

♀—Longueur maxima, m. 0·140. Largeur maxima, m. 0·0008.

L'animal est d'un brun clair.

♂—Longueur maxima, m. 0·116. Largeur maxima, m. 0·0008.

L'animal est d'un brun noirâtre.

♀—Longueur maxima, m. 0·135. Largeur maxima, m. 0·0008.

L'animal est d'un brun clair.

♂—Longueur maxima, m. 0·114. Largeur maxima, m. 0·0005.

♂ " " m. 0·113. " " m. 0·0005.

L'animal est d'un brun noirâtre.

L'expédition Russe au Tibet (1899-1901) a trouvé le *Parachordodes pustulosus*, Baird, à Entok-gomba dans une source près du fleuve Dza-Eju (Bassin du Fleuve Bleu).

Cette espèce est très répandue en Asie—Desert des Kirgisi—Chine septentrionale, Chingan meridionale, Monts Tjân-schan—Zarkand. (Cf. L. Camerano, "Gordiens nouveaux ou peu connus du Musée Zoologique de l'Acad. Imp. Sc. St. Pétersbourg," *Annuaire du Mus. Zool. Acc. Sc. St. Pétersbourg*, vol. i (1896), p. 117—125, et vol. viii (1903), p. 22—29; "Gordiens du Musée Indien," *Rec. Ind. Mus.*, vol. ii (1908), p. 113, Calcutta.)

On trouve aussi le *Parachordodes pustulosus*, Baird, en Angleterre, en France, en Allemagne, en Italie (L. Camerano, "Monografia dei Gordii," *Mem. R. Accad. Sc. de Torino*, ser. ii, vol. xlvii (1897).

## ROTIFERS AND GASTROTRICHA FROM TIBET.

By F. H. STEWART, M.A., D.Sc., M.B., Capt., I.M.S.

### ROTIFERA.

#### BDELLOIDA.

##### Family PHILODINADÆ.

#### 1. *Philodina erythrophthalma*, Ehrenberg.

*Locality.*—Te-ring Gompa, 14,000 ft., in a small pool among algæ. June.

#### 2. *Philodina roseola*, Ehrenberg.

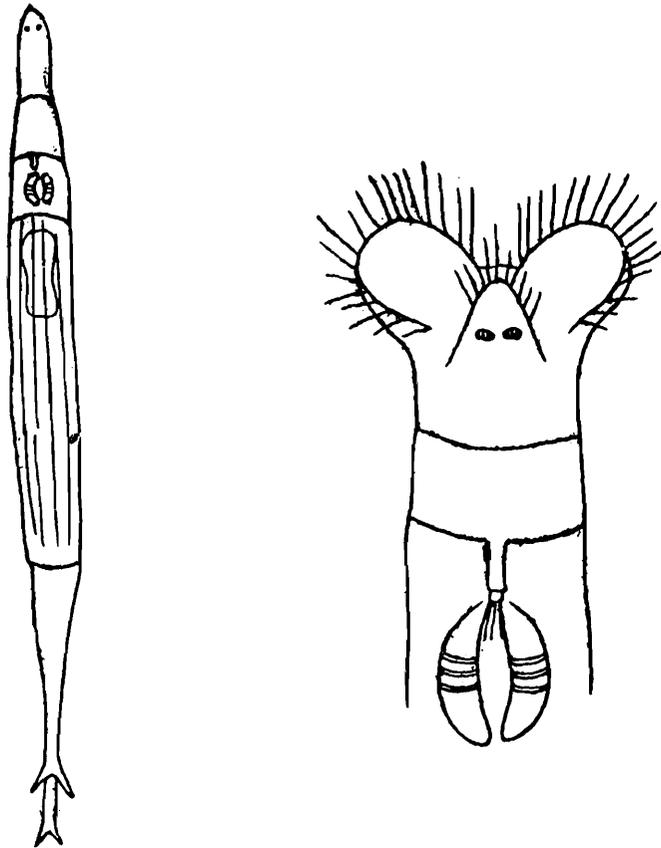
*Locality.*—Gyantse, 13,100 ft. May.

