

LIST OF THE AQUATIC ANIMALS HITHERTO RECORDED FROM THE PROVINCES OF TSANG AND Ü¹ IN CENTRAL TIBET, WITH A TABLE SHOWING THEIR GEOGRAPHICAL DISTRIBUTION.

By F. H. STEWART, M.A., D.Sc., M.B., *Captain, Indian Medical Service.*

The animals included in the following list fall into the following groups:—

1. Hydroidea.
2. Turbellaria.
3. Nematoda.
4. Gordiidea.
5. Rotifera.
6. Gastrotricha.
7. Oligochaeta.
8. Hirudinea.²
9. Entomostraca.
10. Hydrachnida.
11. Mollusca.
12. Pisces.
13. Amphibia.

| | Cosmopolitan. | Palaeartic. | Oriental. | Not previously described. |
|---|---|-------------|-----------|---------------------------|
| Hydroidea— | | | | |
| Hydra fusca, Linn. (= Hydra oligactis, Pall.) | { Tsang Europe Lahore N. America } } | .. | .. | .. |
| Turbellaria— | | | | |
| Stenostomum, sp. .. | .. | Tsang | .. | ? |
| Dalyellia, sp. .. | .. | Tsang | .. | ? |
| Castrada, sp. .. | .. | Tsang | .. | ? |

¹ The province of Tsang lies roughly north of Sikhim and Nepal and includes the district from the Tang-la to Gyantse and Shigatse. The province of Ü lies to the east of Tsang and includes Lhasa.

² The report on the Hirudinea has not yet been received.

| | Cosmopolitan. | Palearctic. | Oriental. | Not previously described. |
|---|---|----------------------------|-----------|---------------------------|
| Mesostoma craci, O. Schmidt. | .. | { Europe Tsang } | .. | .. |
| Sorocelis, sp. | | | | |
| Nematoda— Dorylaimus, sp. | .. | .. | .. | ? |
| Gordiidea— Parachordodes pustulosus, Baird. | .. | { Europe Central Asia } | .. | .. |
| Rotifera— Philodina erythrophthalma, Ehrenb. | { Europe Natal Tsang } | .. | .. | .. |
| Philodina roseola, Ehrenb. | { Europe Turkestan Tsang Paraguay Natal New Guinea } | .. | .. | .. |
| Philodina citrina, Ehrenb. | { Darjiling Calcutta Tsang Cape Colony } | .. | .. | .. |
| Rotifer tridentatus, Stewart. | .. | Tsang | .. | Yes. |
| Notommata aurita, Ehrenb. | { Europe Tsang Cape Colony } | .. | .. | .. |
| Copeus labiatus, Gosse | .. | { England Tsang } | .. | .. |
| Proales gibba, Ehrenb. | .. | { England Tsang } | .. | .. |
| Diglena catellina, Ehrenb. | { England Tsang Paraguay } | .. | .. | .. |
| Mastigocerca auchinleckii, Stewart. | .. | Tsang | .. | Yes. |
| Dinocharis pocillum, Ehrenb. | .. | Europe | .. | .. |
| Scaridium longicaudum, Ehrenb. | { Europe S. Africa Paraguay Calcutta } | .. | .. | .. |
| Diaschiza exigua, Gosse. | { England Rhodesia Tsang } | .. | .. | .. |
| Diaschiza semiaperta, Gosse. | { Europe New Zealand Tsang } | .. | .. | .. |
| Salpina shapé, Stewart | .. | Tsang | .. | Yes. |
| Euchlanis dilatata, Ehrenb. | { Europe N. Asia Ceylon Natal } | .. | .. | .. |
| Cathypna ambana, Stewart. | .. | Tsang | .. | Yes. |
| Notholca scaphula, Stewart. | .. | Tsang | .. | Yes. |

| | Cosmopolitan. | Palearctic. | Oriental. | Not previously described. |
|---------------------------------------|-------------------------------------|--|-----------|---------------------------|
| Gastrotricha— | | | | |
| Lepidoderma squamatum, F. Dujardin | { Europe Tsang New Jersey } | .. | .. | .. |
| Oligochaeta— | | | | |
| Aelosoma hemprichii, Ehrenb. | .. | { Europe N. Africa Tsang } | .. | .. |
| Chaetogaster orientalis, Steph. | .. | { Lahore Tsang } | .. | .. |
| Nais, sp. | .. | .. | .. | ? |
| Fredericia stewarti, Steph. | .. | Tsang | .. | Yes. |
| Limnodrilus, sp. | .. | .. | .. | ? |
| Entomostraca— | | | | |
| Cyclops viridis (Jur.) | .. | { N. Europe Siberia Turkestan Tsang } | .. | .. |
| Cyclops strenuus, Fisch. | { Europe N. Asia N. America } | .. | .. | .. |
| Cyclops serrulatus, Fisch. | Yes .. | .. | .. | .. |
| Diaptomus tibetanus, von Daday. | .. | Tsang | .. | Yes. |
| Diaptomus paulseni, G. O. Sars. | .. | { Pamir Tsang } | .. | .. |
| Chydorus sphaericus (O. F. M.). | Yes .. | .. | .. | .. |
| Dunhevedia crassa, King. | Yes .. | .. | .. | .. |
| Aulana guttata, G. O. Sars. | Yes .. | .. | .. | .. |
| Euryalona annandalei, von Daday. | .. | Tsang | .. | Yes. |
| Macrothrix hirsuticornis, Brady-Norm. | .. | { N. Europe Mongolia Tsang } | .. | .. |
| Moina rectirostris (Jur.) | .. | N. America | .. | .. |
| Ceriodaphnia pulchella, G. O. Sars. | .. | { N. Europe Siberia Turkestan Tsang } | .. | .. |
| Scapholeberis mucronata (O.F.M.). | { Ceylon Siberia Tsang } | .. | .. | .. |
| Simocephalus elizabethae, King. | Yes .. | .. | .. | .. |
| Daphnia longispina (O. F. M.). | .. | { N. Europe Turkestan Tsang } | .. | .. |
| Eucypris tibetana, von Daday. | .. | Tsang | .. | Yes. |
| Eucypris minuta, von Daday. | .. | Tsang | .. | Yes. |
| Herpetocypris stewarti, von Daday. | .. | Tsang | .. | Yes |

