

**NAAS Rating****2012:1.3; 2013-16: 2.69****2017-2020: 3.98****IMPACT FACTOR****2019-20: 2.40****IPI Value****1.92****Received on:****26th September 2020****Revised on:****25th October 2020****Accepted on:****10th November 2020****Published on:****1st December 2020****Volume No.****Online & Print****130 (2020)****Page No.****01 to 07**

Life Sciences Leaflets
is an international open
access print & e
journal, peer reviewed,
worldwide abstract
listed, published every
month with ISSN, RNI
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FIRST RECORD OF GENUS RHAGODES, POCOCK, 1897 (SOLIFUGAE: RHAGODIDAE) FROM GUJARAT, INDIA

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ABSTRACT:

This study documented and reports of Genus *Rhagodes*, Pocock, 1897 for the first time for Gujarat. A detailed morphological diagnosis and description and body measurement were given based on a single female.

KEYWORDS: *New Rhagodes, Solifugae, Rhagodidae Gujarat, India.*

INTRODUCTION:

According to Harvey 2003, Order Solifugae contains 1,116 species and 144 genera belonging to 13 families from worldwide. Family *Rhagodidae* contains 27 genera and 98 species. Genera of the family *Rhagodidae* are widely distributed in northern Africa through southwestern Asia. A total of five species and three genera of Family *Rhagodidae* were recorded from India. The Genus *Rhagodes* Pocock, 1897 has 27 species and distributed in Afghanistan, Azerbaijan, Egypt, Israel, Iran, Libya, Somalia, Pakistan, Sri Lanka, Tanzania, Tunisia, Turkmenistan and Yemen. This paper offers the first record of Genus *Rhagodes* Pocock, 1897 in Gujarat.

METHODS:

The dead specimen was collected using a hand picking method from the Taranga hill, Mahesana district (23.7846°N 72.6333°E). The study area falls in Northern Gujarat. The climate of Taranga hills was a dry and semiarid type. In the Study Area, the highest average temperature

is 38°C in May and the lowest is 20°C in January. The annual rainfall of the study area is 238m.m to 822m.m. The dead sample of Solifugae was observed under a stereo zoom microscope for morphology. USB digital microscope with a micro-measure software package was used for body parts measurements. All the measurements of specimens are in the millimeters. (Table-1)

TAXONOMY:

Rhagodes POCOCK, 1900

(SOLIFUGAE: RHAGODIDAE)

Material Examined :(Figure-1&2) 1 ♂ (BMP), 01.11.2014, collected from Taranga hill near Jogida Ni Gufa (23°58'19"N & 72°44'53"E), Taranga, Mahesana district.

Distribution: Afghanistan, Azerbaijan, Egypt, Israel, Iran, Libya, Somalia, Pakistan, Sri Lanka, Tanzania, Tunisia, Turkmenistan, Yemen

Diagnosis:

Family Rhagodidae are separated from other families of the order Solifugae by their ventrally located anus and the unique hemispherical form of their anal segment. Rhagodids are short-legged, heavy-bodied, brightly or contrastingly colored and well development of the cheliceral dentition. (Figure-3)

According to Roewer (1933), genus *Rhagodes* has lack ventral spines on the tarsi of legs 2 through 4. (Figure-4)

The specimen was identified as a female by the occurrence of malleoli or Racquet organs. (Figure-1)

Description:

Coloration: Prosoma: Propeltidium and exterior lobes black, with dark brown bristles; eyes brown, ocular tubercle black; Propeltidium, mesopeltidium, and metapeltidium are orange (Figures-1&2). Chelicerae dorsally black and ventrally blackish-brown, inner surface brown to orange; fingers blackish-brown (Figures-6). Pedipalps orange except for black metatarsi and reddish-brown tarsi (Figure -1&2); Legs uniformly orange, except for the apical portion of 1st tarsi, which is a reddish-brown. Opisthosoma: dorsally with a black longitudinal stripe, which

gradually widens backward to 10th tergite, each side of the black stripe with a narrow black longitudinal stripe (Figure-1&2); ventrally a with orange lo longitudinal stripe (Figure-1)

Dentition: Movable finger with one proximal tooth teeth; fixed finger with 6 teeth: 1 distal tooth, 1 medial tooth, 1 proximal tooth, and 3 retrofondal teeth (1 retrofondal apical teeth, 1 retrofondal medial tooth, and 1 retrofondal proximal tooth) (Figures-3).

