Two new species and two new records of *Apiaceae* from Iran

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Abstract

Angelica urumiensis Mozaff. and *Eryngium iranicum* Mozaff. are described as new species from Iran. *Aphanopleura trachysperma* Boiss. and *Pastinaca sativa* L. subsp. *urens* (Req. ex Gordon) Čelak are reported as new records from Iran.

Keywords: *Angelica*, *Aphanopleura*, *Eryngium*, Irano-Turanian area, *Pastinaca*, *Umbelliferae*

Introduction

Apiaceae (*Umbelliferae*) is one of the endemic-rich plant families of Iranian flora. Based on Flora Iranica 112 genera and 316 species were known from the Iranian territory (Hedge *et al.* 1987). The recent account of this family for Flora of Iran (in Persian) increased the number of genera to 121 and the number of species to 360 (Mozaffarian 2007). However, some more new species were found as new species or new records after publication of the account of this family. In this paper two new species belonging to genera *Angelica* and *Eryngium* are described for science and two species belonging to *Aphanopleura* and *Pastinaca* are added to the Iranian flora. The original specimens of reported species are preserved in the herbarium of Research Institute of Forests and Rangelands (TARI). This paper is dedicated to the 90th birthday of the Iranian eminent botanist Dr. Musa Iranshahr for his long term botanical activities and the memory of his colleague Late Dr. Esfandiar Esfandiari (1909–95).

Results

- New species

Angelica urumiensis Mozaff. sp. nov. (Fig. 1)

Type: W Azarbayejan prov., Urumieh, Targevar, Suluk, 37°29' N, 44°45' E, 1930 m, 12.8.2005, Mozaffarian 88325 (Holotype: TARI).

- Diagnosis

The new species seems to be related to *Angelica palustris* (Besser) Hoffm. but differs by higher stem, larger leaves and fruit and unequal umbel rays.

Perennial herb, 1–2.4 m tall, lactiferous. Stem at the base up to 4 cm diameter, yellowish-green, paniculately branched above. Lower leaves large, 100–130 × 40 cm including petiole; petiole long, 30–50 cm long, terete, at base shortly dilated; leaf blades ovate, ca. 80 × 40 cm, doubly ternate-pinnate, together with petiolule 24 × 12 cm, ternate, glabrous on both sides, broadly ovate, ± cartilaginous coarse serrate at margin, setose; terminal segments 16 × 12 cm, ovate in outline, trilobate, ± acuminate, at the base confluent-decurrent, coarsely serrate at margins; lower stem leaves decreasing towards the tip, upper ones conspicuously long sheathed; the most uppermost ones decreasing to sheath. Synflorescence large, paniculate; central umbel, with c. 10–20 rays; rays 4–20 cm long, unequal, glabrous; lateral umbelulles smaller. Bracteoles 8–15, filiformis. Flowers hermaphrodite; calyx teeth conspicuous, nearly broad, deflexed, persistent, young petals greenish-yellow; ovary and mature fruits glabrous; stylopodium pulviniform to ring-shaped; style divergent; ripe fruits ovate-orbicular, 16 × 14 mm; dorsal ribs narrowly winged, with broad marginal wing.

- Additional specimens examined: W Azarbayejan prov., Urumieh, Targevar, Suluk, 37°29' N, 44°45' E, 1930 m, 9.7.2005, *Mozaffarian 87484* (TARI).

The generic position and the affinity of the new species need further studies. The yellow flowers, conspicuous calyx teeth and presence of bracteole are indicating its affinity with *Xanthogalum purpurascense* Ave-Lall. (Rechinger 1987). However, presence of milky latex, yellow flowers, presence of bracteols and conspicuous calyx teeth are evidences of its position in *Archangelica* (Shishkin 1974, Tutin *et al.* 1987). Based on present knowledge it differs from all known species of *Xanthagalum* and *Angelica* s. l. known so far in the region (Chamberlain 1972, Rechinger 1987, Shishkin 1974). *Angelica palustris* (Besser) Hoffm. known from C and E Europe might be its close relative.

