

## Notes on the genus *Pseudovelvia* Hoberlandt, 1950 with the description of a new species from India



### Zoology

#### KEYWORDS:

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### ABSTRACT

*Pseudovelvia* Hoberlandt, 1950 is an important genus of family *Veliidae* 1843 which is hereto recorded from India. It is represented in India by a new species *Pseudovelvia* (*s.str.*) *polhemi* sp.nov. is described from India. The *Veliidae* are best known of all aquatic hemiptera of the world and are extremely common in Indian waters. The members of the family are easily differentiated from the related family *Gerridae* based on hind leg not surpassing beyond the tip of abdomen and the presence of median longitudinal groove on vertex. *Angilia* Stal 1865 belongs to the subfamily *Veliinae* China and Usinger, 1949 of the family *Veliidae*. The genus *Pseudovelvia* Hoberlandt 1950 are easily recognized from the members of other genera due to long, stout and curved antennae which extended with more than 2/3 length beyond apex of head, blade like ventral arolium, cone shaped small proctiger which is caudally directed in female.

**Material and Methods:** Specimens for the present study have been collected from the crevices of holy riverbank of Yamuna and in order to study the specimens, dried specimens were softened in alcohol and macerated in 10% KOH solution to remove the genital capsule and dissected to study the structural details of mouthparts, eyes, antennae, genitalia etc. All drawings were being made from camera lucida. For comparative study, the data collected from World Wide Web.

*Pseudovelvia* Hoberlandt 1950. 33. 38(as the subgenus *Microvelvia* Westwood 1834). Type species: *Microvelvia major* Poisson.1926 by original designation-*Publ.cult.co.Diam.* Angola 10:7-50

*Perivelvia* Poisson 1952. 46 (as subgenus of *Microvelvia*) Type species: *Microvelvia betiyoki* Poisson 1951. Monobasic-*Mem. Inst. Scient.* Madagascar (E). 1:23-70.

Type species: *Pseudovelvia tibialis* Esaki & Miyamoto. 1955 here designated as replacement for misidentified type species: *Xiphoveloidea major* (Poisson) *Sieboldia* 1:169-204.

This species was first described by Hoberlandt 1950 as a subgenus of *Microvelvia* Esaki & Miyamoto raised *Pseudovelvia* to generic rank with the type species *Pseudovelvia tibialis* Esaki & Miyamoto. 1955.

The members are Apterous or macropterous with stout body. Head strongly deflected in front of eyes. Antennal tubercle hidden beneath the eyes. Ventral lobe of head reaching prothorax. Rostrum is slender with its apex reaching middle of mesosternum. Hind leg longer than middle leg. Fore tibia of male possess long grasping comb. Claws are normal. Ventral arolia bristle like. Sternum seven of male with two internal apodemes on anterior margin. Male genital segment retracted into pregenital abdomen. Eighth segment is ventrally modified. Female genital segments with first gonocoxae elongated having cone shaped proctiger.

**Distribution:** Oriental realm (Burma, China, Formosa, India, Java, Philippines, Malaya) and Madagascar. Australian and Ethiopian realm.

This genus includes two subgenera:

Genus: *Pseudovelvia* Hoberlandt. 1950  
Type species: *Pseudovelvia tibialis* Esaki & Miyamoto. 1955  
Type: B.P.Bishop Museum, Honolulu

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This genus includes two subgenera:

Subgenus: *Trichovelvia* Hoberlandt 1950  
Type species: *Microvelvia (Trichovelvia) machadoi* Hoberlandt 1950

Subgenus: *Pseudovelvia* (*s.str.*) Hoberlandt 1950  
Type species: *Microvelvia major* Poisson 1926

Variable hair length, female connexival more or less raised, not covering the abdominal tergum. First gonocoxae moderately elongated. Male hind tibia modified at apex, hind tarsus having ventrally present bristle like hair.

This subgenus is distributed throughout the Ethiopian and Oriental regions and in China, Korea and Japan. The genus is recorded in India and a new species *Pseudovelvia* (*s.str.*) *polhemi* sp.nov. described in the present contribution.

