

A NEW *BARBAREA* FROM SOUTHWEST ANATOLIA

KIT TAN &amp; Y. GEMICI\*

*Barbarea hedgeana* Kit Tan & Gemici (Cruciferae) is illustrated and described from southwest Anatolia. It is a small perennial marked by a distinct overall fruiting facies.

***Barbarea hedgeana* Kit Tan & Gemici, sp. nov. Fig. 1.**

Herba perennis parva; caudex  $\pm$  horizontalis, lignosus, reliquiis petiolaribus fibrosis vestitus. *Caulis florifer* erectus, unicus, simplex vel sparse ramosus, 7–14cm altus, glaber. *Folia basalia* longe petiolata, rosulam distinctam formantia; lamina simplex, ovata, c.7–10  $\times$  5–7mm, obtuse lobata vel dentata, canescenti-viridis, retrorse pilosa ad adpresse pubescens. *Folia caulina* sessilia, auriculis semi-amplexicaulibus; lamina 10–15mm, glabra vel subglabra, dimidio inferiore irregulariter pinnatisecto segmentis linearibus usque lanceolatis 5–6mm longis, superiore valde dentato. *Inflorescentia* racemosa, ebracteata, 3–6cm, 5–30-flora. *Pedicelli* ascendentes, fructiferis ad 8mm accrescentibus incrassatisque. *Petala* alba (saltem in sicco), 6.5–6.7  $\times$  1.5–1.7mm, sepalis longiora. *Filamenta* exappendiculata, alba, tenuia, c.3.5mm; antherae flavae, c.0.8mm. *Nectaria* duo, conspicua, mediana. *Ovarium* 6–8-ovulata, ovulis in quoque loculo bifariis; stigma  $\pm$  capitatum, parum bilobum. *Siliquae* erecto-patentes, compressae, ad maturitatem elliptico-lineares, 10–13  $\times$  1.5–1.7mm (stylo 3–4mm longo incluso), viridescentes, glabrae, valvis conspicue nervosis. *Semina* ovoidea, 1.3–1.5mm, rubro- usque atro-ferruginea, laevia, testa subtiliter reticulato-areolata; radícula accumbens. *Fl. Maio*.

Small perennial herb with  $\pm$  horizontal woody stock densely clothed with fibrous petiolar remains. *Flowering stem* erect, single, simple or sparingly branched, 7–14cm tall, glabrous. *Basal leaves* long-petiolate, forming a distinct rosette; lamina simple, ovate, c.7–10  $\times$  5–7mm, obtusely lobed or dentate, greyish-green, retrorsely pilose to adpressed-pubescent. *Cauline leaves* sessile, with semi-amplexicaul auricles; lamina 10–15mm, glabrous to subglabrous; lower half irregularly pinnatisect with linear to lanceolate, 5–6mm segments; upper half strongly dentate. *Inflorescence* racemose, ebracteate, 3–6cm, 5–30-flowered. *Pedicels* ascending, elongating to 8mm and thickened in fruit. *Petals* white (at least drying white), 6.5–6.7  $\times$  1.5–1.7mm, longer than sepals. *Filaments* without appendages, white, slender, c.3.5mm; anthers yellow, c.0.8mm. *Nectaries* 2, conspicuous, median. *Ovary* 6–8-ovulate; ovules in 2 rows in each loculus; stigma  $\pm$  capitate, slightly 2-lobed. *Siliquae* erect-spreading, compressed, elliptic-linear at maturity, 10–13  $\times$  1.5–1.7mm (including 3–4mm style), greenish, glabrous; valves conspicuously veined. *Seeds* ovoid, 1.3–1.5mm, reddish- to blackish-brown, smooth, testa finely reticulate-areolate; radicle accumbent. *Flowering May*.

Type: Turkey B2 Denizli: Çivril, Akdağ, dry stony limestone slopes, c.1900m, 24 v 1984, Y. Gemici 2690 (holo. EGE).