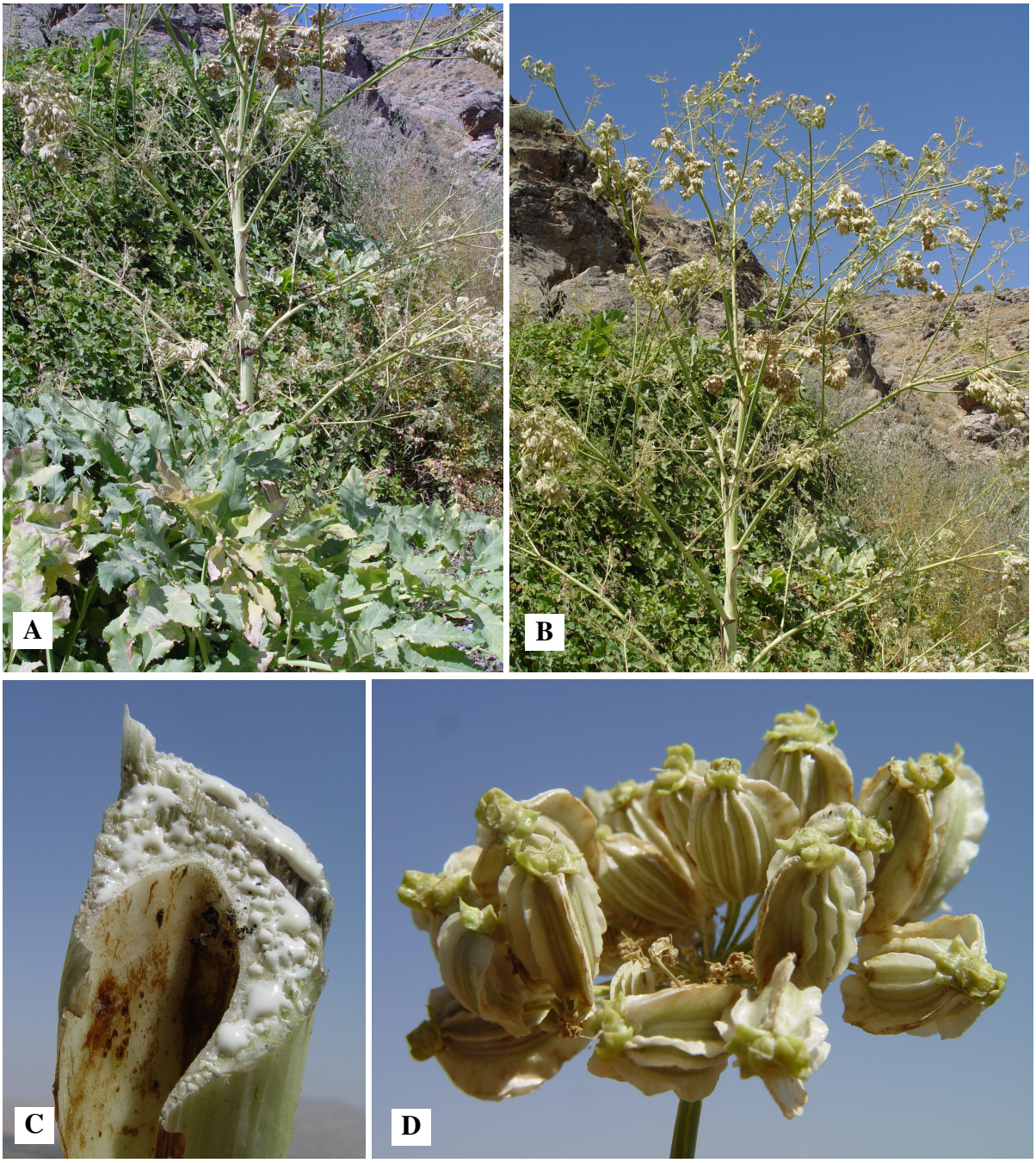

Fig. 1. *Angelica urumiensis*: A. Habit showing basal leaves, B. Habit showing upper inflorescence branches, C. Cross section of petiole showing exudation of milky latex, D. Close up of mature fruits showing winged ribs.

