



RESEARCH ARTICLE

Cucumis sativus f. *hardwickii* (Royle) W.J.de Wilde & Duyfjes (Cucurbitaceae): A new distributional record to the flora of Telangana state, India

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Abstract

Cucumis sativus f. *hardwickii* (Cucurbitaceae), a wild variant of cucumber, is reported as a new distributional record from the Adilabad and Komaram Bheem Asifabad districts of the newly formed Telangana State. The communication provides a detailed taxonomic description of the plant, phenology, and first-time distribution of the forma in Telangana.

Keywords: Adilabad; *Cucumis sativus* f. *hardwickii*; Cucurbitaceae; flora of Telangana; new distributional record

Introduction

The family Cucurbitaceae, also known as cucurbits, gourd, or melon family, has long been valued for their therapeutic properties and use for food (1, 2). The family comprises a wide range of genera, each with its unique economic significance. The family contains nearly 101 genera and over 950 species of economic importance. Of these, the genera *Cucumis*, *Citrullus*, and *Cucurbita* is very popular. The genus *Cucumis* L. comprises nearly 63 species and is widely distributed in tropical regions (3, 4). The *Cucumis* is represented by 11 species in India (5), of which seven species, viz., *Cucumis anguria* L., *C. collosus* (Rottler) Cogn., *C. leiospermus* (Wight & Arn.) Ghebret. & Thulin, *C. maderaspatanus* L., *C. melo* L., *C. sativus* L., and *C. trigonus* Roxb., have already been reported from the Telangana State (6, 7).

During the ethnobotanical fieldwork in the Adilabad and Komaram Bheem Asifabad districts of the newly formed Telangana State of India, we noticed that the tribal was using *Cucumis* fruits to treat the intestinal worms, particularly in children. The wild form of *Cucumis* was found to be luxuriously grown near the cultivated land. Extensive literature search specifically from the local floras, regional floristic works (6, 8, 9) detailed examination revealed the identity of the specimens as the *Cucumis sativus* f. *hardwickii* (Royle) W.J.de Wilde & Duyfjes and it is the new distributional record of the forma in Telangana state. The voucher specimens were preserved in the herbarium with a field notebook number, SMPU/CRI-Hyd15412, at the National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad.

We are reporting its extended distribution in Telangana State (Fig. 1). A detailed description of the plant along with a photo plate are provided to facilitate its easy identification.

Taxonomic treatment

Cucumis sativus f. *hardwickii* (Royle) W.J.de Wilde & Duyfjes, Sandakania 17: 58 (2008). Plants scandent or creeping, hirsute, annual herb, monoecious. Stem angular with white hispid, scabrid, branched. Tendrils are slender and simple. Leaf ovate - cordate, 8-10 × 9-15 cm, margin 3-5-lobed, dentate, membranous, sub-hirsute, base cordate, apex acute-acuminate, petiole slender, 6-18 cm long, hispid, longer than the lamina. Male flowers 3-5, fasciculate, peduncles slender, pedicel 3.5-6 mm long, puberulent, calyx tube campanulate, 5.5-9 mm long, covered with white hispid hairs, segments subulate, erect-spreading, petals 6.5-8.8 mm long, ovate-oblong, acute, hispid hairs outside, yellow, stamens 3, 3-4 mm long, anthers flexuous, coherent, appendages of coherent shorter than the anthers. Pistillode 0.8-1.5 mm long. Female flowers are solitary, pedicel pubescent, with 0.8-1.2 mm long, calyx campanulate 5.5-9 mm long, erect-spreading, corolla 0.8-1.9 mm long, lobes acute, yellow, style 1.5-3 mm long, stigma 2 mm long, connivant, ovary fusiform, muricate, tubercled, aculeate, densely pubescent. Fruits are ovoid, surface with deciduous spine-like structures, green with white stripes, fruits attached to dried plants even the plant dried. Seeds are flat and smooth, 6-7 mm long, white, oblong (Fig. 2).