#### 3. *Philodina citrina*, Ehrenberg.

*Locality.*—Gyantse, 13,100 ft. July.

4. *Rotifer tridentatus*, sp. nov. (figs. 1 and 2).

*Specific characters.*—General shape vermiform, slender. Corona divided by a deep and broad sulcus into right and left halves. Eyes circular. The tip of the dorsal column can be partially retracted. There are three circular lines around the neck, from the second of which the antenna arises. The antenna has a minute terminal invertile portion bearing setæ. The body is longitudinally fluted. The foot tapers gradually, with three or four encircling lines.



FIGS. 1 AND 2.

Spurs conical, length .02 mm. There are two long conspicuous pedal glands.

Mastax—Teeth three.

Colourless.

Length .. .. . 5 mm.

*Locality.*—Te-ring Gompa, 14,000 ft., in a small pool among algæ. June.

## PLOÏMA ILLORICATA.

Fam. NOTOMMATADÆ.

5. *Notommata aurita*, Ehrenberg.

*Locality.*—Te-ring Gompa, 14,000 ft. April to September.

6. *Copeus labiatus*, Gosse.

*Locality.*—Chang-lo, 13,100 ft. August.

7. *Proales gibba*, Ehrenberg.

The measurements of this Tibetan form are slightly larger than those given by Gosse, *i.e.*  $\frac{1}{150}$ " in length as compared with  $\frac{1}{300}$ "— $\frac{1}{200}$ "

*Locality.*—Chang-lo, 13,100 ft., in slowly flowing water among algæ. June.

8. *Diglena catellina*, Ehrenberg.

*Locality.*—Te-ring Gompa, 14,000 ft.

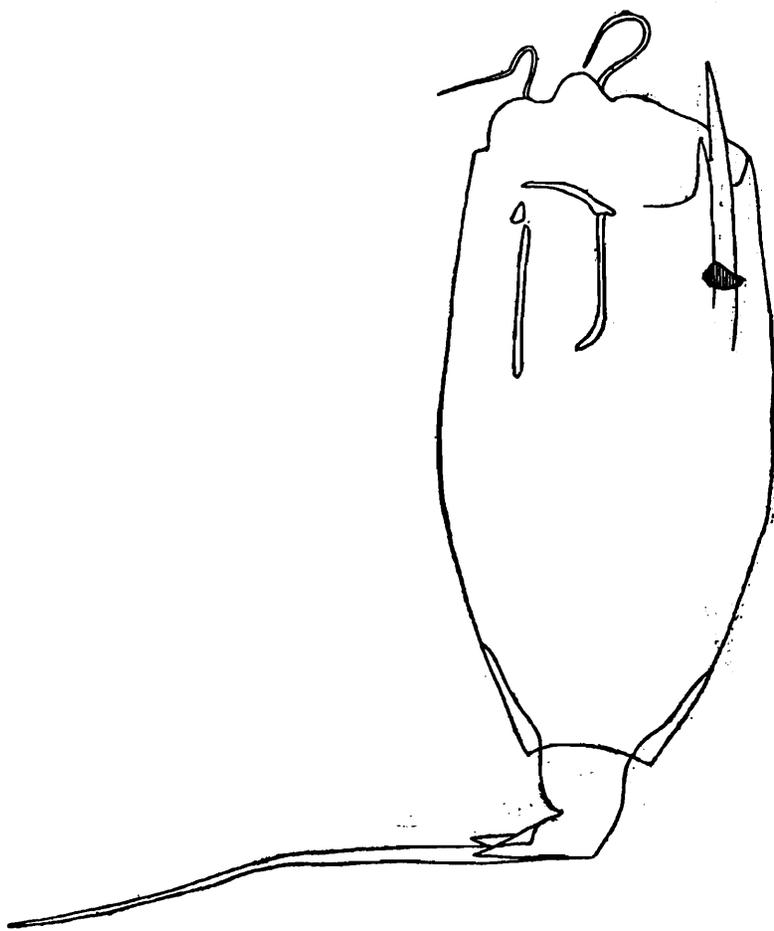


FIG. 3.

