The natives of the valley say that the large fish migrate down into the Tsang-po in the autumn and return in spring. The first fish of any size which I obtained in spring were all *Schizopygopsis stoliczkæ* or *Ptychobarbus conirostris*. The other species appeared later.

In the Gyantse valley, as elsewhere in Tibet, there is an elaborate system of irrigation channels branching off from the rivers. During autumn these abound with young fish, and as in November most of these channels are allowed to run dry, a great loss of young life must result.

Two of the best collecting places in the valley are Te-ring Gompa and High Hill Gompa, two monasteries situated on the hill faces several thousand feet above the valley. A spring arises near each, and Turbellarians, Amphipods, Oligochætes, Rotifers and frogs abound among the moss, algæ and stones.

Through the courtesy of the Director General of Observatories I am able to give the following table showing the maximum and minimum temperatures recorded each month during 1907 in Gyantse.

GYANTSE, 1907.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Maximum temperature in degrees Fahr.	43·3	39·5	46·3	57·2	65·6	73·0	74·8	74·5	73·4	66·4	54·6	43·4	59·3
Minimum temperature.	8·7	8·8	13·8	27·6	32·9	42·7	47·6	44·4	43·1	32·3	12·3	4·0	26·5

OBSERVATIONS ON SPECIMENS OF *HYDRA* FROM TIBET, WITH NOTES ON THE DISTRIBUTION OF THE GENUS IN ASIA.

By N. ANNANDALE, *D.Sc., Superintendent, Indian Museum.*

Hydra fusca, Linn.

? H. rhætica, *Asper, Zool. Anz.*, 1880, p. 205.

Several specimens from among weeds in the Rham-Tso (lake) at an altitude of about 15,000 feet; taken in August, 1907 (Capt. F. H. Stewart).

The specimens, which are much contracted and have suffered in transit, have a pale orange-brown colour in spirit; but Capt. Stewart tells me that they were red in life. Some of them have five and some six tentacles; no gonads are present, but one individual bears a large bud with five well-developed tentacles. The bud arises very near the base of the parent polyp. The larger nematocysts, which are not numerous on the tentacles and very scarce on the body, measure 0·0135 mm. by 0·0108 mm.; their threads appear to be short and rather stout and the cnidocils are short and inconspicuous.

In diagnosing such specimens it is impossible to come to a very definite conclusion. The species they represent resembles Asper's form, which was found in a Swiss Alpine lake, in its red colour and in the number of its tentacles. Whether *H rhætica* is specifically distinct from *H. fusca*, Linn., may, however, be doubted. In any case it appears to be distinct from the only other red form that has received a name, *viz.*, *H. rubra*, Lewes, which is stated to be a free-living form only found at considerable depths (Roux, *Ann. Biol. Lacustre*, ii, p. 266, 1907).

I take this opportunity to add some remarks on the distribution of *Hydra* in Asia, a certain amount of additional information having become available since I wrote my two papers on the Bengal species (*Mem. Asiat. Soc. Bengal*, i, 239, 1906, and *Journ. Asiat. Soc. Beng.*, 1907, p. 27).

I am indebted to Major J. Stephenson, I.M.S., Professor of Biology, Government College, Lahore, for several specimens taken by him in a small pond in that city. They are well preserved and have, even in spirit, their tentacles considerably longer than their bodies. Several of them bear buds, but no gonads are present. The larger nematocysts, which are far less abundant, especially on the body, than those of *H. orientalis*, measure 0·0135 mm. by 0·0081 mm. and are therefore smaller than those of the Bengal form, which measure 0·0189 mm. by 0·190 mm.; their threads also appear to be shorter and stouter and their cnidocils to be less conspicuous. The colour in spirit is a dirty white. I think that these specimens are identical with the form called *Hydra fusca* by Linné.

Dr. A. Powell, of the Grant College, Bombay, has found a *Hydra* at Bombay, which differs in its biology from my species, while Capt. H. J. Walton, I.M.S., writes that he has recently taken specimens at Bulandshahr in the United Provinces. These, he says, do not altogether agree with my description of *H. orientalis*, from which it is very probable that both they and the Bombay form are distinct.

During a recent visit to Burma (March, 1908)) I found a *Hydra*, apparently identical with specimens from Calcutta, common in a pond at Mandalay; while in a small pool near Moulmein, in Lower Burma, I took a single polyp, which was of an "oil-green" colour and had eight tentacles. None of these specimens showed any sign of sexual activity, but several of the Mandalay examples bore buds. The nematocysts of all agreed with those of *H. orientalis*, to which

I therefore assign even the Moulmein specimen, in spite of its eight tentacles. Such identifications, however, no gonads being present, can only be provisional.

One of my examples from Mandalay exhibited a very remarkable peculiarity, which can hardly have been more than an abnormality. The specimen consists of a parent polyp with four buds. The parent polyp had no trace of tentacles, although possessed of a mouth; but on one of the buds five well-developed tentacles were present, while on the others they had commenced to appear. Other parent polyps from the same pond had normal tentacles.

The following table embodies all that appears to be known as regards the distribution of *Hydra* in Asia:—

TURKESTAN AND SIBERIA	.? *Hydra fusca*, Linn., E. v. Daday, *Zool. Jahrb.*, syst. Abth. xix, p. 480, 1904.
TIBET	.*Hydra fusca*, Linn. (*vide supra*).
INDIA	.*Hydra orientalis*, Annand. (Calcutta, North and East Bengal, Chota Nagpur, Upper and Lower Burma). *Hydra*, spp. (Bombay, United Provinces). *Hydra fusca*, Linn. (Punjab).
CEYLON	? *Hydra orientalis*, Annand. (Colombo and Peredeniya), Willey, *Spolia Zeylanica*, iv, p. 185, 1907.
MALAYA	.? *Hydra orientalis*, Annand. (Penang).
TONQUIN	.? *Hydra fusca*, Linn., Richard, *Mém. Soc. zool. France*, vii, p. 237, 1894.

Although a considerable number of records of the occurrence of *Hydra* in the East now exist, the absence of gonads makes a definite specific diagnosis at present impossible in most cases; but no form answering to the descriptions of *Hydra viridis* has yet been found in Asia, while the production of eggs has only been observed in the case of *Hydra orientalis*, which seldom produces them at all and sometimes produces them in a degenerate condition [1] possibly due to their not having been fertilized. This form, as I have pointed out elsewhere (*Journ. Asiat. Soc. Bengal*, 1907, p. 28), is very closely related to the Palæarctic species *H. grisea*, Linn. (= *H. oligactis*, Pallas), of which it is possibly a tropical race.

[1] *Cf.* Weltner, *Archiv f. Naturgesch.*, 73 Jahr. (1), p. 475, 1908.