Eryngium iranicum Mozaff. sp. nov. (Fig. 2)

Type: Zanjan prov., ca 60 km from Zanjan to Mianeh, 1350 m, 31.7.1995, *Mozaffarian 74895* (Holotype: TARI).

- Diagnosis

Unique among Iranian species of *Eryngium* by non-spiny basal leaves. One possible relative is *E. wanaturi* which differs from *E. iranicum* by entire and linear leaves. *Eryngium bornmuelleri* in another possible relative which differs by large cordate or triangular-cordate basal leaves. *Eryngium planum* L. might be another relative to this species which differs by it by large and more or less herbaceous basal leaves, large paniculate inflorescence and large globose-ovoid capitula, linear, pungent, sparsely spinose towards base bracts. Finally, it differs from *Eryngium bungei* by entirely non-spiny leaves.

Perennial with straight main root; rootstock covered with fibrous remains of last year petioles. Stem erect, solitary, 25–55 cm high, striate, whitish below and bluish in upper part, paniculately branched above. Basal leaves persistent; blades entire, oblong or oblong-ovate, 6–12 × 3–5 cm, without spine; ± leathery, cartilaginous and crenate-dentate at margin, shallowly cordate-auriculate at base, finely reticulately-nerved, obtuse at apex, with long petiole; petioles 6–20 cm long, ca 1–2 times as long as lamina, broadened at base; median cauline leaves sessile, amplexicaule, dissected, dentate-spinose; upper and subtended branches leaves simple to trisect, ± spiny at margins, with distinct median nerve. Capitules depressed-globose, 8–12 cm wide. Bracts leafy, 4–5, spreading horizontally or divaricate, with conspicuous median nerve, lanceolate or oblong-lanceolate, 12–22 × 3–5 mm, acuminate, whithish-yellow or bluish, spinulose at the margins, distinctly nerved below, ca. two times longer than capitules. Bracteoles entire, as long as flowers, subulate, acuminate, ca. 6 mm long. Calyx teeth triangular, with thick midrib ending to a long spine up to 3 mm long; petals white, rather long, deflexed; styles twice as long as calyx teeth. Maricarps compressed dorsally, covered by whitish scales.

- Additional examined materials: Zanjan prov., 28 km from Kivi to Senjebid, 8 km from Senjebid to Piraghaj, 1650 m, 17.6.1980, *Mozaffarian 34286* (TARI); ca. 50 km from Zanjan to Mianeh, ca. 1000 m, 7.6.1990, A. *Ghahreman & V. Mozaffarian 9738* (THU); Zanjan to Mianeh, around Nikpay village, close to Edalu N. 36, 55, E. 48, 07, 1400 m, 12.6.2005, *Mozaffarian 87120* (TARI).

New records

Aphanopleura trachysperma Boiss. (Fig. 3)

W Azarbayejan prov.: Poldasht, between Gheighaj, Ghias and Gharaghaj 39°08’29” N, 45°01’12” E, 975 m, 16.6.2010, *Mozaffarian 94362* (TARI).

So far, only *Aphanopleura breviseta* (Boiss.) Heywood & Jury and *A. leptoclada* (Aitch. & Hemsl.) Lipsky were known to occur in Iran (Leute 1987). *A. trachysperma* is characterized by much longer and conspicuous involucral bracts. As this endemic south Transcaucasian species occurs close to Iranian border, its occurrence in Iran was already expected in Flora Iranica (Leute 1987).

