

CERASUS PARADOXA (ROSACEAE), A NEW SPECIES FROM IRAN

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Cerasus paradoxa is described and illustrated as a new species endemic to Lorestan province, in the west of Iran. It is similar, and most closely related to *C. microcarpa* and *C. yazdiana*. The diagnostic morphological characteristics, as well as a full description, taxonomic status and figure of the new species are presented.

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Key words. Rosaceae, *Cerasus*, taxonomy new species, Iran.

Cerasus paradoxa از تیره Rosaceae، گونه جدید از ایران

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Cerasus paradoxa به عنوان گونه جدید و انحصاری از استان لرستان، واقع در غرب ایران، توصیف و شرح داده شده است، که به *C. microcarpa* و *C. yazdiana* شباهت و به احتمال بسیار زیاد خویشاوندی دارد. ویژگی های ریخت شناسی به همراه توصیف کامل، وضعیت رده بندی و تصویر شماتیک گونه جدید ارائه شده است.

Introduction

Cerasus Mill., with about 150 species, is a genus within the *Prunoideae* in the *Rosaceae*, and mostly distributed in temperate regions of the northern hemisphere. The main centers of diversity are in Asia, Europe and North America (Chaoluan et al. 2003), but many of them are cultivated for their edible fruit, some as ornamental trees or shrubs (Zohary 1972).

The last complete revision of *Cerasus* in Iran, considers 10 species, 3 subspecies and one variety (14 taxa) for this genus in Iran. Two of them are endemic, *C. chorassanica* and *C. microcarpa* subsp. *diffusa*. *Cerasus* species were classified into three sections: *Microcerasus*, *Cerasus* and *Mahaleb* (Khatamsaz 1992). Later, Mozaffarian (2002) described a new endemic taxon from Iran, *C. yazdiana*.

Based on the addition the number of species and taxa of *Cerasus* distributed in Iran is increased to 12 and 16, respectively.

Material and methods

During the floristic investigations in the west of Iran in 2009 and 2010, we found one unknown population of *Cerasus*, which clearly differed from the other species of this genus. After examining the morphological features, the relevant literature during identification (Pojarkova 1941, Meikle 1966, Browicz 1969, 192, Zohary 1972, Webb 1980, Khatamsaz 1992, Mozaffarian 2002) is checked. The specimens were also compared with relevant specimens in herbarium of TARI.

Results and discussion

Cerasus paradoxa Dehshiri & Mozaff., sp. nov. -Fig. 1

C. microcarpa et *C. yazdiana* affinis sed differt calycis juvenilibus conspicue rugosis adultis plus minusve verrucosis (nec laevis), staminibus 3-4-seriatis (nec 1-2-seriatis).

Table 1. Comparison of *Cerasus paradoxa* with *C. microcarpa* and *C. yazdiana*.

Characters	<i>C. microcarpa</i>	<i>C. yazdiana</i>	<i>C. paradoxa</i>
Pedicels	up to 20 mm long	up to 14 mm long	up to 3-4 mm long
Hypanthium	smooth, up to 6 mm long, ± nerved	smooth, up to 4 mm long, ± nerved	rugose, up to 8 mm long, prominently nerved
Stamens	1-2 series, ± unequal	1-2 series, ± unequal	3-4 series, prominently unequal
Style	glabrous	villous-hairy at the base	villous-hairy at the base

