

**A NOTE ON THE OCCURRENCE OF *CUCUMIS SATIVUS* L. FORMA *HARDWICKII* (ROYLE) W.J. DE WILDE & DUYFJES (CUCURBITACEAE) IN PENINSULAR INDIA**

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The genus *Cucumis* L. (Cucurbitaceae) is distributed in the tropical region with about 52 species (Mabberley 2008). This genus is of horticultural importance as it has many cultivated species with a large diversity of wild germplasm. There are six species in India (Chakravarty 1982), of which *Cucumis sativus* L. (Cucumber) is cultivated widely for its edible fruits. Additionally, one wild variant of *Cucumis sativus* is also found to grow in wild, which was collected during our routine field work in Tikona Fort area of Pune District (Image 1). This wild form was compared with cultivated form of *Cucumis sativus* L. for morphological characters.

The differences between these wild growing plants and cultivated ones are quite significant and are given in Table 1. To understand the distribution of this wild form, specimens deposited in Herbarium of Botanical Survey of India, Western Regional Centre (BSI), Pune were scrutinized. The scrutiny revealed that this wild

form of *Cucumis sativus* L. occurs widely throughout peninsular India.

In many Indian floras, this wild population of cucumber is treated only under *Cucumis sativus* L. But from the above characteristics it appears to be unjustified to keep the wild as well as cultivated populations under a single species.

This issue has been discussed by various authors (Duthie 1903; Kirkbride 1993; Jeffrey 2001; de Wilde & Duyfjes 2010). Most of them have treated the cultivated form as *Cucumis sativus* L. var. *sativus* and the wild occurring form as *Cucumis sativus* L. var. *hardwickii* (Royle) Alef. The latter was originally described as a distinct species by Royle (1835) as *C. hardwickii* Royle. Duthie (1903) considered *Cucumis sativus* var. *hardwickii* (Royle) Alef. just as the wild form of the cultivated cucumber, as both have all essential characteristics in common. De Candolle considered *C. hardwickii* Royle as a weedy form of *C. sativus* that escaped from cultivation, rather than assuming it as the ancestor of this species (de Wilde & Duyfjes 2010). Kirkbride (1993), while describing *Cucumis sativus* L., added a note for this distinct form stating “smaller, more delicate plants with bitter fruits have traditionally been identified as *C. sativus* var. *hardwickii*”. Jeffrey (2001), in support of Kirkbride (1993), stated that typical members of the var. *hardwickii* can be easily identified but that no morphological characteristics clearly separate it.

It is quite clear from the above discussion, that the taxa occurring in the wild should be treated separately from the cultivated one. Some authors have treated it



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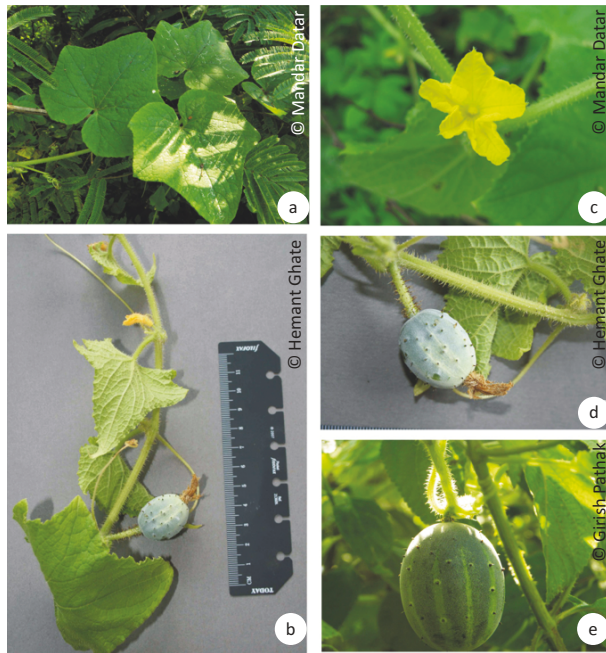
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**Image 1.** *Cucumis sativus* L. forma *hardwickii* (Royle) W.J. De Wilde & Duyfjes

a - leaves; b - twing with flower and fruits; c - flower; d - immature fruit; e - mature fruit.

as *C. sativus* forma *hardwickii* (de Wilde & Duyfjes 2010) while some have treated it as a variety, i.g., *C. sativus* var. *hardwickii*. Kirkbride (1993) in his monograph placed four species and one variety of *Cucumis* from South East Asia in the synonymy of *C. sativus*, viz. *C. hardwickii* Royle, *C. muricatus* Willd., *C. rumphii* Hassk., *C. setosus* Cogn. and *C. sativus* L. var. *sikkimensis* Hook. f. This synonymy was partly accepted by de Wilde & Duyfjes (2007) except for *C. hardwickii* which they retained as the separate wild variety. But recent detailed studies by the same authors (de Wilde & Duyfjes 2010) have resulted in the wild form being treated as *C. sativus* forma *hardwickii* (Royle) W.J. de Wilde & Duyfjes and not as a separate variety.

