ment of the several parts of each papillæ showing an evident adaptation to the reception of gustatory impressions.

The filiform appendages entangle and delay the smaller particles of the food, and the cavities of the papillæ receive the nutritious juices, and retain it for a time sufficiently long to produce the necessary impression on the sensory papillæ by which each cup is encircled.

Considered altogether, it would be difficult to imagine or devise an arrangement of parts more admirably adapted to the purpose to be fulfilled.—*Lancet*, March 1849.

4. *On the Minute Structure and Mode of Contraction of Voluntary Muscular Fibre.* By W. MURRAY DOBIE, Esq.—The first part of the author's paper contains a short statement of the various discoveries which have been made in the minute structure of voluntary muscle. The last author referred to is Mr. Bowman, who has described the ultimate fibrilla of muscle as composed of clear and dark spaces, arranged alternately in longitudinal series. The author then refers to the descriptions taken by various writers from the specimens of muscular fibre prepared by Lealand, a London optician. These specimens show the ultimate fibrilla to consist of clear, oblong, rectangular spaces, bounded by a distinct line, and joined end to end. In the centre of each there is a small, dark, oblong space, between which and the peripheral line of the clear space, there is a clear interval. From his observations on the muscles of all classes of animals, the author considers that the structure of muscle is still more complex than has yet been described. He finds an ultimate fibrilla to consist of quadrilateral spaces, which are of two kinds—the dark and the clear; these alternate regularly, and are arranged in single longitudinal series.

The dark and the clear spaces are sometimes equal in length—more frequently the latter are the shortest, and in the lobster and salmon appear sometimes as a mere line. When the fibre is stretched, the clear space is elongated and flattened, while the dark space appears somewhat elevated. These spaces are bounded laterally by a distinct line, which appears continuous; they are also separated from each other by distinct lines.

The clear space is crossed transversely at right angles by a *dark* line, which divides it into two equal quadrilateral spaces. The dark space is similarly divided by a *clear* line. Each space, therefore, consists of two compartments, which are similar in every respect to each other. Such is the appearance presented when the centre of the fibrilla is in perfect focus. When the surface is brought into focus, the light space appears *dark*, and does not show a cross line; while the dark one appears light, and shows the cross line *dark*, and more decided than before. The author has further found that, when the fibrillæ are separated, a delicate homogeneous membrane stretches from one to the other. This membrane is quite distinct from, and much more delicate than, the sarcolemma. In the skate it is striated, the striæ corresponding to those seen on the fibrillæ: this appearance is attributed to the membrane being more elevated or thicker opposite the dark spaces.

The author has made some observations on the contraction of muscular fibre, as it is seen to take place in the tail of the tadpole, when the animal is placed uninjured under the microscope. On contraction taking place, the transverse striæ are seen to approach rapidly, and to recede as rapidly on relaxation. The blood is driven from the part by the contraction of the muscle, but again returns on relaxation taking place.

Mr. Dobie concludes his paper with some directions as to the mode of preparing specimens.—*Monthly Retrospect*, from *Annals of Nat. Hist.*, Feb. 1848.

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5. *Chemical Pathology of Diarrhœa.*—OESTERLIN, in *Henlé and Pfeuffer's Zeitschrift*, Bd. VII. Heft 3, contributes an important paper on the Chemistry of Diarrhœa, a disorder which is exceedingly prevalent in the Baltic provinces, especially in conjunction with ague and malaria disorders.