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XXIII.—On the formation of the fibre-formed cells (Fibrous cells) or tubes of the liber in plants

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scription and figures of that species in the Annals of the Ent. Soc. Paris, are very inaccurate. 2°. *Myzoxyle*, Blot. 3°. *Adelges*, Vallot. Of this we have two species, *A. Laricis*, Vallot, and *A. gallarum abietis*, DeG. ; at least I have found no cause for generic distinction in the structure, notwithstanding the difference of their habitation. If *Eriosoma Fagi* be assumed as the type of this genus, it will be necessary to separate those species which inhabit closed follicles on the leaves and shoots of plants. In that case I would propose the generic name *Byrsocrypta* for these last.

XXIII.—On the Formation of the Fibre-formed Cells (Fibrous Cells) or Tubes of the Liber in Plants. By Dr. J. MEYEN*.

WHILE engaged last winter with Prof. Mitscherlich in making a series of observations on the chemical composition of various vegetable substances, the following curious fact attracted our notice: that the purified fibres of flax, and also old linen, when boiled in muriatic acid, decomposed more or less suddenly into very minute shining particles, which soon settled at the bottom of the fluid. On examining them with the microscope, these particles appeared to be nearly of the same length, and to be formed by a regular decomposition of the flax fibres, so that each particle consisted of a small portion of the cylindrical or prismatical tubes of the flax fibre. Some portions were at times considerably longer; but then it was more or less evident that these also were composed of several small ones, which were similar in length to the former. At times, however, even the various layers of the thick membrane of which flax fibre is composed were separated from each other by the action of the boiling muriatic acid.

The examination of a thin unsized linen paper, which had been reduced, by continual boiling in water, to a pulpy mass, exhibited in like manner a manifold division of the single flax fibres into smaller particles, and of their walls into distinct layers: but this subdivision, on which the fabrication of paper evidently depends, was far from being comparable with the

* Translated from Wiegmann's Archiv, Part IV., 1838.

above-described perfect, and almost regular subdivision produced by the action of boiling muriatic acid.

Recent examinations into the development of buds have shown me that that cellular layer which is subsequently developed into tubes of the liber and so-called ligneous fibre, and extends as an uncoloured zone from above the medullary cone to the nucleus or rudiment of the bud, consists of extremely delicate, rather extended, prismatic, generally 4-, 5-, or 6-sided parenchymatous cells, which stand with their ends accurately one above the other, and are gradually converted by the absorption of their septa into the long fibrous cells or tubes of the liber. The regular abrupt cylindrical tubes into which the fibres of flax were decomposed by boiling in muriatic acid, are almost exactly of the same length as these tender parenchymatous cells in their fully developed state; and that the latter originate from the delicate cells of the medullary substance by gradual extension, may easily be observed in the terminal buds of the horse-chestnut and of the ash.

On the absorption of the septa of those cells, the superposed edges grow so intimately together that their union has not hitherto been observed, and the tube thus originated forms the first or fundamental layer of the membrane of the fibrous cell, the thickening of which follows as usual by deposition of new layers on the inner surface. I am induced to publish these short notices at present, as they may afford some indications tending to explain the origin of the fibres of the muscles and nerves of animals; at the same time I would recommend a careful attention to the spiral formations which muscular fibre exhibits often quite as plainly as the tubes of the liber. It also appears to me that distinct layers are perceptible in the membrane of the muscular fibre of fish.

XXIV.—*On some new Organic Remains in the Flint of Chalk.*

By the Rev. J. B. READE, M.A., F.R.S. With Plates VIII. and IX.

It is now very generally admitted that a geologist is as much in need of a microscope as of a hammer. Instruments of the latter class may indeed be sufficient for the exhumation of the