

SORBUS TILIAEFOLIA (ROSACEAE), A NEW SPECIES FROM IRAN

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Zare., H., Amini, T. and Assadi, M.. 2004. 10 10: *Sorbus tiliaefolia* (Rosaceae), a new species from Iran. -Iran. Journ. Bot. 10 (2): 147-151. Tehran.

Sorbus tiliaefolia is described as a new species from N. Iran. It is well characterized by the following characters. Leaves obliquely cordate, not lobed, leathery, pubescent in lower surface and as long as broad. Branches and corymbs are permanently pilose, fruits elliptic, retuse at the apex with deciduous sepals. The new species is a relative of *Sorbus torminalis*.

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Key words: *Sorbus tiliaefolia*, new species, Iran.

گونه جدید بارانک (*Sorbus tiliaefolia*) از شمال ایران

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گونه *Sorbus tiliaefolia* به عنوان گونه جدیدی از شمال ایران نامگذاری و شرح داده می‌شود. این گونه به آسانی با داشتن برگهای قلبی نامتقارن، بدون لب مشخص و یا فاقد لبهای شانهای، همچنین چرمی بودن، وجود کرکهای پراکنده در سطح زیر برگها و اندازه تقریباً برابر طول و عرض برگها، کم و بیش کرکدار بودن دائمی شاخه‌های یکساله و گل آذینها، میوه کاملاً بیضی شکل، فرورفته بودن نوک آن و ریزان بودن کاسبرگها در طول رسیدن میوه‌ها تمیز داده می‌شود. گونه مذکور با گونه *Sorbus torminalis* قرابت نزدیکی دارد و بنابراین با آن مقایسه می‌شود.

Introduction

In the course of 4 years of research on the flora of Dodangeh rocky mountains in Boola district, S. Sari over an area of ca. 20 km², 230 species were collected and named. One of the species of *Sorbus* seemed to be interesting and different from the other known species in the North of Iran, i.e. *Sorbus torminalis* (L.) Crantz. *S. graeca* (Spach) Loddiges ex Schauer, *S. aucuparia* L. and *S. persica* Hedl. (Khatamsaz 1992). Further studies revealed that the plant is a new species which is described here.

***Sorbus tiliaefolia* Zare, Amini & Assadi, sp. nov.**

Arbor usque ad 15 m alta; rami plus minusve villosi, hornotoni olivacei, vetustiores brunnei. Folia coriacea, alterna; petioli 1.5 – 5 cm longi, pubescenti; laminae 5-10 x 4-8 cm, cordatae, ad apicem rami fertilis ovatae, margine crenato-serratae, supra glabrae et atrovirides, subtus sparce pubescentes, pallidior, apice acuminatae vel apiculatae, ad bases obliquae vel auriculatae. Inflorescentiae terminales, corymbosae, densae, multiflorae; pedunculi et pediceli pubescenti. Calyx triangularis, pubescens, caducus. Petala ca. 4-6 mm longa. Styli 2. Fructus longe-ellipticus vel pyriformis, 12-15 x 8-10 mm, ad bases obliquus, apice retusus. Semen obovatum, multiangulare, 4-7 mm longum.

Typus. Iran, Mazandaran: 65 km S. Sari, Dodangeh, Boola rocky forest, Pasht-Lat, 2200 – 2400 m, Zare & Amini 6552 (holotypus TARI); Dodangeh, Ashek, Gogely, 1850 – 2000 m, Zare & Amini 6560.

Tree up to 15 m high; branches plus minus villose, olive-green in current year, light brown in age. Leaves leathery, alternate; petioles 1.5-5 cm long, pubescent; blades 5-10 x 4-8 cm, cordate, ovate at the apex of fertile branches,

distinctly crenate-serrate at the margin, in upper surface glabrous and dark green, in lower surface with scattered hairs especially along nerves, acuminate or apiculate at the apex, obliquely cordate at the base (somewhat covering the petioles), cuneate at the end of branches. Inflorescence terminal, dense, many flowered, corymbiform, permanently but slightly hairy. Sepals triangular, pubescent and falling at fruit rippen. Petals ca. 4-6 mm long, orbicular obovate. Styles 2. Fruit elliptic or pear-form, oblique, never rounded, 15-10 mm long, retuse at the apex. Seeds ovate and multiangled, 4-7 mm long.

