long, with adpressed, short hairs                              | 3–5 cm long, with adpressed, short hairs                                             |
| Standard   | bilobed, lamina 13–15 mm long, claw 7–8 mm long                                                                        | obtusely or emarginate, lamina 11–12 mm long, claw 5–6 mm long        | bilobed, lamina 12–13 mm long, claw 5–6 mm long                                      |
| Wings      | 15–16 mm long, lamina triangular and acute at base, claw 8–9 mm long                                                   | 12–13 mm long, lamina auriculate and obtuse at base, claw 5–6 mm long | 13–14 mm long, lamina auriculate and obtuse at base, with claw 4–6 mm long           |
| Keel       | 14–15 mm long, claw 8–9 mm long                                                                                        | 11–12 mm long, claw 5–6 mm long                                       | 11–12 mm long, claw 5–6 mm long                                                      |

## Acknowledgements

We thank the Curators of the Herbaria Ankara University (ANK) and Gazi University (GAZI), for the opportunity to study material of *Astragalus* and F.T. Yağız for the drawing of *A. hamzaoglui*. We are indebted to DPT (Devlet Planlama Teskilati, Project no: 2001 K 120 850) for the financial support.

## References

- Aytaç, Z. 2000: *Astragalus* L. — In: Guner, A., Ozhatay, N., Ekim, T. & Baser, K. H. C. (eds.), *Flora of Turkey and the East Aegean Islands* 11: 79–88. Edinburgh Univ. Press, Edinburgh.
- Chamberlain, D. F. & Matthews, V. A. 1970: *Astragalus* L. — In: Davis, P. H. (ed.), *Flora of Turkey and the East Aegean Islands* 3: 49–254. Edinburgh Univ. Press, Edinburgh.
- Gontcharov, N. T., Borissova, A. G., Gorskova, S. G., Попов, М. Г. & Vasilchenko, I. T. [Гончаров, Н. Т., Бориссова, А. Г., Горскова, С. Г., Попов, М. Г. & Василченко, И. Т.] 1946: *Astragalus* L. — In: Коморов, В. Л. & Shishkin, B. K. [Коморов, В. Л. & Шишкин, Б. К.] (eds.), [*Flora SSSR* 12]: 1–918. Moskva–Leningrad.
- Townsend C. C. & Guest, E. 1974: *Astragalus* L. — In: Townsend, C. C. & Guest, E. (eds), *Flora of Iraq* 3: 231–442. Min. Agric. Agr. Reform Rep. Iraq, Baghdad.
- Tutin, T. G. 1968: *Astragalus* L. — In: Tutin T. G., Heywood V. H, Burges N. A., Moore D. M., Valentine, D. H., Walters, S. M. & Webb, B. A. (eds.), *Flora Europaea* 2: 108–124. Cambridge Univ. Press, Cambridge.