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### 3. On a Peculiar Mode of Locomotion of a Clam, *Meretrix meretrix* L.

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eingeg. 18. Dezember 1912.

A kind of clam, generally known by the name of "Hamaguri", literally meaning the sea-chestnut is identified as *Meretrix meretrix* L. It is a hardy bivalve inhabiting sandy flats, especially abundant in a bay, near the mouth of a river and is one of the very useful shellfish, delicate in flavour. It is however difficult to be reared in a limited area, because it migrates rather extensively.

Some years before I was told by a friend of mine that many fishermen believe in the floating of the clam and its drifting to and settling in the deeper, offshore part of the sea. Many times I have tried to observe it myself but without effect. Last spring I have fortunately succeeded to confirm it through the kindness of Mr. Saichi Miyauchi, who told me that it would be tedious to wait in a boat simply to see the drifting of the clam and he invited me to try the angling for *Sillago*, a very interesting and curious mode of angling. Early on the misty morning of May 18<sup>th</sup> a fisherman, Mr. Miyauchi and myself were seated respectively on a very high wooden seat, temporarily put into water from our boat near the mouth of River Sumida. The benefit of these high seats out of water is not to frighten away the sensitive fish, which is often scared even by the noise of waves beating against the boat. Later we observed some trings of mucus drifting in the muddy ebbing water. They are said to be the token of floating clams, so that we stopped angling and were received into our boat again, taking in the seats one by one. At that time we found a small clam, 46 mm long hanging down from one of the cross-bars of a seat with a string of mucus of about 60 cm long and 1 cm thick, colorless, transparent and homogeneous. The cross-bar was separated from the bottom about 20 cm and the water where the seat was located was about one metre deep, being near the margin of a small channel. On that day we found the floating clam no more, but from the clam that hung from the seat we can fairly conjecture a very peculiar mode of locomotion, probably not yet known to science. Fishermen call this remarkable mode of locomotion "nukeru" or the slipping. The position of the bivalve suspended in water is nearly the same as in the sea-bottom. The shell is almost

closed, with its posterior corner situated at the dorsal anterior position, and creaves the water with its sharp, lower margin.

We suppose that clams come near the surface of sea-bottom before slipping and secrete mucus which being lighter than the sea-water is carried obliquely upward by tide as it is secreted. When the mucous string is secreted long enough to balance the weight of clam in water, the clam slips out of the bottom and is carried by current rather quickly. The clam seems not to float high in water, but only a little above the bottom.

Late in spring *Meretrix meretrix* secretes mucus rather profusely, and when the weather is calm and warm the mollusc seems to move towards the deeper part of water at the time of the spring tide by means of mucous strings. It is told that these mucous strings are sometimes so abundant that anglers are annoyed great deal from these strings twisting round their lines. This migration takes place perhaps to seek water of mild temperature, avoiding severe heat of summer in a shallow water. Slipping clams are mostly observed near the place where little water remains at the time of the spring tide.

The drifting or slipping clams when caught by any obstacle seem to settle there, at least for a while. Thus we frequently find many clams crowded at the root of fagots erected for the culture of oyster or *Porphyra*, a kind of sea-weed. We never hear or observe clams moving towards the shore by this mode of locomotion. Recently I have heard from an old fisherman in Kusatsu near Hiroshima that fishermen of the village now cultivate this clam by building a fence of about 30 cm at the deeper boundary of the culture-ground. The fence obstructs the migrating clams, but fishermen are obliged often to collect the slipped molluscs at the root of the fence and to distribute them again in the culture-ground.

Tokyo, Nov. 29, 1912.

#### 4. Über die Herkunft von Sporn und Kastanie der Equidae.

Von P. E. Keuchenius, Utrecht.

eingeg. 24. Dezember 1912.

Die Ansichten Hintzes (Zool. Anz. Bd. 35 Nr. 12—13, S. 372) über die Herkunft von Sporn und Kastanien der Equidae haben Dr. H. A. Vermeulen, Prosektor am Anatomischen Institut der Tierarzneischule zu Utrecht, veranlaßt, die Ontogenie dieser Hornbildungen des Pferdes zu untersuchen (Tijdschrift voor Veeartsenijkunde 3<sup>e</sup> Abl. Febr. 1911).

Vermeulen gibt in seiner Abhandlung eine Beschreibung der von

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