

## *Astragalus vogelii* subsp. *fatimensis* (Fabaceae); A new distributional record to the flora of Gujarat

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### Article Info

Received: 16-01-2022,

Revised: 17-03-2022,

Accepted: 26-03-2022

**Keywords:** *Astragalus vogelii* subsp. *fatimensis*, rare, Gujarat, India.

### Abstract

The present paper deals with botanical description and new distributional record for *Astragalus vogelii* subsp. *fatimensis* Maire belonging to family Fabaceae. The taxon is considered rare in India, has been recorded from Gujarat from new localities in Banaskantha district. It is provided here with description, photographs, habitat ecology, phenology, conservations measures for facilitating the identification and conservation measures.

### INTRODUCTION

The district Banaskantha is situated in the North-Western part of Gujarat State between 24.17 31° N latitudes and 72.43 14° E longitudes and is presumably named after the west Banas River, which runs through the valley between Mount Abu and Aravalli range. It covers an area of 10,751 km<sup>2</sup> and is the second largest district in the state. The genus *Astragalus* L. (1753: 755), distributed throughout the world chiefly in cold to warm arid and semiarid mountainous regions, comprises about 3156 species in 255 sections (Podlech & Zarre 2013, Zarre & Azani 2013, Maassoumi 2020). In India, the genus is represented by 79 species, chiefly distributed in temperate and alpine Himalayas (Chaudhary, 2018). During our intensive botanical explorations in various parts of Tharad Range forest in Banaskantha district, an interesting specimens of *Astragalus* has been observed by the senior author growing in saline area near Nadeshwari Mata Temple. Specimens were collected and properly processed for herbarium by using the standard herbarium methods recommended by Jain & Rao (1977). After critical examination with dissected floral parts and other morphological features and perusal of relevant literature available, the specimens were identified as *Astragalus vogelii*

subsp. *fatimensis* Maire (Shah 1978, Chaudhary 2018, Punjani *et al.* 2021). The species first reported from Punjab based on Edgeworth's collections made during 1836 (Ali 1961), is considered a rare in india (Cooke 1902). A second collection of this taxon was reported from Gujarat as *A. prolixus* Sieb. ex Bunge (1968:9) from two districts (Kutch-Mundra and Broach-Bhadbhut) (Jain & Kanodia 1960, Shah 1978, Raghwan *et al.* 1981). The species has been recollected from Banaskantha district (Punjani *et al.*, 2021) in North Gujarat, Gujarat. So, the present record of this species as a new distributional and range extension record to the flora of Gujarat state. The current localities recorded of *Astragalus vogelii* subsp. *fatimensis* Maire in Gujarat is depicted in Fig.1. A voucher specimen (SGS-010) has been deposited at the Smt. S.M. Panchal Science College, Talod (S.K.) and BARO Herbarium, The M.S. University, Vadodara, Gujarat. In addition, a brief description along with photograph of herbarium sheet is provided to facilitate easy identification of the species in the wild.

### Taxonomic treatment

*Astragalus vogelii* subsp. *fatimensis* Maire, Mem. Soc. Hist. Nat. Afr. Nord 3:126.1933 (**Fig. 2**)

Annual herbs, prostrate, caespitose, stems slender, up to 12 cm long, pilose with appressed, medifixed,

white hairs. Stipules 1.5–2.0 × ca. 1 mm, free from petiole, erect or half spreading, triangular-lanceolate, pilose with white medifixed hairs on both surfaces, ciliate along margins. Leaves 4–5 cm long, imparipinnately compound; petiole ca. 6 mm long; hairy as on stem; rachis 9–12 mm long; leaflets 3–7 pairs, opposite to subopposite, subsessile, ovate or oblong, 3–5 × 1–2 mm, cuneate at base, obtuse or minutely retuse at apex, entire along margins, densely pilose on both surfaces with appressed, medifixed, white hairs. Inflorescence axillary, peduncled umbel or capitate raceme, 2–13-flowered; peduncle 2–5 (10–40.5) mm long, generally distinctly shorter than subtending leaf or sometimes equal to subtending leaf, hairy as on stem. Bracts ca. 1 mm long, longer than pedicel, linear, pilose with white hairs. Flowers 3–5 mm long, pinkish to violet, subsessile, erect; pedicel less than 1 mm long, pubescent. Calyx ca. 3 mm long, campanulate, pilose generally with white hairs outside, sometimes with black hairs especially on teeth, glabrous inside, tube ca. 1.5 mm long, teeth linear, equal to tube. Petals slightly longer than calyx; standard ca. 3 mm long, oblong-elliptic with emarginate tip; wing petals ca. 2.5 mm long, shorter than standard and keel petals, lamina ca. 1.5 mm long, narrowly ovate with subobtusate apex, claw ca. 1 mm long; keel petals ca. 3 mm long, equal to standard, lamina ca. 1 mm long, oblong with subobtusate apex, almost straight, claw ca. 2 mm long. Staminal sheath ca. 2 mm long, obliquely cut at mouth (obtusate at mouth in open condition), free filaments minute; vexillary filament ca. 2 mm long, free from staminal sheath. Ovary ca. 2 mm long, sessile, densely pilose with white hairs; style minute, incurved; stigma capitate, glabrous. Pods 5–10 × 2.5–3.0 mm, sessile, straight, turgid, spreading in all directions, ovoid-oblong, deeply grooved dorsally, shortly acuminate, covered with appressed or spreading, white, subbasifixed hairs, unilocular, 4–6-seeded. Seeds 1.5–2.0 × ca. 1 mm, oblong-reniform, yellowish-brown, turgid, irregularly depressed, smooth, glabrous.

