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ARACHIS PINTOI KRAPOV. & W.C. GREG. (FABACEAE): A NEW ADDITION TO THE FLORA OF ODISHA

Shashikanta Behera[1] and Sidhanta Sekhar Bisoi[2]*

[1] Crop Improvement Division, ICAR – Central Tuber Crops Research Institute, Regional Center, Bhubaneswar- 771019, Odisha, India

[2]Department of Botany, Regional Institute of Education (NCERT), Bhubaneswar-751022, Orissa, India

*Corresponding author: sidhantasekhar91@gmail.com

ABSTRACT

Arachis pintoi Krapov. & W.C. finds its extended phyto-geographical distribution in the state of Odisha. The plant was collected from the Dumduma area of Bhubaneswar of Khordha district. After reviewing its distribution through flora and available literatures, the species is found to be a new one to the Flora of Odisha. A detailed description with photographs, distribution, occurrence and phenology of the taxon are provided for easy identification.

Keywords: Fabaceae, *Arachis pintoi*, new record, flora of Odisha

Introduction

Arachis pintoi Krapov. & W.C. Gregory is a perennial plant belonging to the family Fabaceae. Family Fabaceae has a number of widely used medicinal plants such as, *Clitoria ternatea* L., *Mucuna pruriens* (L.) DC. *Butea monosperma* (Lam.) Taub., *Cicer arietinum* L., *Crotalaria pallida* Aiton. in India. The genus *Arachis* also has global importance for its economical and food value such as *Arachis hypogea* L., *Arachis glabrata* Benth., *Arachis duranensis* Krapov. and W.C. Greg. etc. This genus constitutes many economically important species widely distributed throughout tropical countries (Constanza *et al*., 2015). The plant *Arachis pintoi* Krapov.& W.C. Greg. is native to South America, and Brazil (Krapovickas and Gregory, 1994; Santana and Valls, 2015). *A.pintoi* have been increased its demand gradually due to perennial crown in character, ability to spread via stolon, high digestibility in nature, easily adaptable to different types of soil, shading tolerance, cold tolerance, fire resi as well as nutritional value (Sousa-Machado *et al*., 2018). There are a number of studies revealed that an increased efficiency of animal production per hectare of pasture by using *A. pintoi*, as a result reduces the need of deforestation of a new area for that purposes (Carvalho and Quesenberry, 2012). This plant also used for cover of soil as ornamental purposes and for the prevention of soil erosion (Sousa-Machado *et al*., 2018; Carvalho and Quesenberry, 2012). *A. pintoi* has contained high contents of protein (18-25% in dry matter), relatively high level of lignin (6-12% in dry matter) and relatively low level of Neutral Detergent Fiber (NDF) (44-56% in dry matter) (Silva et al., 2010; Schnaider *et al*., 2014). Whereas, the concentration of Acid Detergent Fiber (ADF) is widely varies its range from 21% to 41% in dry matter (Hess *et al*., 2003). This plant has possesses a number of secondary metabolites including sterols, flavonoids, phenolic acids, triterpenes, alkaloids, fatty acid and resveratrol (Carvalho *et al*., 2020; Tien *et al*., 2020). Resveratrol is an important bioactive compound having antioxidant properties (Carvalho *et al*., 2020). This bioactive compound (resveratrol) is used as a therapeutic agent for the prevention of treatment of various diseases such as neoplastic, metabolic, cardiovascular, pulmonary as well as neurological disorder (Carvalho *et al*., 2020; Yang *et al*., 2016; Meng *et al*., 2014; Harikumar and Aggarwal, 2008)

In India, the species is distributed in forests of Goa, Karnataka, Kerala, Maharashtra, Tamil Nadu, Sikkim and West Bengal. Study of published literature on flora of Odisha (Haines, 1921-25; Saxena & Brahmam, 1994) and Bhubaneswar (Das and Satapathy, 2020) suggested that the species has not been recorded previously from within the geographical boundary of Odisha, hence it is reported here as a new distributional plant record for the state. During August 2020, while authors working on taxonomic exploration of Khordha district, the specimen is collected near the Dumduma area of Bhubaneswar of Khordha district (Figure 1).

