



New interpretation of the *Ranunculus cornutus*–*R. marginatus* complex (Ranunculaceae)

JOTHAM ZIFFER-BERGER & HAGAR V. LESCHNER

Hebrew University Herbarium, Givat Ram, Jerusalem 91094, Israel. E-mail: jotham.z@gmail.com

Abstract

We re-evaluated the morphological variation in the *Ranunculus cornutus*–*R. marginatus* complex (*Ranunculus* sect. *Echinella*, Ranunculaceae), with a special focus on the Levant. The occurrence of *R. marginatus* in the Levant is questioned and *R. scandicimus* should be treated as a variety of *R. cornutus*. Type material is discussed and descriptions of species are provided.

Introduction

The complex surrounding *Ranunculus cornutus* De Candolle (1818: 300) and *R. marginatus* d'Urville (1822: 318) consists of lightly pilose annual herbs bearing yellow flowers with reflexed sepals. Members of this complex can be recognized by their globular, small fruiting heads (0.5–1.5 cm in diameter) set on long pedicels, 4–8 times longer than the fruiting head. The achenes are complanate, beaked, and their surface is variably tuberculate to smooth. The species complex is widely distributed in southwestern Asia, North Africa and southern Europe (Davis 1959).

Two comprehensive taxonomic studies of *Ranunculus* interpret this complex differently. Davis (1959, 1965) in *Flora of Turkey*, uses both vegetative traits and achene morphology as diagnostic characters, whereas Zohary (1966) in *Flora Palaestina* uses achene morphology alone. This conflicting taxonomical interpretation has led to inconsistency in floristic listings and floras. A further cause for the taxonomical confusion is the lack of type material for some taxa and unclear morphological descriptions in the protologues. Additionally, the lack of critical comparison between compatriot specimens, which is essential for understanding phenotypic plasticity within taxa, has contributed to this taxonomical imbroglio.

Material and methods

We investigated herbarium specimens from the Hebrew University of Jerusalem (HUJ) and Aaron the Aaronsohn collection (AAR), which include over 200 specimens from the Middle East. Additionally we investigated material from the herbarium of Edinburgh (E), where the material used by Davis for the *Flora of Turkey* is deposited, largely representing the Middle East and Greece. We also studied material from Kew (K), Paris (P), Geneva (G), De Candolle's collection (G-DC), Florence (FI) and Missouri (MO).

In this review we seek to unify the taxonomy of this complex. Our taxonomic ranking is based on clear integrity of morphology and geographical ranges at species level, on geographically transitional morphology to describe varieties and on variation within local populations at the level of forma (Hamilton & Reichhard 1992). We review type material and designate lecto- or epitypes where appropriate.

Ranunculus marginatus* var. *trachycarpus (Fisch. & Mey.) Aznavour (1902: 297)

Basionym: *Ranunculus trachycarpus* Fischer & Meyer (1837: 46). Type:—AZERBAIJAN. ‘Talysch ad Lenkoran’, Meyer s.n. (LE, n.v.).

This variety differs from var. *marginatus* only by its fully tuberculate achenes that resemble the achenes of *R. cornutus* var. *scandicinus* (Fig. 5). Its distribution roughly overlaps with that of *R. m.* var. *marginatus*, but extends into southern Turkey and Cyprus. We could not study Meyer's type specimen, but we were able to see much of the material studied by Davis for *Flora of Turkey* at E.

Contrary to Zohary (1966), *Ranunculus marginatus* does not occur in Israel and the Levant. We believe that due to the difficulty of accessing the type specimen and resemblance of achenes, Zohary misapplied the name *R. marginatus*. All of the material from Israel identified by Zohary as *R. marginatus* is confirmed by us to belong to *R. cornutus* var. *scandicinus*. Herbarium material from Missouri Botanical Garden herbarium (MO) indicates that *Ranunculus marginatus* var. *trachycarpus* is naturalized in temperate and subtropical North America.

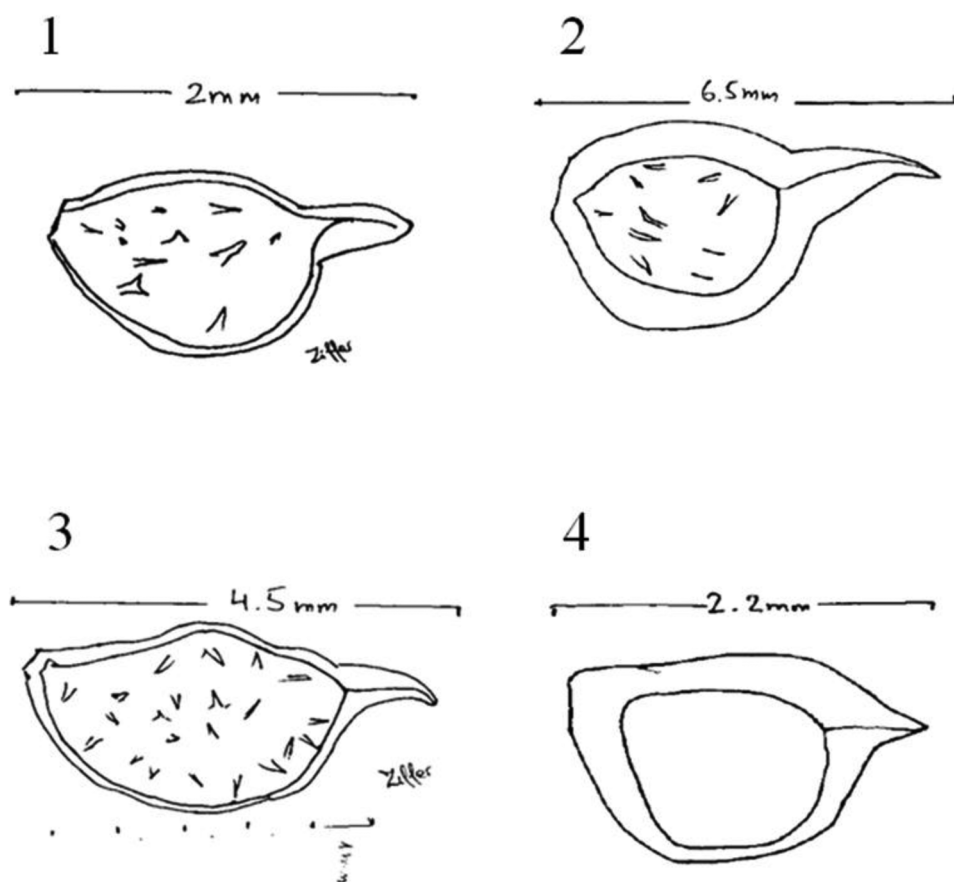


FIGURE 5. Schematic drawing of *Ranunculus* achenes, side view: 1) *R. marginatus* var. *trachycarpus* from Turkey; 2) *R. cornutus* var. *cornutus* from Syria 3) *R. cornutus* var. *scandicinus* from Israel 4) *R. cornutus* var. *leiocarpus* from Azerbaijan. Author's illustration.

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