Erect shrub, 2 (-3) m high, with erect or more or less spreading branches; young shoots erect, thin, long, glabrous, grayish; older shoots dark gray to blackish-gray. Stipules of young shoots linear-subulate, dentate to glandular-dentate, shorter than petioles, 5-8.5 mm long, ± persistent, on short shoots shorter and plus minus inconspicuous. Petioles 3-7 mm long, ± glabrous. Leaves ± glabrous on both sides or loose appressed-hairy mainly on veins, young leaves appressed-hairy only beneath; leaves usually on short shoots in groups of 2-5, very variable by size and shape, (1.5-) 2.3-4.3 (-5.1) × (0.5-) 0.7-1.8 (-2.1) cm, 2-3.5 times as long as wide, often oblanceolate to obovate, rounded or acute apex, at the margins with regular or irregular, slightly acute teeth above at middle, frequently with rather broad cuneate base; leaves on long sterile shoots up to twice as long as leaves of short shoots and variable by size and shape, (3.2-) 3.5-5.7 (-6) × 1.5-2.7 (-3.4) cm, 1.7-2.6 times as long as wide, often narrowly elliptic to elliptic-rhomboid, rounded or slightly acute at the apex, margins sharply regular serrate, ± cuneate at base. Flowers often in cluster of 3-5 on short shoots, opening simultaneously with or slightly later than leaves; pedicels up to 3-4 mm long, glabrous; hypanthium tubular-cylindrical, rarely slightly inflated at base, glabrous on the outside, usually hairy slightly above base on the inside, prominently nerved, conspicuously rugosus to ± verrucosus, more or less reddish, up to 8 mm long, 2.9 mm wide, 3.3-3.4 times as long as sepals; sepals 2.5 × 1.1 mm, broadly triangular, densely appressed-hairy inside; petals pink to white, obovate, tapering to a short claw, 7.5-8.5 × 4-5 mm. Stamens 15-20 (-25), prominently unequal, 4-6 mm long, borne at different levels (3-4-series); filaments glabrous; anthers almost orbicular, about 0.5 mm wide. Ovary ovoid, 1-2.2 mm long, 0.8-1 mm wide, frequently villous-hairy only at apex; style up to 9 mm long, longer than filaments, densely villous-hairy in lower part; stigma capitate. Unripe drupe at first ovoid, at last elliptic, 8-10 mm long, 4-6 mm wide; ripe drupe subglobose, 8-10 mm diam., red, glabrous; endocarp ovoid, with acute apex, 7-9 mm long, 3-5 mm wide, smooth on both sides, with sparse network of shallow furrows confined to apex and vicinity of sutures. Seed

ovoid, compressed, about 6 mm long, 3 mm wide; testa yellow or more or less reddish, minutely verruculose.

Typus. W Iran. Lorestan province: c. 60 km SE Aligudarz, Durak fountain, 33°06'N, 49°33'E, alt. 2100 m, growing in the thicket, 5.5.2010, Dehshiri & Ahmadi, 95750 (holotypus TARI; isotypus IRAN). - Paratypus: W Iran. Lorestan province: c. 60 km SE Aligudarz, Durak fountain, 33°07'N, 49°34'E, alt. 1900-2000 m, growing in the thicket, 4.4.2009 Dehshiri & Ahmadi, 1312 (Islamic Azad University, Boroujerd branch).

Etymology. *paradoxa* (Gk): *paradoxos* unexpected, strange, marvelous. Young hypanthium is conspicuously rugose and stamens borne at 3-4 levels which is rare in the other species of *Cerasus*.

Distribution. *Cerasus paradoxa* is an endemic species known only from one population at the coppice of Durak fountain in Lorestan province (W Iran) where the species is very rare and occurs in few patches.

Habitat, ecology and phenology. *Cerasus paradoxa* grows in the thicket, between 1900 and 2100 m altitude. The new species is known from small populations at the Durak fountain. *Cerasus paradoxa* grows at the grove together with *Crataegus meyeri*, *Crataegus azarolus* subsp. *aronia* and *Berberis integerrima* etc. It flowers in April. It begins to bear fruit in May and finishes in July.

Taxonomic status. *Cerasus* is divided in several sections. In *Cerasus* section *Microcerasus* Spach there are shrubs; buds small, 1-2 mm long, and usually in group of three: lateral ones are flower bearing and central one is leaf bearing only, they are initially covered with a common scale. Stipules not deciduous, subulate. Flowers sessile or with short pedicel (up to 2 cm), usually 1 or 2 in leafless clusters. Hypanthium tubular or campanulate.

Species such as *C. microcarpa*, *C. yazdiana*, *C. turcomanica* and *C. paradoxa* differentiated from other species based on ± glabrous leaves (not tomentose). *C. yazdiana*, *C. turcomanica* and *C. paradoxa* differs from