The nomenclature, botanical description, ecology, phenology, distribution and photographs of the species have been provided in the paper for easy identification and further studies. The herbarium specimens have been deposited to Department of Botany, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India. (Figure 2)

DESCRIPTION OF THE SPECIES

Arachis pintoi Krapov. & W.C. Greg. (Figure 3)

A herbaceous perennial tropical plant forming creeping legume, can reach 20-50 cm in height and form dense swards. Strongly tap-rooted with many secondary nodulated roots. Stems are initially prostrate and then become

ascendant. Leaves are tetrafoliolate, mucronate, hairy, leaflets are oblong-obovate to obovate in shape, 4.5 cm long x 3.5 cm broad, dark green at their upper side and velvet-hairy at their lower one. Flowers are yellow, borne on short in leaf-axils racemes and very similar to groundnut flowers but smaller, flower stalks elongate and grow down towards the soil. Stamens 9-10, monadelphous, 5 alternate anthers shorter and dorsifixed, others longer basifixed. Ovary 2-3 ovulated, raised after flowering by elongating torus, finally becomes stalk like and curves down towards ground burying the fruit. The fruit is a terminal underground, one-two seeded pod.

Common Name: Pinto Peanut

Flowering & Fruiting: August-October

Habitat: Low forest with a fairly dense canopy, sandy to clay soil, preferably well-drained, with low to moderate fertility, Soil pH 4.5-6.

Specimen examined: India, Khorda dist. Dumduma, 19.08.2020. $20^0$14'52" (NL), $85^0$47'9" (EL), S. Behera and S.S. Bisoi. 417 (RIE) (Figure 2).

Global distribution: South America , Eastern and Central Brazil.

Indian distribution: Arunachal Pradesh, Assam, Manipur, Sikkim, Meghalaya, Andra Pradesh, Tamilnadu, Kerala, Pondicherry, Karnataka, Tripura, Rajasthan, West Bengal, Odisha

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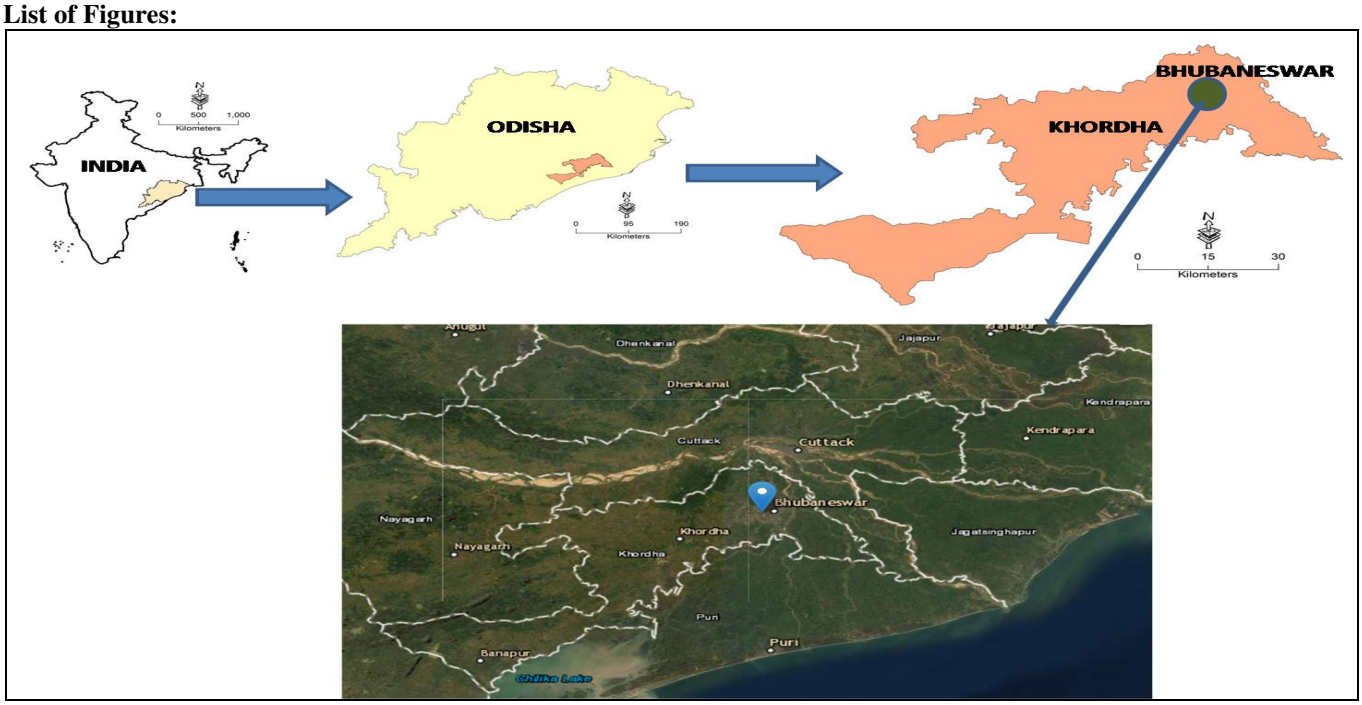