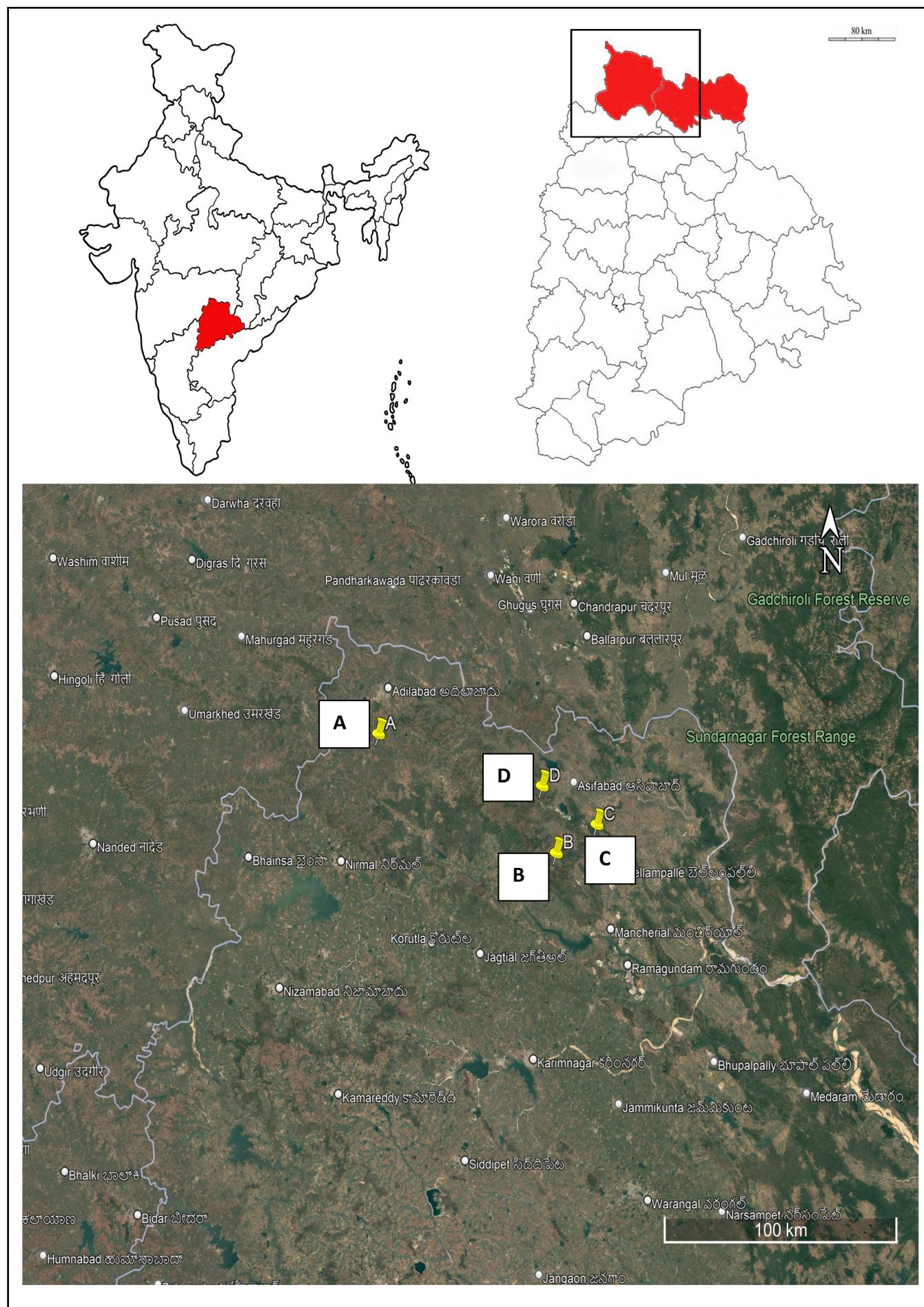


Fig. 1. A detailed location map illustrates the *Cucumis sativus* f. *hardwickii* species recent collection sites (A, B, C, and D) within Telangana state, highlighting its geographical distribution and showcasing the specific areas where the species has been identified and documented.

