On the genus Hemiclepsis Vajdovský, 1854, with a key and catalogue of the species (Hirudinoidea: Glossiphoniidae)

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The species of the genus Hemiclepsis Vajdovský, categorizing, so far as our present knowledge goes, only 4 species and 1 subspecies, range in the Palearctic Region and in India and only one subspecies invades the South-East Indian Islands.

The genus Hemiclepsis was established in 1854 by Vajdovský, in the course of his studies concerning the excretory system of the leeches for the species Cephaloptera tessulata (O. F. Müller, 1774) and C. marginata (O. F. Müller, 1774). Unfortunately, Vajdovský mentioned only, in merely a footnote to his work, that these species differ so much "both in their external characters and internal structure" from the other species of the genus Cephaloptera Savigny, 1822, that he establishes the genus Hemiclepsis for them, without, however, submitting a generic characterization of even a few words. In 1892, Blanchard redescribed Müller's species under the name Glossiphonia marginata. The first characterization of the genus Hemiclepsis was also given by Blanchard in 1894, relegating to it the two species mentioned by Vajdovský. In 1902, Livanov showed that the two species, together with some other ones synonymized earlier by Blanchard with the species Hemiclepsis tessulata (O. F. Müller), form two well distinguishable and distinct groups. One of the groups comprises Müller's tessulata and some other species synonymized with it earlier, as well as his new species described concurrently therein. For these, Livanov erected the genus Protocorixa. There remained in the other group merely Müller's marginata, becoming the type-species of the genus Hemiclepsis.

For a long time, it was only this one species, shown from the greater part of Europe, known to belong to the genus. True, Ona had in the meantime described a number of new species in the genus, but it was found later that they had to be reassigned to other genera. Thus, Ona described in 1916 the species Hemiclepsis kasimiana (mentioned as H. casimiana in his work in 1917), then in 1917 H. situmusa, in 1925 H. ohuabai, in 1926 H. americana and H. emarginata, and in 1931 H. singularis. It was found that, with the exception of the species

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H. eisenensis and H. abaqul which belong to *Placidella Blanchard*, 1893 (emend. AVITON, 1936), all of these species are to be relegated to the genus *Eulacoeblemma* Viehier, 1879; indeed, it was also discovered that *H. amaragora* is a junior synonym of *H. psolusus* (CAJERS, 1924), known since long. On the other hand, it was proved that *Oke's Placidella japonica*, described in 1932, is a true *Hemicelopsis* taxon. Also, MOORE described in 1984 a new subspecies of the type-species under the name *H. m. marmoreus* from Kashmir. The exact range of the two subspecies is still unknown. For clarification of this problem, one would need the revision of the known specimens deriving from the Oriental Region. In 1934, CHIRLAUARU described from India the third *Hemicelopsis* species, under the name *viridis*. Finally, the youngest species of the genus, *blattar Baugh*, 1960, was recently described also from India.

*Hemicelopsis Vieidovský*, 1884 (emend. Livanow, 1902)


**Diagnosis**: Glossophemid, generally of small, rarely medium size. Body ovate-lancetolate or claviform, opaque or more or less translucent. Head region either dilated into a permanent cephalic sucker, distinct from body, or only slightly expanded failing to form a distinct cephalic sucker. Caudal sucker circulo- or discoid, distinct from body, centrally attached, directed ventrad.
always narrower than maximum body width. Colour and pattern variable, but, except *japonica* Oku., never unicoloured (when alive). Surface either smooth or with varying rows of sensory papillae.

Complete somites triangularly (*u*, *v*, *w*). Number of complete somites varying, between 18 and 21. Total number of annuli between 65 and 72. Eyes two or three pairs. Mouth-opening usually within cephalic sucker (subterminal in *japonica* Oku.). One pair of compact salivary glands. Crop with nine, exceptionally (in *marginata* O. F. MÜLLER) ten or eleven, pairs of lateral gastric caeca, some situated in precelibellar region, last elongated pair directed posteroventrally; intestine with four pairs of simple diverticula. One-half, one or two, postanal annuli. Testes 6, exceptionally (in *marginata* O. F. MÜLLER) 10 pairs. Genital pores separated by two, rarely one and a half, annuli. Atrium small, atrial cavity subelliptical, ductus ejaculatori forming a simple or a coiled preseptal loop. A distinct epididymis not distinguishable. Vagina very short, ovaries simple, elongate, distinct tubes.

**Type-species:** *Hirudo marginata* O. F. MÜLLER, 1774.

**Key to the Species of the Genus Hirudoepis Vejovsky, 1884**

1 (4) Three pairs of eyes, cephalic region only slightly expanded (Figs. 1, 2*): one-half or two postanal annuli (Figs. 6, 8). Total number of annuli 70 or 71. Always six pairs of testes; nine pairs of gastric caeca. Genital pores separated by one and a half, or two, annuli.