Chaetotaxy: Fixed finger: A regularly-spaced, well-developed distally directed and longitudinal row of pdp setae, aggregate in length and heftiness from proximal to distal, and a row of secondary pdp setae; bowed and distally focused; a row of long acuminate pvsd setae; feeble, small pm setae thinly scattered among stridulatory setae; a thin, longitudinal field of a little curved, ventrodistally to distally directed pv setae, aggregate in length and breadth distally Stridulatory apparatus. Containing parallel, regularly-spread out and distally focused stridulatory setae. (Figure-6) Movable finger: Series of straight to slightly curved, dorso-distally directed mpd setae, the apical-most setae is longer; series of straight, ventrodistally directed mpv setae, distally increasing in length, thickness and curvedness; a narrow field of straight, non-plumose, distally directed mpm setae. (Figure-6)

Bacilli: The first three pairs of legs Coxae have with long light brown bacilli, which are relatively well observable on the Coxae of legs III. Their figure varies among Coxae and they are typically located at Coxae of legs II and III (Leg I- 2/0, Leg II-3/2, Leg III- 6/5). (Arrows at Figure-5).

Spinulation: Tarsus and metatarsus of legs II-IV ventrally without spiniform setae; metatarsus of legs II and III dorsally with a series of six brown spiniform setae.

Opisthosoma: Genital sternite of the female with Genital sternites with less concave internal margin, opercula of the genital sternite with two lobes extended laterally and a central longitudinal opening; posterior partially 3rd and 4th abdominal sternites with two proportionally located paired spiracles; anus hemispherical and located slit on the ventral surface.

Ecology: The species is nocturnal. Probably this species prefers living in semiarid. The specimen was observed under stones and showed signs of aggressive behavior and tried to hide underneath the stone.

RESULTS AND DISCUSSION:

In British-India, Pocock, 1900 was recorded a total of five species from Family *Rhagodidae*, which were *Rhagodes annulatus* (Simon); *Rhagodes nigriceps* (Pocock); *Rhagodes*

nigrocinctus (Bernard); *Rhagodes vittatus* Pocock, and *Rhagoderma nigriceps* (Pocock). Harvey, 2003 was transferred *Rhagodes annulatus* to *Rhagodima annulatus* (Simon); *Rhagodes nigriceps* to *Rhagoderma nigriceps* (Pocock); *Rhagodes nigrocinctus* to *Rhagodima nigrocinctus* (Bernard), and *Rhagodes vittatus* to *Rhagodomma vittata* (Pocock). After this transfer of the genera by Harvey, 2003, no true record of genus *Rhagodes* was recorded. This study documented the first record of Genus *Rhagodes* from Taranga Hills, Mahesana of Gujarat.

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Table- 1: Body Parts Measurements of Specimen

Body Part	Length		Width		
Chelicerae	11.04		6.35		
Propeltidium	3.49		5.38		
Abdomen	12.62		6.57		
Extremity	Tarsus	Metatarsus	Tibia	Femur	Total
Palp	2.66	1.66	2.33	3.62	10.27
Leg I	1.10	1.36	1.78	3.58	7.82
Leg II	1.32	1.42	2.40	4.14	9.28
Leg III	1.48	3.02	3.10	5.83	13.43
Leg IV	1.49	3.17	3.10	10.44	18.20