**Flowering & Fruiting:**-January to March.

**Field note:**-In India, the species is restricted to saline habitats only along road margins or sides in very thin and fragmented populations. Only few individuals were noticed in a 2–3 km long stretch. There is a probability that this species occurs in adjacent areas and attempts will be made to collect more specimens to assess its conservation status in India.

**Distribution in India:**-Gujarat, Punjab.

**Specimens examined:**- GUJARAT State; Banaskantha district, Nadabet, near Nadeshwari mata temple, 24°12' 20'' N & 71° 14' 27'' E, -39.9 m, Dt. 17.04.2021, S. G. Shah (SGS-010) Smt. S.M. Panchal Science College, Talod, Sabarkantha;

#### **Acknowledgements**

The author is highly thankful to Dr. S. K. Patel Botany Department, Government Science College, Gandhinagar for confirmation of species, his valuable inspiration, suggestion in preparation of manuscript and the staff of the Range Forest Tharad for their co-operation and help during field trips.

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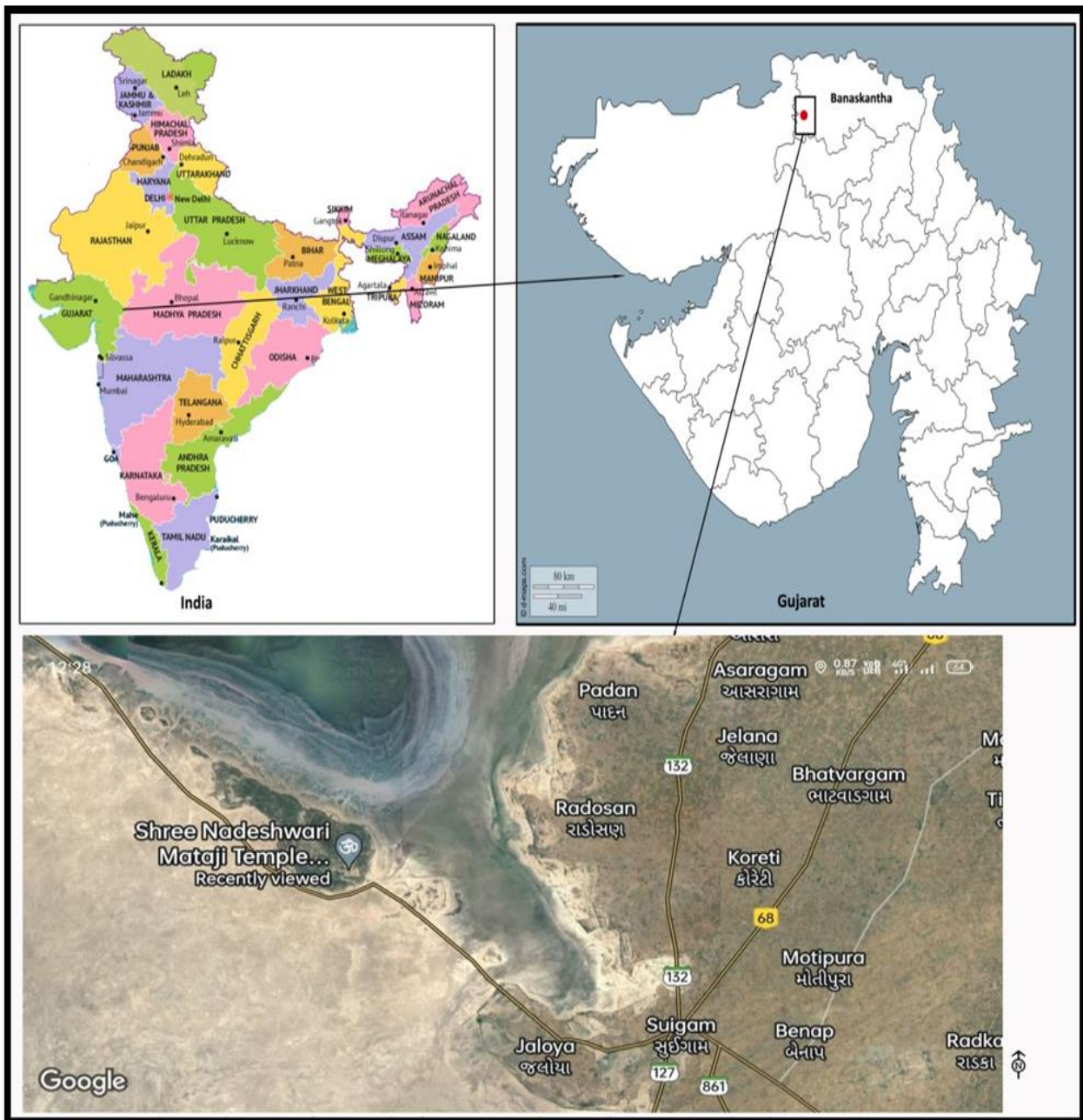