This wild form has not been reported in earlier major floras on peninsular India as the authors treated it only in *Cucumis sativus* L. (Matthew 1983; Saldanha 1984; Sharma et al. 1984; Rao 1985; Pullaiah 1997; Almeida, 1998; Rao 2001). But Jeffrey (2001) described the distribution of this forma *hardwickii* from peninsular India to Sri Lanka. In addition to wild and cultivated forms, there are some forms found as an escape from cultivation. We, therefore, suggest that these escaped forms along with cultivated ones need to be treated under *Cucumis sativus* L. proper while the wild population occurring in peninsular India is to be treated as *C. sativus* forma *hardwickii* (Royle) W.J. de Wilde & Duyfjes (Image

**Table 1.** Differences between cultivated and wild forms of *Cucumis sativus* L.

Character	Cultivated form of <i>Cucumis sativus</i>	Wild form of <i>Cucumis sativus</i>
Inflorescence	Many flowered	1–3 flowered
Fruiting season	Almost throughout the year	September to January. On many occasions fruits are seen even on dried plants
Fruit shape	Ellipsoid or cylindrical	Ovoid to slightly ellipsoid
Fruit color	Yellowish-green without stripes	Green with white stripes
Fruit surface	Less scabrid, more or less smooth	Scabrid, with deciduous spine like structures on the surface
Fruit Taste	Neutral, not bitter	Bitter
Seed length	7–11 mm long	6–7 mm long

1) and not under *C. sativus*. A good description and illustration of *C. sativus* forma *hardwickii* (Royle) W.J. de Wilde & Duyfjes are provided by the authors (de Wilde & Duyfjes 2010).

**Specimens studied:** Dadra-Nagar Haveli: 127095A (BSI), 14.xi.1970, Sindhoni Forest, Nagar Haveli, coll. M. Y. Ansari.

Karnataka: 73565(BSI), 04.ix.1961, Katedevargudi, Mysore District, coll. R.S. Rao.

Kerala: 62279 (BSI), 20.vi.1960, Hereford Estate, coll. K.C. Kanodia.

Maharashtra: 101065 (BSI), 28.x.1964, Ambavane, District Pune, coll. B.V. Reddi; 111329 (BSI), 12.ix.1967, Peint, District Nasik, John Cherian; 27429 & 27430 (AHMA) (Images 2 & 3), 20.ix.2011, Tikona Fort, Taluka Maval, District Pune, coll. M.N. Datar; 99196 (BSI), 26.ix.1964, near Valvan Dam, District Pune, coll. B. V. Reddi.

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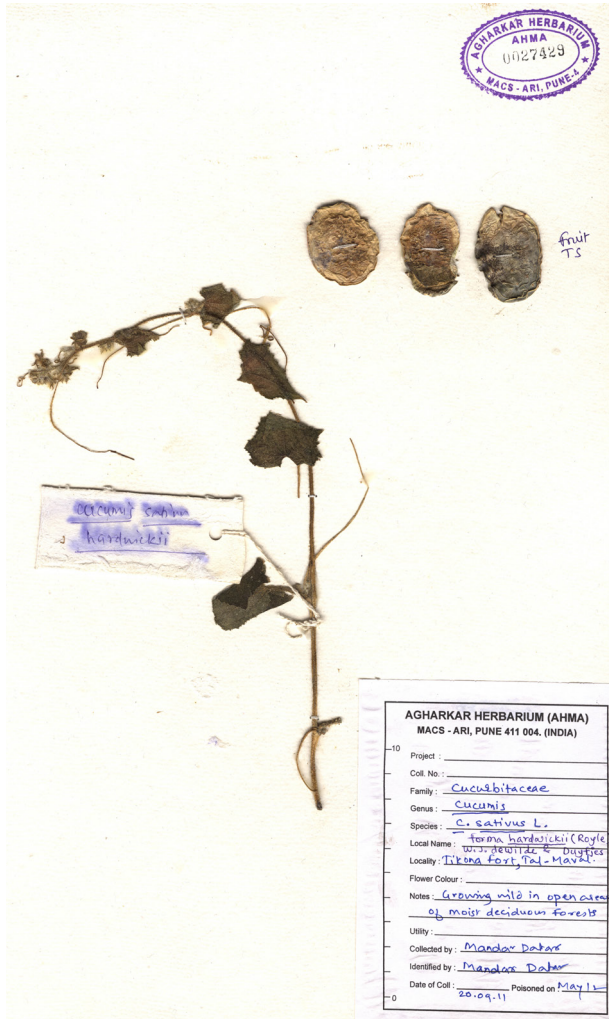


Image 2. Herbarium sheet of *Cucumis sativus* I. forma *hardwickii* (Royle) (27429 AHMA)

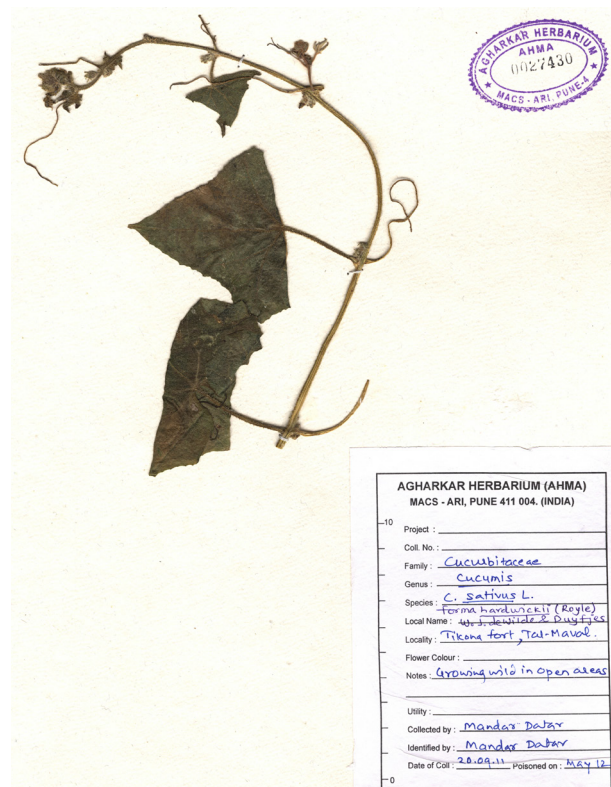


Image 3. Herbarium sheet of *Cucumis sativus* I. forma *hardwickii* (Royle) (27430 AHMA)

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