***Pseudovelvia* (*s.str.*) *polhemi* sp.nov.**

#### Description:

**Size:** Male, Apterous 1.7-1.9mm in length, Female, Apterous 2.15-2.35mm in length.

**Colour:** Body generally dark brown to blackish with pronotum and connexivum and basal part of legs pale. Head dark brown while the base of vertex light bronish. All antennal segment except the apex brown with the apical part black. Pronotum dark brown. Abdominal tergum dark black. Genital segment dark brown. Body covered with dense pubescence. Some bright shiny hairs on the inner margin of

eyes present.

**Structural characteristics:**

**Head:** Body elongate somewhat elliptical. Head shorter than wide across eyes (32:45) in Apterous male and (36:56) in Apterous female. Median longitudinal furrow on vertex well separated from the base of vertex. Eyes relatively small. (9.28:19.9 in apterous male and 18.8:36.2 in apterous female). Antennae stout, curved in the middle. Relative length of leg segments of male Ist: IInd: IIIrd: IV: : 32.2: 21: 20.1: 29.5 and of female Ist: IInd: IIIrd: IV: : 33: 26: 24: 31.2. Antenniferous tubercle well developed. Clypeus with basal margin distinct.

**Relative length of leg segments:**

**Apterous male (1.7-1.9 mm)**

	Femur	tibia	tarsus	First tarsal segment	Second tarsal segment
Fore leg	46	47	22	-	-
Mid leg	56	57	31	10	22
Hind leg	59	67	36	11	24

**Apterous female (2.15-2.35 mm)**

	Femur	tibia	tarsus	First tarsal segment	Second tarsal segment
Fore leg	58	52	28	-	-
Mid leg	71	69	41	11	20
Hind leg	78	84	41	12	25

**Abdomen:** Abdomen twice as long as head, pronotum in male (128-54) and little more than twice in female (156-67). Abdominal tergum narrowed backward. First tergite shorter than seventh ( 19-22 in Apterous male and 24-31 in Apterous female). Seventh tergite a little wider than long (26-21). Connexivum broad and erected.

**Male genitalia:** Eighth abdominal segment moderately long slightly widened posteriorly with a large oval impression on the ventral side. A tuft of suberect bristles on each border. Few bristles along posterior margin and some bristles scattered along longitudinal median line of the irregular two rows. Ninth abdominal segment somewhat narrowed in the middle with a tuft of distinctly long bristles on either side. Both parameres small with round apex and of similar shape. Pygophore with apical margin rounded.

**Female genitalia:** Eighth segment long and developed ventrally. First valvula with inner lobe short and fused with membranous valva, outer lobe with apical region membranous, acute at apex. Second valvula with two apical lobes, outer one more distinct, inner lobe hook like extending a little beyond the apical margins of intervalvular membrane.

**Material examined:** *Holotype* Apterous male, *allotype* ♀ Apterous female on pins. *Paratypes* ♂♂♂ Apterous males, ♀♀♀ Apterous female. Bengali ghat river bank, Mathura 18.iii.2012( A. Prasad). Macropterous form unknown.

Mandibular and maxillary plates clearly demarcated from each other. Rostrum long and its apex touching base of intermediate coxae.

**Thorax:** Pronotum broadly rounded and longer than half the width (32:56 in Apterous male and 38: 67 in Apterous female). Intersegmental suture between Mesonotum and metanotum clearly demarcated. Legs long, stout. Anterior tibiae covered with comb of pegs on the apical part. Basal segment of posterior tarsi of male covered with 10 long swimming bristles in two rows.

**Distribution:** India: Mathura (Uttar Pradesh)

**Remark:** This species is easily separated from other species of *Pseudovelgia* by the characteristic structure of genital segments, shorter basal segment of posterior tarsi which is half as long as second segment, two rows of swimming bristles etc. The type including type species is presently deposited at Zoological museum Kishori Raman (P.G.) College, Mathura.

The name of species after J.D. Polhemus for his outstanding contribution in the taxonomy of water striders.

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