

ANNELIDS.

NOTES ON THE REARING OF LEECHES IN MAWAI, BARA BANKI DISTRICT, UNITED PROVINCES.—[The leech to which the following notes refer has been identified by Mr. W. A. Harding as *Limnatis (Poecilobdella) granulosa* (Sav.)]

In this part of the country the leeches are abundantly found in ponds, streams, *jhils* and marshes but seldom in rivers.

The class of people who rear leeches are called "Chohra" and this occupation is the sole means of their livelihood. They use them for medicinal purposes; whenever any part of the human body is inflamed or its blood becomes impure the leeches are made use of to suck out the blood from the diseased part. This remedy is also prescribed with success in slight cases of blood-poisoning by native physicians.

The breeding season commences in April or May just before the beginning of the rains. The breeders pick out a few good adult specimens of leeches and put them in a new earthen pot with some pieces of a sort of black clay (called here 'hair-cleaning clay') with which people generally clean their hair, and sprinkle some water just sufficient to keep them wet. This vessel is closed and put away in a secluded corner of the house where there is no likelihood of any disturbance to the leeches. The breeders are of opinion that they do not form cocoons even if a man's shadow falls over them. This is merely putting stress on the fact that the leeches will not form cocoons if they are disturbed either by the footsteps of man or other accident. To avoid this people in certain places take the further precaution of burying the vessel containing them underground. Every alternate day the vessel is opened and some water is poured in to keep the clay wet.

In the course of a period which varies from a fortnight to a month the breeders find inside the vessel some foamy little whitish masses emitted by the leeches which within two or three days develop into oval-shaped cocoons, soft and partially transparent. As the cocoons get stiff they are carefully picked up and put into closed cups made of the clay already in the vessel. This process is kept up till all the soft cocoons have become hard and have been removed. The cups are changed every alternate day for a fortnight, when it is perceived that the young ones have developed within them. Then the shells are broken up by the breeders themselves in order to help out the weak ones which otherwise would die within the shell, not being strong enough to come out by themselves. Each cocoon contains five or six young ones.

The young ones are kept in fresh water which is changed morning and evening. This method of changing the water twice a day helps them to grow speedily. When the young ones grow sufficiently old to be able to suck blood (which is at once found out by putting a hand in the water as they rush to catch it) they are taken out and placed on some portion of his own body by the breeder, and after they have taken in a little blood they are removed and put back in the water. They are not allowed to

suck blood to their satisfaction, for if they do so they will immediately die. This process is repeated every fortnight until they grow old enough for the purpose for which they are reared. Then this new batch of leeches is divided into two lots, (1) that which is to be used for medicine and (2) that which is reserved for breeding. The latter are called 'seed leeches' and are kept in water which is regularly changed at intervals until the next breeding season sets in, during this period no blood is given to them. They are never used for money-making, for leeches once used for such a purpose are believed to lose their power of breeding.

Whenever the leeches are prescribed for medicine the *Chohra* (breeder) is sent for. He brings with him only those leeches that have not been used for two or three weeks and applies some of them to the intended part. The leeches at once begin to suck in blood with avidity, but if the blood has become mixed with pus they will immediately drop down. If it is not they will suck on till they fall down filled with impure blood, when they seem to lose all energy and look very dull and inactive. The breeder then takes these leeches one by one and pricks it with a needle just near the mouth on the middle line on the back and slowly squeezes out the blood commencing from the tail to the opening made by the needle. This, however, does not kill the leeches. When the trial is over the leeches are thoroughly rubbed by the hands which probably relieves them to some extent of the strain caused by squeezing, and restored to the water for future use.

The breeders are of opinion that the wild leeches do not breed in captivity until perhaps long used to it and it is even difficult to confine them unless they are carefully packed. Their bite when used for medicine is unbearable to the patient. This is not the case with the domesticated ones, the bite of which is comparatively less painful, much like that of an ant.

The leeches can be kept alive for many years if the water in which they are kept is occasionally changed, but those that have been used for medicine can hardly live for more than a year.

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INSECTS.

THE HABITS OF SOME TIGER-BEETLES FROM ORISSA.—Many species of tiger-beetles, though they may have a wide geographical distribution, are curiously particular in their choice of habitat. A well-known instance of this is *Cicindela biramosa*, Fabr., which lives only on the seashore, a fact sufficiently noticeable at such a place as Puri on the Orissa coast, but much more so near Balyghai, a few miles further north. Here the sandy beach on which alone this species lives slopes sharply up for a distance of perhaps twenty or thirty yards and then ends abruptly in a low wall of sand evidently produced by the action of high tides.¹ This wall forms the outer-

¹ I have only visited the place once as yet; this was towards the end of August 1911.