Figure. 1 Map showing location of *Astragalus vogelii* subsp. *fatimensis* Maire in Banaskantha district, Gujarat (source: google map)



Figure. 2 *Astragalus vogelii* subsp. *fatimensis* Maire;  
a. Habit; b. Capsule; c. Flowers

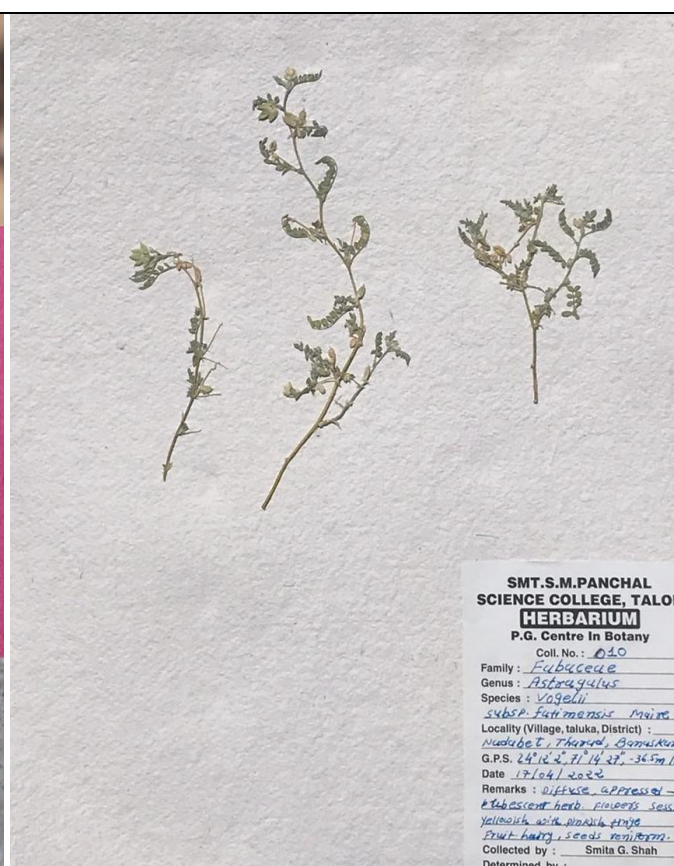


Figure. 3 Photo of Herbarium specimen

SMT.S.M.PANCHAL  
SCIENCE COLLEGE, TALOD  
**HERBARIUM**  
P.G. Centre In Botany  
Coll. No.: 030  
Family: *Fabaceae*  
Genus: *Astragalus*  
Species: *Vogelii*  
Subsp. *Fatimensis* Maire  
Locality (Village, taluka, District):  
*Nadobari, Talod, Gandhinagar*  
G.P.S. *24°12'27.14" N, 73°59'11"*  
Date *17.04.2022*  
Remarks: *diffuse, appressed -*  
*pubescent herb. flowers sessile*  
*yellowish with bluish tinge*  
*fruit hairy, seeds reniform.*  
Collected by: *Smita G. Shah*  
Determined by:

Cite this article

**Smita Shah and Bhasker Punjani. 2022. *Astragalus vogelii* subsp. *fatimensis* (Fabaceae); A new distributional record to the flora of Gujarat. *Bioscience Discovery*, 13(2):49-52.**