\*Ege University, Science Faculty, Biology Department, Izmir, Turkey

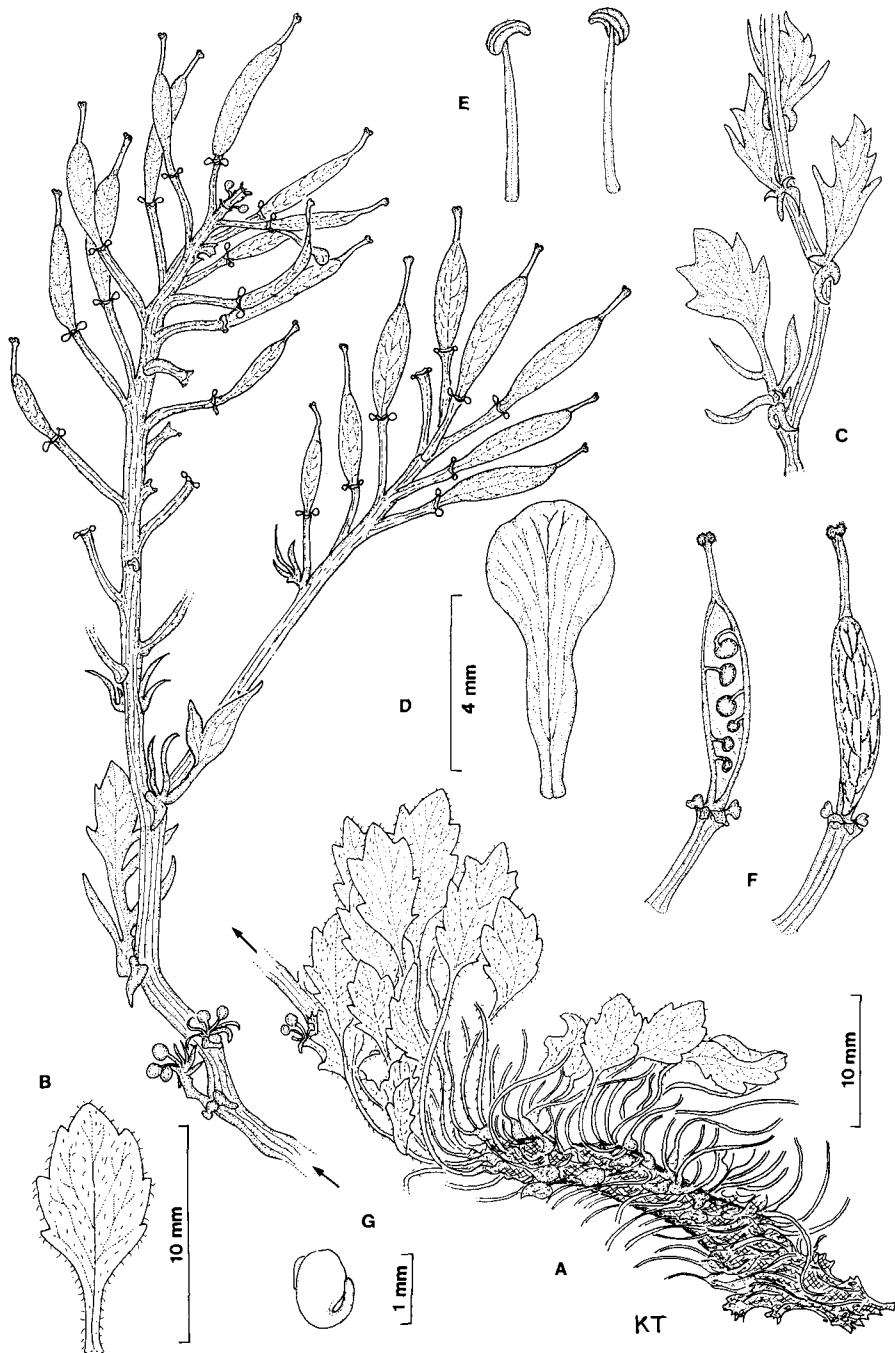


FIG. 1. A-G, *Barbarea hedgeana*: A, habit; B, basal leaf; C, cauline leaves; D, petal; E, stamens; F, siliquae; G, embryo. A & C to same scale; B & F, D & E and G on separate scales as shown.

In many Old World Floras where the genera *Barbarea* and *Rorippa* are treated, *Barbarea* is taxonomically distinguished as having seeds arranged in a single row in each loculus, and *Rorippa* by its seeds arranged in two rows per loculus. The seeds in *B. hedgeana* are arranged in two rows per loculus, thus resembling the condition described for the genus *Rorippa*. However, the siliquae valves are rather strongly veined and the style in fruit comparatively long. The overall fruiting facies is distinctive and not appropriate to a *Rorippa*. On the basis of the striate stem, toothed and irregularly pinnatisect cauline leaves with semi-amplexicaul auricles which are reminiscent of *Barbarea*, we decided to treat the new species as a *Barbarea*, regardless of its textbook or non-textbook position.

Out of curiosity we decided to look at the ovule arrangement in Turkish and European species of *Barbarea* and *Rorippa*. M. J. E. Coode & J. Cullen (*Flora of Turkey and the East Aegean Islands* 1: 431–433 [*Rorippa*] and 433–438 [*Barbarea*], 1965), P. W. Ball (*Flora Europaea* 1: 281–282 [*Barbarea*], 1964) and D. H. Valentine (*Flora Europaea* 1: 283–284 [*Rorippa*], 1964) had all distinguished the genera according to whether the seeds were arranged in one or two rows in each loculus. 150 specimens (85 from Turkey) representing 13 species of *Barbarea* were examined. We found that this ‘diagnostic’ character of seed arrangement, allegedly unique to each genus, breaks down completely as every *Barbarea* examined had seeds in a biseriate arrangement. To our knowledge, this fact concerning *Barbarea* has not been previously recorded and it is evident that the alleged difference in ovule arrangement does not hold in the two genera, nor should such a character be used in a generic key. The ovule arrangement in nine species of *Rorippa* from Turkey and Europe which were available for comparison is identical to that found in *Barbarea*. Al-Shehbaz & Rollins however (*J. Arn. Arb.* 69: 65–71, 1988), noted a uniseriate arrangement in *R. floridana* Al-Shehbaz & Rollins and *R. microphylla* (Boenn. ex Reichb.) Hylander, two species occurring in North America, one indigenous, the other naturalized.

*B. hedgeana*, an East Mediterranean element, has been collected only once. It is a rare species endemic to southwest Anatolia (Pisidia). The closest ally in Turkey is undoubtedly *B. minor* C. Koch for which three intergrading varieties have been described (*Flora of Turkey and the East Aegean Islands* 1: 438, 1965). *B. hedgeana* differs from *B. minor* in its acutely dentate-serrate basal leaves, pinnatisect cauline leaves, broader siliquae and white petals. Concerning the last character, the petals in the genus as a whole, are yellow but dry white. It is possible that *B. hedgeana* is really yellow-flowered; however, the petals were annotated as being white *in vivo* and also according to the memory of one of us (Y.G.).

The taxon is named in honour of Ian C. Hedge, of the Royal Botanic Garden Edinburgh who has made southwest Asian Cruciferae his special *forte* over many years. We are grateful to Dr Robert Mill for his help with the Latin translation and Gert Vold (Seed Bank, Copenhagen Botanic Garden) for his assistance in dissecting all the *Barbarea* and *Rorippa* fruits.