* The drawings illustrating the original specific descriptions by *Hirudo*, *Chelidophis*, and *Oku* had mistakenly been made of conserved and more or less contracted specimens, hence the dilation of the cephalic region is too or hardly distinguishable as in the figure taken from the works of the three authors and now published herein, through this characteristic was emphasized pointed out in the text. Unfortunately, I had to occasion to study these three species.
2 (3) Genital pores separated by one and a half annuli ($\rho = X_{1}/X_{12}$, $\varphi = X_{11/2}$). One-half postanal annulus. Annotation: I—II; I, III—IV; 2, V—

2-VIII; 3, XX-V; 2, XXVI—XXVII: 1; total number of annuli 70. Three pairs of eyes (Fig. 1) arranged in two parallel rows in second, third and fourth annuli; second pair of eyes largest. Sensory papillae absent. Colour in preserved specimens light chestnut, but 14 or 15 light brown spots on each side, arranged in longitudinal rows in intermediate positions on middle annulus ($a_{2}$) of each somite from X. Chromatophores, arranged in irregularly distributed spots, present in media-longitudinal field between two rows of intermediate spots. Caudal sucker (Fig. 6) about two-thirds of maximum body width, length: 14—17 mm, width: 2—2.5 mm. Host: unknown. — India

bhiulai Bhat, 1966

5 (2) Genital pores separated by two annuli ($\rho = X_{1}/X_{12}$, $\varphi = X_{11/2}$). Two postanal annuli. Annotation: I: 1, II—IV: 2, V—XXIV: 3, XXV: 2, XXVI—XXVII: 1; total number of annuli 71. Three pairs of eyes (Fig. 5) arranged in two sub-parallel rows in third, fourth and sixth annuli; third pair of eyes largest. Sensory papillae present, minute, uniform, in a transverse line across middle annulus ($a_{2}$) of each somite. Colour characteristic. Dorsal surface with 15 to 25 height yel-green longitudinal subparallel lines. A bright dark green line medio-dorsally; also 5 to 12 lines on both sides, most distinct about middle region of body. All composed of numerous, closely adjacent pigment spots. When well developed, lines distinct and continuous, otherwise appearing as dotted lines. Also ventral surface with a few lighter lines. Caudal sucker (Fig. 8) about one-fourth of maximum body width, length: —8 mm, width: —3.7 mm. Host: frogs (Rana helveticus and R. tigrina). — India

viridi Cheekladriver, 1934

4 (1) Two pairs of eyes; cephalic region dilated into a permanent cephalic sucker, at other times only slightly expanded (Figs. 2, 4—5). Always one postanal annulus (Figs. 7, 9). Total number of annuli 65, 67 and 72 respectively. Sensory papillae in seven longitudinal rows. Testes: 6 or 10 pairs; gastric caeca: 9, 10 or 11 pairs respectively. Genital pores separated by two annuli ($\rho = X_{1}/X_{12}$, $\varphi = X_{11/2}$). (5) Head region only very faintly dilated (Fig. 2). Mouth-opening subtermin-

al, 9 pairs of gastric caeca. Two pairs of eyes on second and third annuli; first pair much smaller and nearest to one another than consider-

ably larger second pair (Fig. 2). Annotation: I—II: 1, III—IV: 2, V—

XXII; 3, XXIII: 2, XXIV: 1 (2), XXV—XXVII: 1; total number of annuli 63 (68). All sensory papillae, appearing on middle annulus ($a_{2}$) of each somite, situated in median, inner and outer paramedian and papillar-

ginal positions. Most prominent papillae located along median and outer parasomedian lines; occasionally only these discernible. Caudal sucker (Fig. 9) small, less than one-third of maximum body width. Unicoloured greyish-green to greyish-brown, preserved pale grey. Length: 18 mm, width: 12 mm. Host: unknown. — Japan

Japonica (Oka, 1932)

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6 (5) Head region dilated into a permanent cephalic sucker, distinct from body. Mouth-opening within cephalic sucker itself. 10 or 11 pairs of gast- ric cæcic. Total number of annuli more than 60.

7 (8) Two pairs of subequal eyes in inner paramedian position, situated upon third and fourth annuli respectively, but second pair always somewhat larger (Fig. 4). Annulation: 1: I. II: III: 2: IV: XXIV: 3: XXV: 2, XXVI: XXVII: 1; total number of annuli 72. Ground color pale bright brown with a greenish or reddish hue of varying intensity; however, thin margins, of body, suckers colourless or transparent; dorsal surface with seven longitudinal rows of lemon yellow spots: four spots in outer paramedian and inner paraparamidal positions on middle annulus (a) of some specimens, further three spots, one dorso-median and two paraparalinal, on third annulus (a) of each specimen. Caudal sucker (Fig. 7) about two-thirds of maximum body width, with an outer and often an inner area of lemon yellow spots, occasionally with reddish-brown radial markings between them. Length: 10—30 mm., width: 2—7 mm. Host: chiefly fishes and amphibia larval, but also certain molluscs. — Polar Arctic Region

marginata marginata (O. F. Müller, 1774)

Catalogue of the Species

Genus: Hemicylops Vézírovsky, 1884 (emend. Linanow, 1902)

Vézírovsky (1884): Sitzungschr. k. g. Böh. Ges. Wis. in Prag, Jahrg. 1883, p. 121 (portion).


