First report of subterranean development of an agaric fungus in Iran

In the framework of collection and identification of fungi of Zagros mountains (W and SW Iran), specimens of agaric fungi with subterranean development were collected from oak forests in Chaharmahal-v-Bakhtiar province. Native people of Dopolan and Rahimabad used hypogeous fruit-bodies of fungus as edible fungi. Excavation was done and fungal samples were found at 15–30 cm soil depth, near Oak roots. Because underground development and formation of basidiocarps, shape of pilei was abnormal.

Pileus 4.0–10 cm, dry, hemispherical to convex, because growth in soil not full expand, surface white to cream, with brown scales. Lamellae free, at first pink, at maturity brown to chocolate-brown. Stipe 30–60 × 25–40 mm, equal to tapering to enlarged base, white, annulate with great, membranous and sheath-like annulus. Context white, slightly change to brownish. Spores 4.5–6.5 × 4–5.5 µm, spherical to sub-spherical, smooth, spore print chocolate-brown. Basidia 20–30 × 5–10 µm, club shape. Cheilocystidia 20–35 × 7–15 µm and club shape (Fig. 1).

Specimen examined: Chaharmahal-v-Bakhtiar province, Ardal, Naghan, Dopolan, after Rahimabad, 2000 m, underground, near Quercus sp., 19.5.2010, Asef & Torabi (IRAN 14669 F).

Epigeous phase of this taxon has already been reported by Watling & Gregory (1977) and this is the first report of one agaric fungi with subterranean development of basidiocarps in Iran along with morphological description of A. bitorquis.
هستند که به تدریج به قهوه‌ای ناقوه‌های سفیدی تغییر می‌کنند. پایه‌گوشتی، قطور، سفت و به ابداع ۳۰-۴۰ میلی‌متری بوده و سفردیده می‌باشد. پایه‌گوشتی دارای یک‌اینگ یک‌پره به شکل حلقه‌ای غشاپی و به رنگ کلاه‌کمری می‌باشد. حلقه از نوع غلافی شکل یافته به ویژه دوبلریسته و شکل خاص (sheath-like) شکل‌های مختلف به فنگان یا دیگر. قهوه‌ای تخفیف‌داره، قهوه‌ای مختصری به قهوه‌ای دیده می‌شود. نسبت اسپور (spore print) به رنگ قهوه‌ای شکلاتی است.

بازی‌بی‌سپورها شکوی تا گروشی، صاف، به ابعاد ۴-۵/۵۰-۳/۱۵ میکرومتر و بازی‌بی‌سپورها به ابعاد ۲۰-۱۰ میکرومتر، گزری شکل و حامل چهار استریکها (cheilocystidia) به ابعاد ۲۰-۱۵×۱-۲۵ میکرومتر و گزری شکل دیده می‌شوند (شکل ۱).

نمونه بررسی شده: استان چهارمحال و بختیاری، اردل، ناغان، دوبانان. بعد از رحیمی‌آباد، ۲۰۰۰ متر، زیبر خاک در کنار Quercus sp. (IRAN 14669 F).

این گونه برای نخستین بار توسط واتلینگ و گرگوری در سال ۱۹۷۷ از ایران و از سطح خاک معروف شد و این نخستین گزارش از روسیه در زیر خاک قراری از گروه فاقد‌پیش‌های آگریک-کن در ایران به همراه توصیف مورفولوژیکی گونه‌ای می‌باشد. A. bitorquis
Amsinckia menziesii, first report as a weed species from Iran

Amsinckia menziesii (Tutin et al. 1972), first report as a weed species from Iran 

In a study of weed samples submitted for identification to "IRAN" herbarium, a specimen collected from barley fields of Alborz province was encountered, which had the following characteristics:

Annual, up to 60 cm long, single-stemmed, erect, hispid. Leaves alternate, sessile, without stipules, lanceolate to linear-linulate, with stiff hair. Inflorescence drepanium, without bracts. Pedicel very short, up to 1 mm long when the fruit is ripe. Sepal 4–5 mm long and 1 mm broad, with narrowly lanceolate dentate. Corolla cylindrical, 9.5 mm long and 6 mm broad, 5-lobed, 1.57 mm long, orange-yellow. Stamen 5, in whorl, yellow, 9.5 mm long and 6 mm wide. Style simple. Stigma 2-lobed. Glabrous, ovate or ovate-rectangular, 2 mm long (Fig. 1). Taking into account these characteristics and with a reference to Flora of Europe (Tutin et al. 1972), the specimen was determined as Amsinckia menziesii (Lehm.) Nelson & J.F. Macbr. (Boraginaceae), which is the first report of a species from the genus Amsinckia for Iran.

Specimen examined: Alborz province, Hashtgerd, Dangizak village, Apr. 2011, Minbashi (IRAN 56230).

Amsinckia menziesii is a widespread native of North America, extending from Alaska and Western Canada to Southern America and Mexico. It is a serious agricultural weed (DiTomaso & Healy 2007, Meadly 1986) and can decrease crop yield. It is a highly competitive plant and when transmitted from its natural habitat to other regions, it becomes highly aggressive and colonizing (Montalvo et al. 2010). Occurrence of this weed species have so far been reported from the United States, Canada, South Africa and Australia (Global Compendium of Weeds 2011).

The seed and foliage of this species are toxic to livestock in particular horses and cows (DiTomaso & Healy 2007).
References

Fig. 1. *Amsinckia menziesii*: A. Habit, B. Inflorescence, C. Corolla, D. Calyx & Style, E. Nut.