## PLOÏMA LORICATA.

## Fam. RATTULIDÆ.

9. *Mastigocerca auchinleckii*, sp. nov. (fig. 3).

*Specific characters.*—Body fusiform. Head truncate. Occipital margin of lorica armed with two unequal spines of which the longer

is median, the shorter situated to the left. The lorica is ridged in its anterior quarter in continuation of the median spine. Toe  $\frac{2}{3}$  of length of body and head; two minute substyles at the base. Two large flagellæ in the ventral half of the corona. Right malleus absent.

Length—Body and head	·27 mm. ( $\frac{1}{90}$ " )
Toe	·17 mm. ( $\frac{1}{80}$ " )
Maximum breadth	.. ·1 mm.

*Locality*.—Se-chen, 13,000 ft., in small marshy pools. March and April.

This form closely resembles *M. bicornis*, Ehrenberg. It differs from it in the following three points: (1) The short spine is to the left, not to the right of the mid-line. (2) The lorica is ridged. (3) There is a pair of minute substyles.

#### Fam. DINOCHARIDÆ.

##### 10. *Dinocharis pocillum*, Ehrenberg.

*Locality*.—Chang-lo, 13,100 ft. July.

##### 11. *Scaridium longicaudum*, Ehrenberg.

*Locality*.—Gyantse, 13,100 ft.

#### Fam. SALPINADÆ.

##### 12. *Diaschiza exigua*, Gosse.

The form found in Tibet is somewhat larger than that described by Gosse, as the head and body measure  $\frac{1}{200}$ " in length as compared with  $\frac{1}{325}$ " of the English form. It does not, however, correspond with the larger *D. taurocephalus*, Hilgendorff,<sup>1</sup> described from New Zealand, as the head is not so large in comparison with the body as in that form.

*Locality*.—Chang-lo, 13,100 ft. In a small pool off an irrigation channel among algæ. August.

##### 13. *Diaschiza semiaperta*, Gosse.

*Locality*.—Te-ring Gompa, 14,000 ft.

##### 14. *Salpina shapé*, sp. nov. (fig. 4).

This species closely resembles *S. brevispina*, Ehrenberg, differing from it apparently only in the following two points: (1) it is double the length of *S. brevispina*; (2) it is devoid of lumbar spines.

<sup>1</sup> Hilgendorff, *Trans. and Proc. New Zealand Institute*, vol. xxxi, p. 107.

It differs from *S. similis*, Stokes,<sup>1</sup> in (1) the fact that the pectoral spines do not curve toward the dorsum; (2) the absence of lumbar spines.

Length of head and body.	.25 mm.
„ of foot and toes	.13 mm.

*Locality*.—Te-ring Gompa, 14,000 ft. May.

