
**A NEW SPECIES OF PHYTOSEIID MITE (ACARI: PHYTOSEIIDAE) FROM
KERALA, INDIA**

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ABSTRACT: An adult female of a new Phytoseiid mite viz., *Amblyseius dioscoreae* is described and illustrated. It was collected from *Dioscorea alata* (L.) leaves infested with spider mite *Tetranychus macfarlanei*.

KEYWORDS: Acari, Predatory mite, Phytoseiidae, *Amblyseius*, New species, Kerala.

INTRODUCTION

The family Phytoseiidae includes predatory mites of economic importance. They are useful in the biological control of phytophagous mites and small insects that are agricultural pests^{1,9,12}. A number of new species and new records of this family have been reported from Kerala^{2,3,4,5,6,7,11,14,15}. A total of 2709 phytoseiid species has been described of which 2436 valid species are placed under 91 genera, 3 subfamilies viz., Amblyseiinae, Phytoseiinae and Typhlodrominae¹⁰. However, the reports on occurrence of new species are scanty from Peninsular India. Hence, a systematic survey was undertaken to unravel the occurrence of new species of Phytoseiidae from various districts of Kerala.

MATERIALS AND METHODS

The predatory mite fauna harbouring various species of vegetable crops were collected by making extensive surveys in North Kerala. Samples containing leaves, twigs, petioles and flowers were randomly

collected in polythene bags and examined under stereozoom microscope. Quite often plant parts were beaten over a dark colored rexin sheet and the dislodged mites were picked up with a camel hair brush and stored in 70% alcohol. They were then upgraded in alcohol series and mounted in Hoyer's medium permanently. Detailed structural studies and illustrations were made using Olympus CX 31 microscope attached with drawing tube. The classification system⁸ and setal nomenclature¹³ were followed. All the measurements are given in microns. All the type specimens have been deposited in the Acarological collections maintained in the P G & Research Department of Zoology, Malabar Christian College, Calicut, which will be later transferred to Zoological survey of India, Calicut, Kerala.

Abbreviations used: CF- Chelicera of female, DF- Dorsal view of female, LIV- Leg IV showing setation, Mp- Metapodal plate, Sp- Spermatheca, VF- Ventral view of female.

RESULTS AND DISCUSSION

Amblyseius dioscoreae sp.nov.

Female: Dorsal shield smooth, **380** long and **260** wide, with 17 pairs of setae. Measurement of setae: j_1 -**40**, j_3 -**65**, Z_4 - **115**, Z_5 - **300**, s_4 -**110**. All other setae between 8-10. Distance between j_1 -**20**, j_3 -**50**. Sternal shield **85** long, **80** wide with 3 pairs of setae. Lateral margins and anterior part of sternal shield slightly concave. Setae ST_1 - **30**, ST_2 -**28**, ST_3 - **20** and ST_4 -**25** placed on metapodal plates. Genital shield **100** wide with ST_5 - **25**. Ventrianal shield **100** long and **70** wide, vase shaped with concave lateral margins. Three pairs of preanal setae measuring JV_1 , ZV_2 , JV_2 -**20** each and a pair of semilunar pores. Four pairs of setae present on the area around the ventrianal shield measuring JV_4 -**15**, JV_5 -**60**, ZV_1 -**10** and ZV_3 - **10**. Two pairs of metapodal plates present, primary one **20** and accessory one **10**. Peritreme extends anteriorly up to j_1 . Spermatheca with short, tubular cervix (**13** long), with bifid atrium. Fixed digit of chelicera **25** long with 4 teeth anterior to *pilus dentilis*, 6 teeth posterior to it. Movable digit **30** long with 4 teeth. Macrosetae on leg IV: genu- **126**, tibia- **98**, basitarsus **50**.

	2	2
Leg chaetotaxy: genu II	2	— — 1,
	0	0
	2	2
genu III	2	— — 1,
	0	0
	2	1
tibia II	1	— — 1,
	1	1
	2	1
tibia III	1	— — 1,
	0	1

Male: Unknown

Habitat: *Dioscorea alata*(L.), *Pisum sativum*(L.), *Coccinia grandis*(L.).

Material examined: HOLOTYPE: Female, marked on the slide along with other 2♀♀, INDIA: KERALA: Manjeri, (Malappuram District), 25.xi.2015.ex: *Dioscorea alata*(L.), Coll. Rahul (No. A. 271/1).

PARATYPE: One Paratype female, collection details same as holotype (No. A.271/2). 2♀♀ Kavumvattam (Calicut District), 24.x.2015.ex: *Pisum sativum*(L.), Coll. Rahul (No.A.152). 2♀♀ Pattambi (Palakkad District), 5.xi.2015.ex: *Coccinia grandis*(L.), Coll. Rahul (No. A160/1 & A160/2).