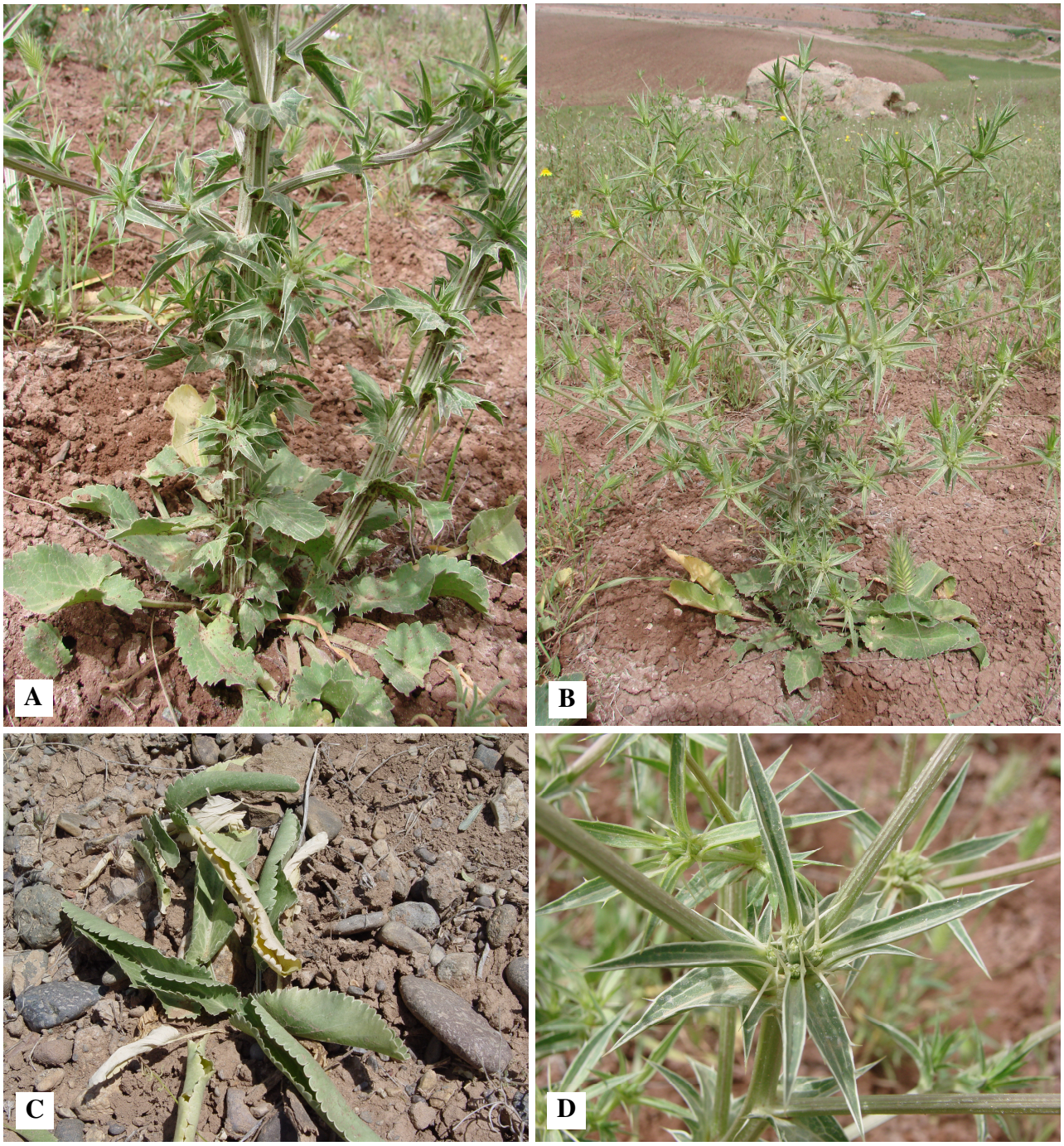

Fig. 2. *Eryngium iranicum*: A. Habit showing lower part of stem and basal leaves, B. Habit of plant showing inflorescence; C. Basal non-spiny leaves, D. Capitula and bracts.