Fig. 1 : Map showing the collection site in Bhubaneswar of Khordha, Odisha

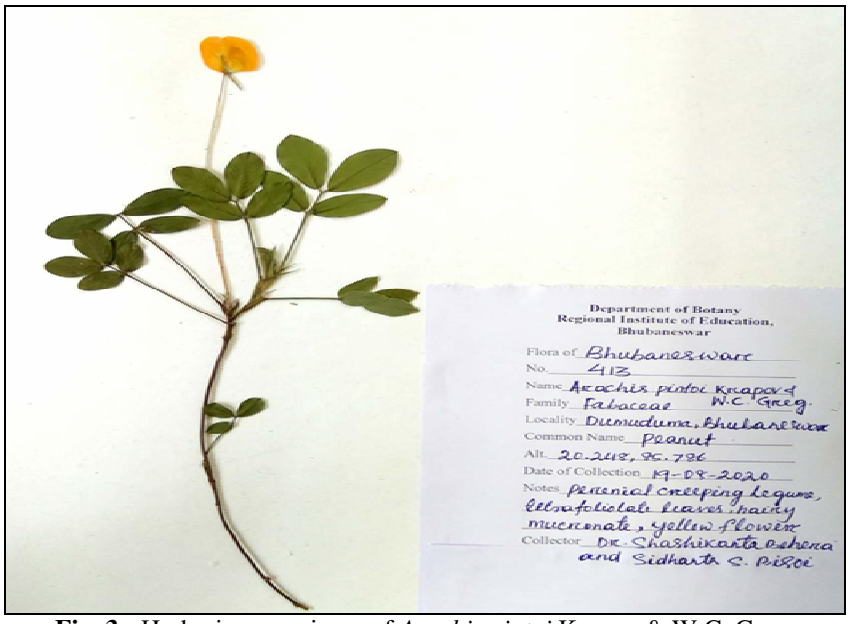

Fig. 3 : Herbarium specimen of *Arachis pintoi* Krapov.& W.C. Greg.

Fig. 3 : *Arachis pintoi* Krapov.& W.C.Greg. (A) Plants growing in the natural habitat; (B) Author collecting the plant specimen; (C) Magnified image of flower with plant; (D) A single plant with flower in the habitat; (E) Stem with flower bud and flower; (F) Flower bud; (G) Flower with distinct Petals

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