

Sierra Leone there is a native pustular disease called *craw-craw*, which is a species of itch breaking into open sores, and very troublesome to cure. May not the above insect be the cause of this intractable local disease, in the same manner as the *Acarus* is of the common itch?—*Editor.*]

XI.—ON A PECULIAR SUBSTANCE OCCURRING ON THE HUMAN TEETH.

By Frederick Buehlmann, Candidate of Medicine, Berne.

IN investigating the so-termed molecules of saliva of Henle, I was struck by a peculiar kind of thread-like bodies placed on a granular mass which displays itself, mixed with the epithelium of the mouth, and with tartar, in great abundance on the teeth. I am not aware that any one, with the exception of Leuwenhoeck (*Opp. omnia Lugd. Batav.*, 1722, Tom. II, p. 40), had ever mentioned them; I was therefore induced to examine them with the more attention, and discovered as follows.

There exist on the teeth of all adults, especially on those on which deposits of tartar occur, or which have a tendency to form such deposits, forms which consist of a great number of thread-like bodies, and which occur of three different kinds.

1. There are on a granular yellow substance of circular or elongated form, beautiful fibres, which sprout from this parent substance like plants from a bulb. This elegant form is the rarest. I have however observed it several times, and Professor Valentin has also convinced himself of its existence. The vessels occur in the form of tufts, presenting the most beautiful curves.

2. The fibres appear singly, scattered and often broken amid the epithelium, the tartar, and the adhering slime of the teeth.

3. Entire masses are observed of fibres which wind irregularly, and are surrounded by the yellow granular mass, which are perfectly identical with those described as No. 1. The first of these forms is the most beautiful, and possibly the primitive. It has on its first appearance some similarity with the spermatie animalcules which are sometimes observed of a tuft-like form, or with certain appearances of mould in the animal kingdom. The vessels have a breadth of about 0.00006-8th of a Paris inch, and a length, which, as will be seen from the accompanying figures, is extremely variable. They possess at the basis the breadth cited above, preserve this breadth till about the middle, and diminishing thence,

terminate in a point. They are smooth, of a yellowish white, somewhat transparent, are elegantly curved or wavy; or, when they occur in the second form, are occasionally quite straight, and apparently stiff. Their elasticity however admits of no doubt, as in moving the plates of glass, they frequently turned and moved in various directions. Professor Valentin believes also that their surface is not granular, and their margin not varicose; although it sometimes had that appearance, as small molecules attached themselves to the surface, which did not belong to the constituent, but to the adhering portions of the form, as was plainly observable if the object was well in focus. Professor Gerber, however, has observed both these peculiarities. Farther and more complete investigations will probably decide this point. I never saw these fibres ruptured, yet broken parts are occasionally to be seen in the second form. Single fragments of these fibres, which are cylindrical and have a broad end on each side, may be perceived. The point of fracture is straight, and exhibits no protruding portions. As regards the occurrence of these forms, I have found that they exist only on the teeth, but not on the slime; that they occur both in young and old individuals, but more frequently and more abundantly in the case of older persons, who usually pay less attention to their teeth, which on this account are coated with slime and tartar. They then display themselves chiefly in the form of Nos. 2 and 3 equally on all the teeth. I have looked for them on my own teeth, after having first very carefully cleaned them with a brush, and have found them again. They are most numerous when a portion of slime lies between the teeth, and particularly towards the bases of the last teeth. As regards their chemical composition, I can only state at present, that acids leave this peculiar substance totally unaltered, or at most, only render it somewhat more transparent. The strongest nitric, sulphuric, or muriatic acids do not dissolve it. The most concentrated solution of caustic alkali produces no alteration of form. If consumed on a plate of glass, in a platinum crucible, the surrounding mass is changed into carbon, but these fibres remain unaltered. This however is only to be observed as regards those which exist on the margin of the blackened mass; the others, though certainly not consumed, are mechanically inclosed in the black substance, and therefore cannot be discerned with the microscope.

I beg to submit this sketch as a mere preliminary notice on the subject, in order that other and more competent observers may devote their attention to these objects, hoping myself to be able to communicate more complete information at a future period.

Finally, that this substance does not belong to the enamel of the teeth, will be readily perceived by every one who has inspected the enamel itself.*

Explanation of the Figures, Plate 2, Division 1.

Figs. 1, 3, & 4, Show the thread-like bodies as described under No. 1.

Fig. 2. Second form of the thread-like bodies, separated, and with a portion of epithelium.

Fig. 5. Third form of the thread-like bodies, surrounded by the granular mass, in which the fibres are sometimes very distinct.

Fig. 6. Single fibres of the thread-like bodies, some entire, and others probably broken.

Figs. 2 & 6, Are drawn under higher magnifying powers than the other figures.

XII.—OBSERVATIONS ON THE PROBABLE SOURCE AND EXTENT OF
INFUSORIA IN THE MUD OF RIVERS, ETC.†

By T. F. Bergin, Esq., of Dublin.

EHRENBERG, who has already reaped such abundant laurels by the application of the Microscope to the Arcana of Nature, has, during the last year made another very important communication to the Berlin Academy, a translation of which by Mr. Weaver, has recently appeared in Jameson's Philosophical Journal, and of which I observe an abstract in the Microscopical Journal, Vol. I. p. 162.

I refer to his Observations on the important part which Microscopic Organisms play in Choking up certain Harbours.

Having made the truly wonderful discovery, now so familiar to every microscopist, that extensive apparent mineral beds, and, in some instances, almost mountain ranges, are composed almost exclusively of the silicious or calcareous shells of animalcules, so minute, as not merely to be invisible to the naked eye, but even to require high magnifying powers to establish their existence, he was naturally led to inquire whether similar causes were still in operation, and has arrived at the conclusion that a very large proportion of the mud banks deposited by certain rivers flowing into harbours, consists of these organisms in the living state. In fact, a moderate estimate, based upon microscopic examination of the

* From Müller's Archiv. 1840.

† Read before the Microscopical Society of Dublin, January 1842, and communicated by the Author.