Etymology: The nomenclature of this species is based on the name of one of the host plant *Dioscorea alata*(L.) from which the specimen was collected.

Remarks: This new species resembles *A. largoensis* (Muma, 1955) in general appearance, shape of sternal and ventrianal shield but differs in the following characters:

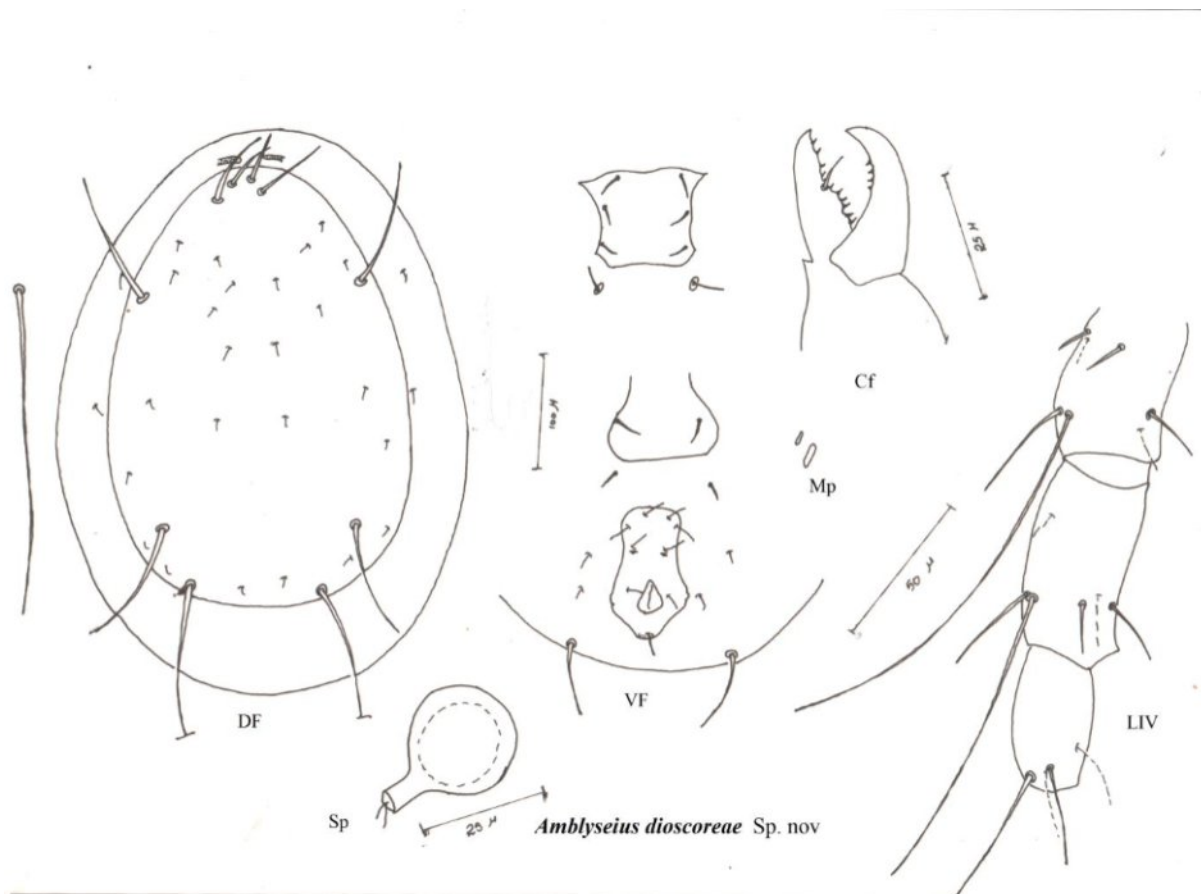
1. Cervix of the spermatheca is short, tubular with bifid atrium in the new species but it is long with parallel wall in *A. largoensis*.
2. Fixed digit of chelicerae bears 6 teeth posterior to *pilus dentilis* in the new species where as it is 3 in *A. largoensis*.

3. Number of teeth on movable digit of chelicerae 4 in the new species instead of 2 in *A.largoensis*.
4. Three pairs of pores present in *A.largoensis* whereas it is absent in new species.
5. The length of Z5 in this new species is longer (300) than *A.largoensis* (250).
6. The length of Z4 is longer in the new species (115) but Z4 in *A.largoensis* 105 long.

7. Macro setae on leg IV genu- 126, tibia-98, and basitarsus- 50 long in new species, where as it is 98, 70 and 48 respectively in *A.largoensis*.

8. The tibia II and III of the new species is $1\frac{2}{1}$ $\frac{1}{1}$ and $1\frac{2}{1}$ $\frac{1}{1}$

whereas it is $1\frac{1}{1}$ $\frac{2}{1}$ and $1\frac{1}{1}$ $\frac{1}{1}$ in *A.largoensis*.



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