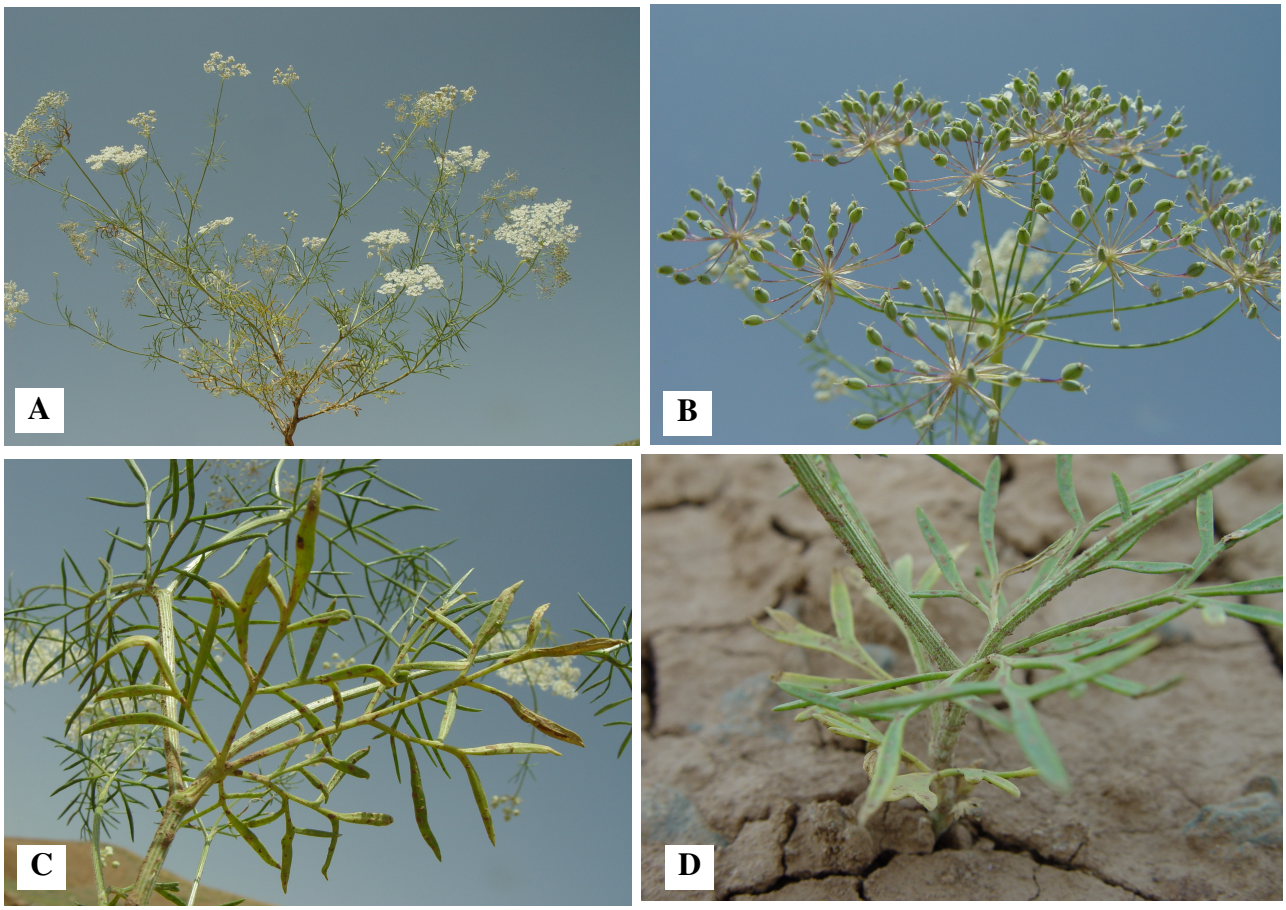

Fig. 3. *Aphanopleura trachysperma*: A. Habit in flower, B. Fruiting umbel, C. Basal and cauline leaves, D. Basal leaf.

Pastinaca sativa L. subsp. ***urens*** (Req. ex Gordon) Čelak E Azarbayejan prov.: Mianeh, Bozgoush Mont. Region, Gharibdust village, 47°19'11" N, 37°36'58" E, 1600 m, 21.6.2007, *Mozaffarian & Ramezani 93482* (TARI); ibid. 15.6.2010, *Mozaffarian & Ramezani 96528* (TARI).

So far, only *Pastiaca pimpinellifolia* M. Bieb. was known from Iran (Mozaffarian 2007). *P. sativa* subsp. *urens* differs from *P. pimpinellifolia* by lacking or only 1–2 caducous bracteoles and mostly axillary umbels. In *P. pimpinellifolia* the number of bracteoles is 2–7 and the umbels are terminal.