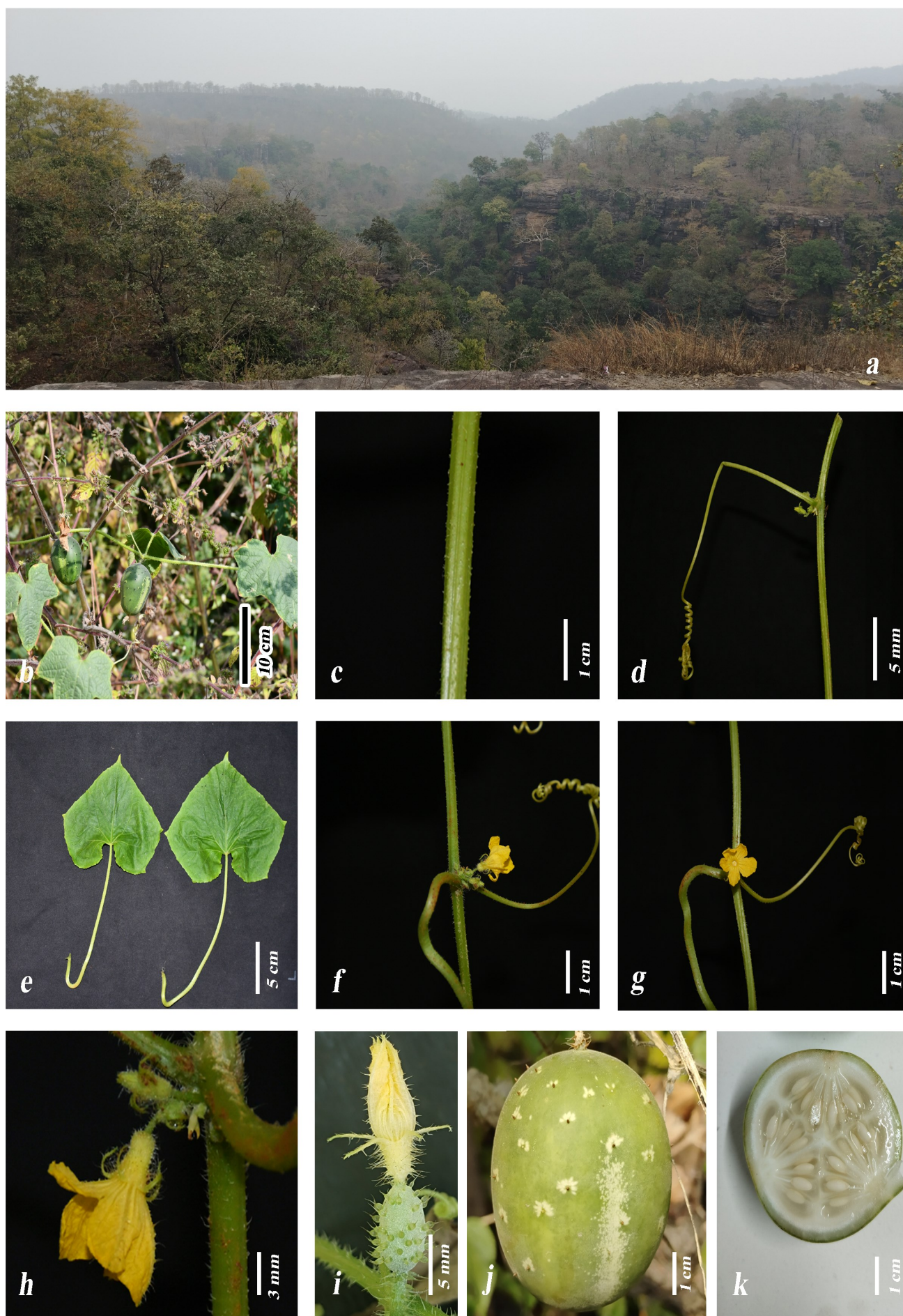


Fig. 2. *Cucumis sativus* f. *hardwickii* (Royle) W.J. De Wilde & Duyfjes. a) Habitat; b) Habit: fruiting branch; c) Stem; d) Tendril; e) Leaf; f) Male flower side view; g) Male flower front view; h) Male flower enlarged view; i) Female flower; j) Fruit; k) T.S. of the fruit.

Phenology

Seed germination initiates with pre-monsoon rains; flowering starts in August and ends in October. At higher elevations, senescence sets in December, with complete senescence ensuing by mid-January. Fruits appear alongside dried stems in February.

Distribution

India (Chhattisgarh, Dadra and Nagar Haveli, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Telangana (Reported herewith), Uttar Pradesh and Uttarakhand) China, Myanmar, Nepal and Thailand.

Habitat

The plants grow at the edges of cultivated fields at higher elevations and in the foothills of dry deciduous forests.

Specimens examined

India, Telangana, Adilabad Forest Division: Mannur, 19° 28'47.9"N 78°29'46.5"E, 468m altitude, 18-12-2022, Mohd Kashif Husain and Goli Penhala Pratap SMPU/CRI-Hyd9073. Asifabad Forest Division: Sudda Ghat, 19°18'23.7"N 79° 10'02.3"E, 425 m altitude, 22-01-2024 Mohd Kashif Husain and Goli Penhala Pratap SMPU/CRI-Hyd15406; Gundala, 19°05'00.2"N 79°13'27.8"E, 508 m altitude, 24-01-2024 Mohd Kashif Husain and Goli Penhala Pratap SMPU/CRI-Hyd15412; Madharam 19°10'41.6"N 79°23'28.2"E, 294 m altitude, 24-01-2024, Mohd Kashif Husain and Goli Penhala Pratap SMPU/CRI-Hyd15467. (Herbarium, Survey of Medicinal Plants Unit (SMPU), National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, Telangana State.

Associated plants

Cucumis melo L., *Ipomoea nil* (L.) Roth, *Ipomoea hederifolia* L., *Cucumis trigonus* Roxb.

Ethnomedicinal uses

The authors are reporting herewith for the first time ethnobotanical information on the use of *C. sativus* f. *hardwickii* based on relevant and concise research questions and proper plant use documentation, based on the associated knowledge of the tribal people of the Asifabad region.

The tribal communities of Asifabad have long trusted the fruit slices and used the plant as a natural treatment to cure intestinal worms, showcasing their deep-rooted knowledge of traditional medicine.

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Authors' contributions

GPP and MKH collected the specimens. GPP prepared the herbarium specimens and the detailed documentation of

the taxonomic characteristics. Additionally, GPP and MKH collaborated to align the research findings and contributed significantly in drafting the manuscript. YIM provided necessary support for the tour and helped in the study. The final version of the manuscript was thoroughly studied and approved by all the authors.

Compliance with ethical standards

Conflict of interest: Authors do not have any conflict of interest to declare.

Ethical issues: None

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