The new species is related to *S. torminalis* (L.) Crantz which is a well known species in N. Iran. In Flora Iranica (Schonbeck-Temesy 1969) more to *S. torminalis* another relative named *S. orientalis* Schonbeck-Temesy was described, the type specimen from N. Iran, N. of Chalus between Kinch and Dasht-e Nazir. The main difference between *S. torminalis* and *S. orientalis* was based on the leaf lobes and fruit size of the two species. Leaves deeply lobed and fruits up to 20 x 14 mm in *S. torminalis*, but leaves shortly lobed and fruits up to 12x17.5 mm in *S. orientalis* (fig. 2). Browicz (1982) and Khatamsaz (1992) included *S. orientalis* as a synonym of *S. torminalis*, mentioning that *S. orientalis* is only a variant of the other species.

The first two authors of this paper found some *Sorbus* specimens among a population of *S. torminalis* which looked quite different from normal *S. torminalis*. Further studies on the group based on herbarium specimens and also field studies in the type locality of *S. orientalis* confirmed that *S. orientalis* is a synonym of *S. torminalis*. The characters used to distinguish these two species varies even on a single tree. But the new species is quite different and a distinct species. Characters of the new species is compared with those of *S. torminalis* in table 1. Worth mentioning is that

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Fig. 1. *Sorbus tiliaefolia* (×0.73).

Table 1. Comparison of characters of *Sorbus torminalis* and *S. tiliaefolia*.

<i>Sorbus torminalis</i>	<i>S. tiliaefolia</i>
Young branches in living stage violet or purple.	Young branches in living stage olive-green to brown.
Leaves (5-) 16-18 cm long, 4-14 cm broad, 1.4-2 times as long as broad, not leathery, light to dark green, glabrous on the lower surface or rarely with scattered hairs on the nerves, distinctly lobed.	Leaves (5-)7-8 (-10) cm long, 4-8 cm broad, equaling or 1.2 as long as broad, distinctly leathery and thick, dark green so it gives a dark green appearance to the trees and characterize them from the distance, always hairy on the lower surface, but more frequent on the nerves, not distinctly lobed.
Leaf base cunneate, rarely cordate, somewhat oblique.	Leaf base always cordate, distinctly oblique, covering the petiol.
Petiol 2-5 cm long, glabrous or rarely with scattered hairs.	Petiol 1.5-3.5 cm long, always hairy.
Young branches glabrous.	Young branches with scattered hairs.
Peduncles and pedicels hairy in the beginning, later glabrous.	Peduncles and pedicels always hairy.
Sepals rarely hairy, usually persistent.	Sepals tomentose, falling at fruit maturity.
Fruits rounded to pear-shaped, not oblique, rounded at the apex.	Fruits elliptic to pear-shaped, oblique, retuse at the apex.

even if overlaps occur between some of the characters but based on the combination of characters both species are easily distinguishable.

Ecology of the new species

Sorbus tiliaefolia grows on southern slopes and ridges of high forests at an altitude 1800-2600 m above sea level. The soil is brown forest with well decayed humus. Parent material is calcareous, outcrops are very well observable. Following species occur together with *S. tiliaefolia*: *Carpinus orientalis*, *Quercus macranthera*, *Juniperus communis* subsp. *hemisphaerica*, *Acer platanoides*, *Viburnum lantana*, *Sorbus graeca*, *Sorbus aucuparia*.

Acknowledgment

We wish to thank Mr. E. Moradi the artist in the Central Herbarium of Iran (TARI) for drawing of the illustration.

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Fig. 2. Variation of leaf in *Sorbus torminalis* (×0.82)