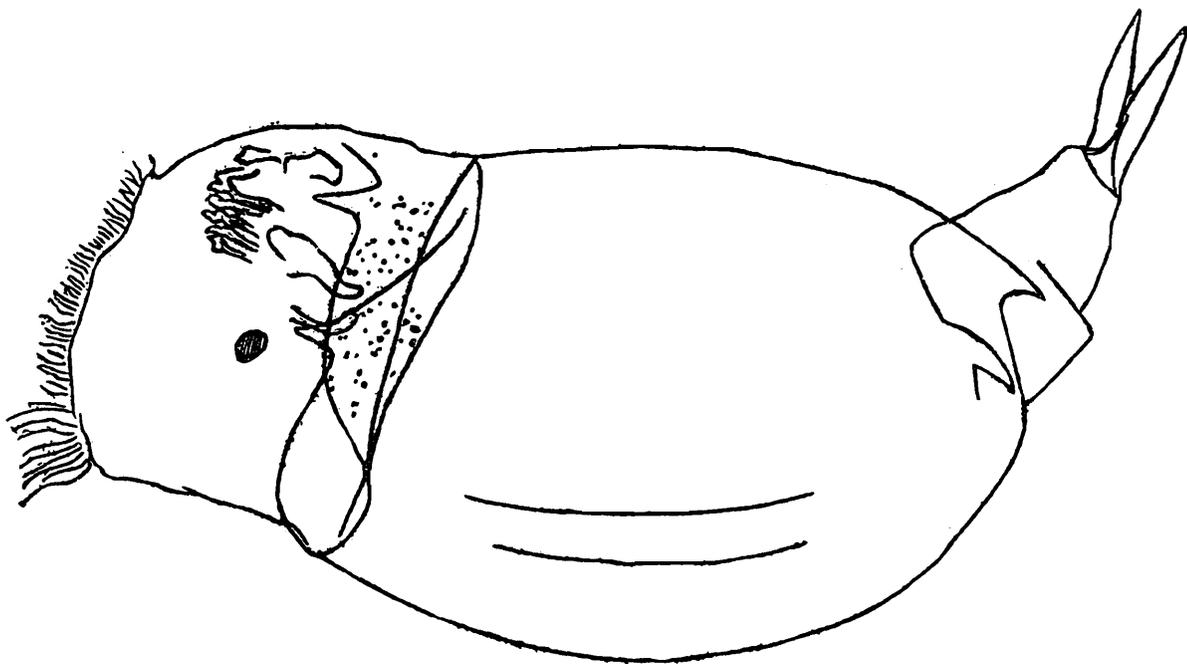


FIG. 4.

Family EUCHLANIDÆ.

15. *Euchlanis dilatata*, Ehrenberg.

*Locality*.—Gobshi, 13,100 ft., in a small pool among algæ.

16. *Cathypna amban*, sp. nov. (fig. 5).

*Specific characters*.—Lorica of two unequal plates, both roughly elliptical but truncated at the anterior end. The ventral plate compared with the dorsal is broader at the anterior extremity, and is shorter, as it ends in front of the foot which projects ventrally, whereas the dorsal plate covers the origin of the foot. The occipital edge of the lorica is straight, the pectoral somewhat crescentic. There is no incisura for the foot in either plate. The toes are one-shouldered.

Length	.17 mm. ( $\frac{1}{40}$ " )
Maximum breadth	.11 mm.

*Locality*.—Chang-lo, 13,100 ft. July.

<sup>1</sup> Stokes, *Ann. Mag. Nat. Hist.*, 1896, p. 17.

This form resembles *C. luna*, Ehrenberg, but differs from it in the following points: (1) the dorsal plate of the lorica is narrower in front than the ventral; (2) the occipital edge is not inangulated; (3) the horns of the pectoral edge are not so prominent; (4) there is no posterior inangulation of the dorsal plate.

