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ARTHROPODA: ARACHNIDA: PALPIGRADI, Thorell, 1888

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FAUNA OF INDIA CHECKLIST

ARTHROPODA: ARACHNIDA: PALPIGRADI, Thorell, 1888

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Introduction: Palpigradi, also known as microwhip scorpions or palpigrades, are tiny arachnids measuring less than 3 mm in length. They have a long, whip-like tail called a flagellum, which consists of 14–15 segments. Each segment is covered with fine bristles that serve as sensory structures to detect air movements.

Unlike other arachnids, palpigrades use their unmodified palps for walking instead of the first pair of legs, giving them a distinctive way of moving. Their bodies are translucent and colorless, with a pale opisthosoma. Their exoskeleton is weakly sclerotized, making them more delicate compared to other arachnids. They also display a nervous walking behavior, constantly using their first pair of legs to sense the surface they are moving on.

Global Diversity: At present, a total of 138 known species of microwhip scorpions are described under 6 genera and 2 families. However, 2 fossil species under 2 genera had also been reported. (World Palpigradi Catalog, 2022).

Indian Diversity: 4 species are reported so far from India under 1 genus and 1 family i.e., Eukoeneniidae.

Diversity in States:

Sl No.	State/UT	No. of Species	No. of Endemic Species
1	Andhra Pradesh	0	0
2	Arunachal Pradesh	0	0
3	Assam	0	0
4	Bihar	0	0
5	Chhattisgarh	0	0
6	Gujarat	0	0
7	Goa	0	0
8	Haryana	0	0
9	Himachal Pradesh	0	0
10	Jharkhand	0	0
11	Karnataka	0	0
12	Kerala	0	0
13	Madhya Pradesh	0	0

Sl No.	State/UT	No. of Species	No. of Endemic Species
14	Maharashtra	0	0
15	Manipur	0	0
16	Meghalaya	0	0
17	Mizoram	0	0
18	Nagaland	0	0
19	Odisha	0	0
20	Punjab	0	0
21	Rajasthan	0	0
22	Sikkim	0	0
23	Tamil Nadu	0	0
24	Telangana	0	0
25	Tripura	0	0
26	Uttar Pradesh	3	2
27	Uttarakhand	0	0
28	West Bengal	0	0
29	Andaman & Nicobar	0	0
30	Chandigarh	0	0
31	Dadra Nagar Haveli, Daman & Diu	0	0
32	Delhi	0	0
33	Jammu & Kashmir	0	0
34	Ladakh	0	0
35	Lakshadweep	0	0
36	Puducherry	2	1
37	State Unknown	0	0
	Total Species	**4**	**3**

Endemism: 3 species are found as endemic to India.

Habitat: They are typically found in soil and leaf litter within moist tropical and subtropical regions, with many species being restricted to caves (Condé, 1996). The unique genus *Leptokoenenia* Condé is known to inhabit littoral ecosystems in Saudi Arabia and Congo, a habitat that was once considered the ancestral environment from which all other palpigrades may have evolved (Savory, 1977). Their ability to migrate through interstitial spaces enables them to survive in harsh and challenging environments. Approximately one-third of all described species are troglobitic, meaning they are specifically adapted to cave life.

Ecological Significance: They are predators and capture very small soft-bodied invertebrates with their pedipalps. They are the most ecologically diverse group of arachnids, with many species acting as microbivores, herbivores, scavengers, predators, and parasites.

Human Significance: No significant studies have been done in this aspect. Rucker (1903) suggested that palpigrades feed on arthropod

eggs, but nothing seems to support this idea.

Threatened species as per IUCN: None of the species is included in the list of threatened species as per IUCN.

Protected species as per WPA (2022): None of the species is considered as protected species as per WPA (2022).

Species under CITES: None of the species is considered under CITES.

Invasive Alien Species: None of the species is treated as invasive alien species.

Gap Areas: Palpigrades, a largely unexplored group of Indian arachnids, have been reported only from Uttar Pradesh and Puducherry. This limited knowledge is primarily due to a shortage of taxonomists specializing in this group.

Systematic list of Palpigradi of India (Endemic species marked with ***)**

Order Palpigradi

Family Eukoeneniidae Petrunkevitch, 1955

1. *Eukoenenia angusta* (Hansen, 1901)
2. *Eukoenenia angusta hindua* Condé, 1989*
3. *Eukoenenia angusta tamula* Rémy, 1960*
4. *Eukoenenia singhi* Condé, 1989*

References:

Condé, B. (1996). Les Palpigrades, 1885–1995: acquisitions et lacunes. *Rev. Suisse Zool., hors série,* **1**: 87–106.

Rucker, A. 1903. Further observations on Koenenia. *Zoologische Jahrbücher, Abtheilung für Systematik, Geographie und Biologie* der Thiere, **18**: 401–434.

Savory, T.H. 1977. Arachnida, 2nd edition. Academic Press: London: 348pp

World Palpigradi Catalog 2023. World Palpigradi Catalog. *Nat. Hist. Mus.* Bern, online at http://wac.nmbe.chn (accessed on 31st December 2024).