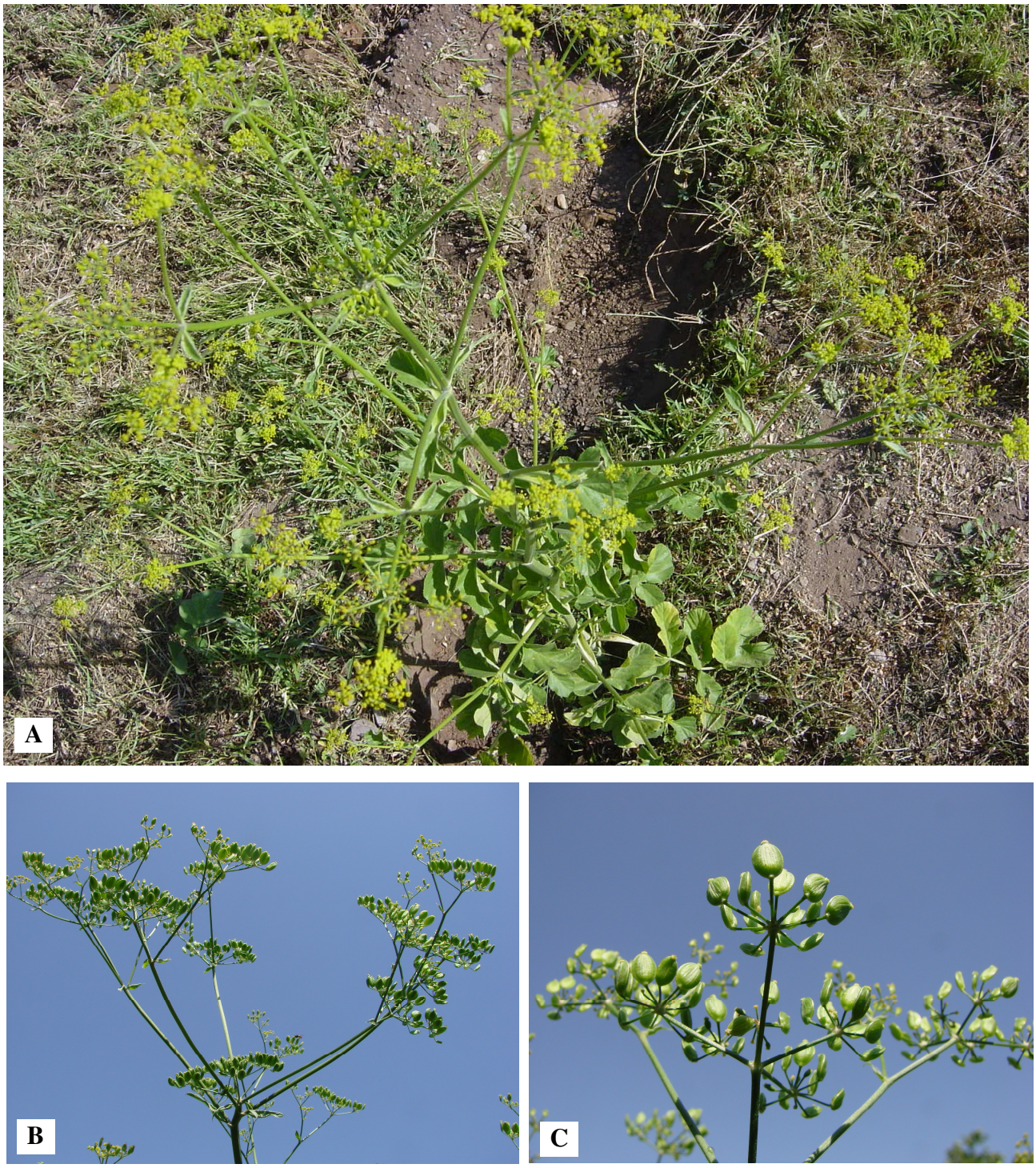

Fig. 4. *Pastinaca sativa* subsp. *urens*: A. Habit, B. Fruiting inflorescence, C. Close of fruiting inflorescence.

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