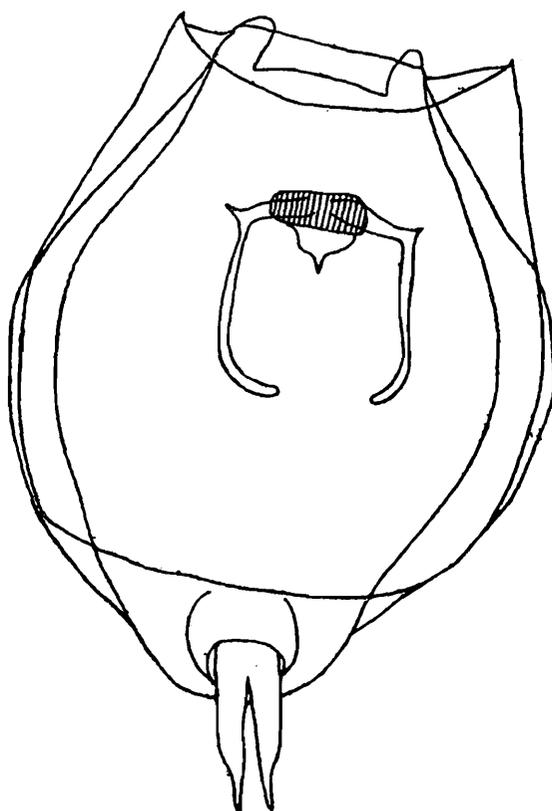


FIG. 5.

## Fam. ANURÆIDÆ.

17. *Notholca scaphula*, sp. nov. (fig. 6).

*Specific characters*.—Shape viewed from the dorsum, broad oval truncated at the head; viewed from the side it is horn-shaped. Lorica of two dissimilar plates, the dorsal broader than the ventral, projecting in two thin wing-like lateral expansions beyond the latter. Occipital margin with six spines, the two central sharpest and highest, sublateral lowest. Pectoral margin with a deep rounded midventral incisura bounded by two flat spines. Dorsal plate 20—24 striæ; ventral plate 10 striæ.

*Corona*.—The outer ring of cilia passes ventrally into the incisura of the pectoral edge, while dorsally it reaches well in front of the tips of the spines. Inside the ring are three dorsal projections bearing large cilia.

*Trophi*—Teeth, three.

Eye single, immediately anterior to the mastax.



·022 mm. As my specimen, however, is mounted on its side, there is doubtless some foreshortening due to the lateral curve of the spur.

*Habitat.*—Te-ring Gompa, 14,000 feet. 17th May, 1907.

These animals were by no means of frequent occurrence. I believe that I did not find more than three or four specimens in six months' work.

*Lepidoderma squammatum* has been recorded from Germany, France, England, Austria and North America (Zelenka).

*Technique.*—For the two groups of Rotifers and Gastrotricha the only form of technique employed was that of Rousselet—cocaine, osmic acid and formalin (*Journ. Queckett Micr. Club*, vol. v, p. 1), asphalt being used as a cement. This method gave excellent results for observation within three or four months, and about thirty per cent. of the specimens were found to be in very fair condition after fifteen months, in some cases in such a good state of preservation as to repay examination with a  $\frac{1}{2}$ -inch oil immersion lens. When it is considered that the slides had made a road journey of two hundred miles, and had endured extremes of climate from the cold of the Tibetan passes in mid-winter to the full heat of the hot weather in Calcutta, the method may be regarded as having been tested under somewhat adverse conditions, and to have come well out of the test.

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## ENTOMOSTRACA ET HYDRACHNIDAE E TIBET.

[Cum Figuris 9 in Textu.]

PROF. E. DADAY DE DEES.

Illustr. Dom. F. H. Stewart anno 1907 in Tibet ex aliquot localitatibus inter alia etiam materiam planctonicam collegii quam Illustr. Dom. N. Annandale, Superintendens Musei Indian Historiae Naturalis studiendi causa Entomostracorum Hydrachnidarumque ad me misit. Commissionem hanc honorabilem, literatura datis de Entomostracis Hydrachnidisque in Tibet occurrentibus hucusque exceptis ab Illustr. D. G. O. Sars publicatis carente, libenter accepi resultatemque studii mei in subsequentibus breviter conscribere necessarium esse putavi. Notandum est, collectionem Dom. F. H. Stewarti in 17 vitris et e 4 localitatibus species 21 infra partim enumeratas, partim descriptas continere.

Localitates materiae planctonicae examinatae sunt sequentes :—

1. *Mang-tsa*, altitudine 4419·5 mtr. a superficie maris; anno 1907, 2 Julii—2 vitra.