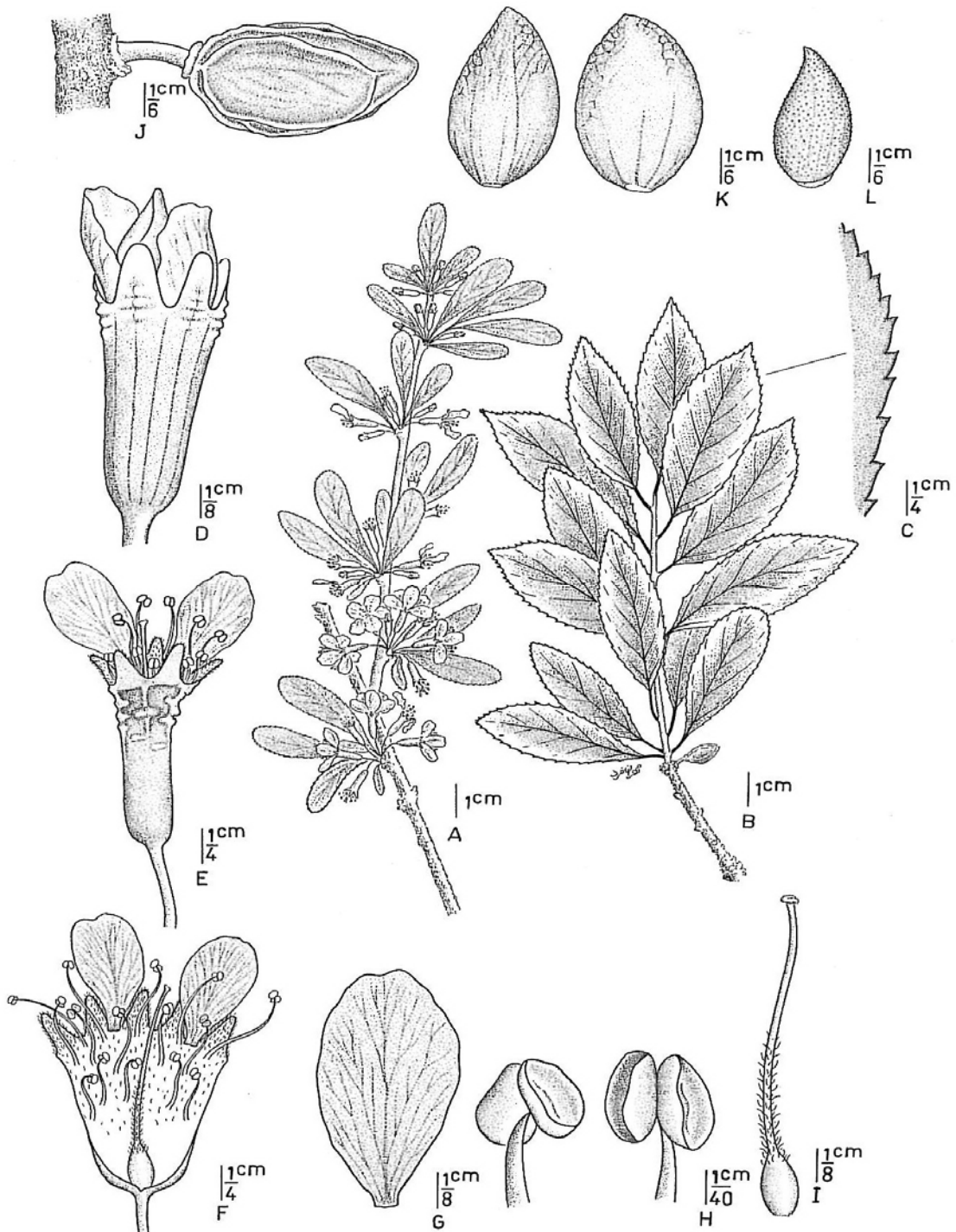


Fig. 1. *Cerasus paradoxa* (from the holotype). — A: Habit of flowering branch. — B: Branches with leaves and fruit. — C: Leaf margin. — D: Bud. — E: Flower. — F: Flower opened to show ovary and style, insertion of stamens, petals and sepals etc. — G: Petal. — H: Stamens. — I: Ovary and style. — J: Fruit. — K: Endocarp, side and end views. — L: Seed.

C. microcarpa in having villous-hairy style (not glabrous).

Cerasus paradoxa in conspicuously rugose on young hypanthium and stamens borne at 3–4 levels is distinguishable from *C. yazdiana* and *C. microcarpa*. All of the morphological differences between *C. paradoxa* with *C. microcarpa* and *C. yazdiana* are in Table 1.

Specimens seen. — *Cerasus yazdiana*: — Iran. Yazd province: Mehriz, Kuh-e Lakhese from Damgahan valleys, 2100–2400 m, 29.5.1996, Mozaffarian 77504, 79251 (holotypus TARI).

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