| | Cosmopolitan. | Palaeartic. | Oriental. | Not previously described. |
|---|---------------|--|-----------------|---------------------------|
| Herpetocypris smaragdea, von Daday. | .. | Tsang .. | .. | Yes. |
| Potamocypris stewarti, von Daday. | .. | Tsang .. | .. | Yes. |
| Estheria davidi, Simon | .. | { E. Mongolia Tsang } | .. | .. |
| Branchinecta orientalis, G. O. Sars. } | .. | { E Europe Pamirs E. Mongolia Tsang } | .. | .. |
| Hydrachnida— Eulais tibetana, von Daday. | .. | Tsang .. | .. | Yes. |
| Mollusca— Planorbis saigonensis, Crosse and Fischer. } | .. | { Japan Tsang } | E. Asia Java | .. |
| Planorbis stewarti, German. | .. | Tsang .. | .. | Yes. |
| Planorbis himalayensis, Hutton. } | .. | { Himalaya Tsang } | .. | .. |
| Planorbis barrakporensis, Clessin. | .. | Tsang .. | India .. | .. |
| Limnaea hookeri, Reeve | .. | Tsang .. | .. | Yes. |
| Limnaea bowelli, Preston. | .. | Tsang .. | .. | Yes. |
| Agriolimax tibetanus, Godwin Austen. | .. | Tsang .. | .. | Yes. |
| Pisidium stewarti, Preston. | .. | Tsang .. | .. | Yes. |
| Pisces— Parexostoma stoliczkae (Day). } | .. | { Leh Ladak Tsang } | .. | .. |
| Parexostoma maculatum. Regan. | .. | Tsang & Ü .. | .. | .. |
| Nemachilus stoliczkae, Day. } | .. | { Leh Ladak Tsang Yarkand } | .. | .. |
| Nemachilus lhasae, Regan. | .. | Ü .. | .. | .. |
| Nemachilus tibetanus, Regan. | .. | Tsang & Ü .. | .. | .. |
| Gymnocypris waddellii, Regan. | .. | Tsang & Ü .. | .. | .. |
| Oreinus baileyi, Lloyd | .. | Tsang .. | .. | Yes |
| Ptychobarbus conirostris, Steind. } | .. | { Leh Ladak Tsang } | .. | .. |
| Schizopygopsis stoliczkae, Steind. } | .. | { Leh Ladak Pamirs Tsang } | .. | .. |
| Schizopygopsis young-husbandi, Regan. | .. | Tsang & Ü .. | .. | .. |

| | Cosmopolitan. | Palaeartic. | Oriental. | Not previously described. |
|--|---------------|-----------------|-----------|---------------------------|
| Gymnocypris (Schizopygopsis) stewartii, Lloyd. | .. | Tsang .. | .. | Yes. |
| Schizothorax o'connori, Lloyd. | .. | Tsang .. | .. | Yes. |
| Schizothorax dipogon, Regan. | .. | Tsang & Ü .. | .. | .. |
| Schizothorax waltoni, Regan. | .. | Tsang & Ü .. | .. | .. |
| Schizothorax macropogon, Regan. | .. | Tsang & Ü .. | .. | .. |
| Amphibia— Rana pleskii, Günther | .. | Central Asia .. | .. | .. |
| Number of species | 18 | 57 | 2 | 21 |

It will be noticed in the above list that of those species which are not cosmopolitan all, with two exceptions, are Palaeartic. These two exceptions, *Planorbis saigonensis* and *P. barrakporensis*, are found in the Oriental as well as in the Palaeartic region.

Papers from which the above list is compiled.

1. Stewart, Annandale, de Man, Camerano, von Daday and Lloyd. Report on a collection of aquatic animals made in Tibet by Captain F. H. Stewart, I.M.S., during the year 1907. Part I. Introduction, Coelenterates, Nematomorpha, Rotifers and Gastrotricha, Entomostraca, Arachnids, Fish (Systematic) and Batrachia. *Rec. Ind. Mus.*, vol. ii, p. 309 (1908).
2. Stephenson, Preston, Germain and Stewart. Ditto. Part II. Oligochaete Worms, Mollusca and Fish (Geographical). *Rec. Ind. Mus.*, vol. iii, p. 105 (1909).
3. Meixner and Muth. Ditto. Part III. Turbellaria. *Rec. Ind. Mus.*, vol. vi, p. 57 (1911).
4. Tate Regan. Descriptions of five new Cyprinid fishes from Lhasa, Tibet. *Ann. Mag. Nat. Hist.* (7), vol. xv, p. 185 (1905).

5. Tate Regan Descriptions of two new Cyprinid fishes from Tibet.
Ann. Mag. Nat. Hist. (7), vol. xv, p. 300 (1905).
6. von Daday .. Monographie systématique des Phyllopo-
des anostracés.
Ann. Sci. nat., Zool. (9), t. xi, p. 158 (1910).