Figure-1: Ventral habitus



Figure-2: Dorsal habitus

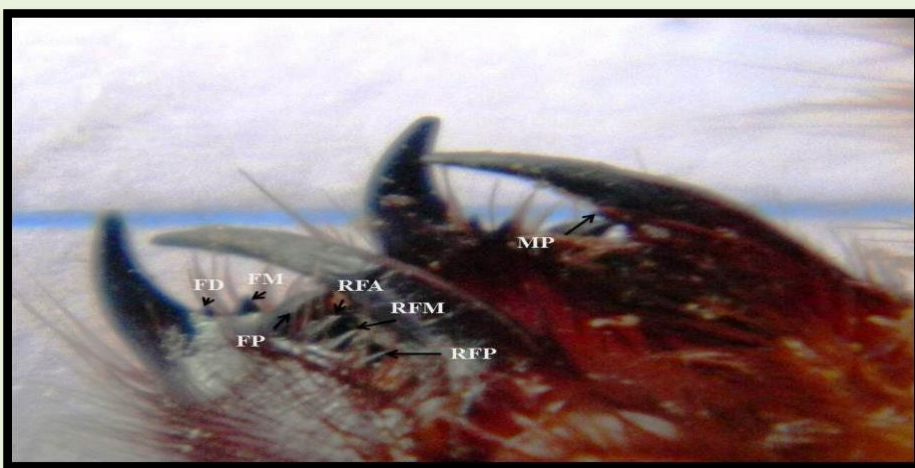


Figure-3: Dentition of chelicera

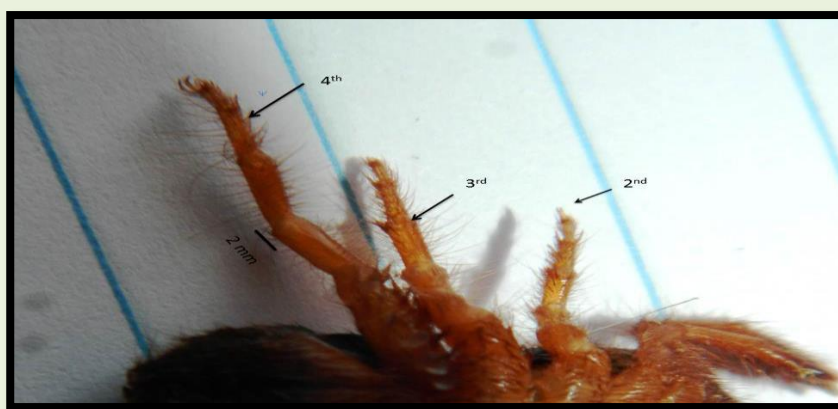


Figure-4: Ventral view of Legs (No Spines)



Figure-5: Bacilli on Coxae

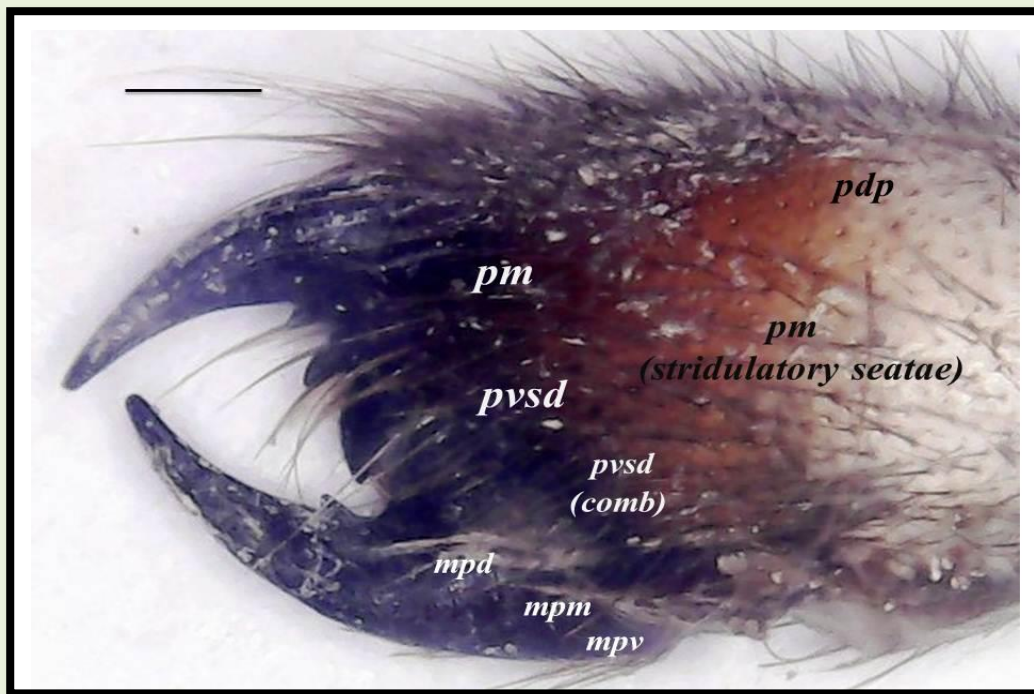


Figure-6: Cheliceral views of Rhagodes