## SOCIETIES AND ACADEMIES

### LONDON

**Royal Society**, December 18, 1879.—"On the Histology of *Hydra fusca*." By T. Jeffery Parker, B.Sc., Lecturer on Biology in Bedford College, London, and Demonstrator in the Royal School of Mines. Communicated by Prof. Huxley, Sec.R.S. (From the Biological Laboratory of the Royal School of Mines.)

The following is an abstract of the paper:—The correctness of Kleinenberg's view of the relations of the muscular fibres was proved by longitudinal sections of ammonic bichromate specimens, in which the fibres were obtained *in situ* in direct connection with the attenuated inner ends of the ectoderm cells.

No interstitial tissue could be made out in the thinnest sections of the tentacles; this tissue, therefore, cannot be the exclusive source of the nematocysts.

A distinct supporting lamella was clearly made out between the muscular layer and the endoderm.

The endoderm is shown to be, in all probability, ciliated throughout. Sections of osmic acid specimens showed each cell to bear one, two, or three, long, flagelliform cilia.

The active amœboid movements of the endoderm cells during life is strongly insisted on, the pseudopodial processes given off from them sometimes almost or entirely obliterating the digestive cavity.

It is suggested that the dark irregular granules found in the endoderm cells are food particles derived from the alimentary canals of the Entomostraca devoured. In one instance a diatom frustule was seen to be imbedded in a cell. Hydra thus, unlike most Metazoa, exhibits what Metschnikoff calls a "parenchymatous" mode of digestion.

Nematocysts are proved to occur here and there in the endoderm.

### PARIS

**Academy of Sciences**, December 29, 1879.—M. Daubrée in the chair.—M. Faye presented the *Annuaire du Bureau des Longitudes* for 1880, which contains, *inter alia*, tables of refractive indices, densities of minerals, dilatations of metals and crystalline bodies, all known gases, with formulæ, &c., data of thermochemistry, a map of lines of equal magnetic declination for France and neighbouring localities, and a work on statistical geography.—Note on the different branches of kinematics, by M. Resal. M. Mannheim has recently introduced the expression *kinematic geometry*; this branch dealing with motion independently of forces and times. It is not simply the geometrical part of kinematics as studied hitherto.—On some applications of elliptic functions, by M. Hermite.—On hydride of copper; reply to M. Wurtz, by M. Berthelot.—On the heat of formation of gaseous hydrate of chloral; reply to M. Wurtz, by M. Berthelot.—On the butyric ferment (*Bacillus amylobacter*) in the coal epoch, by M. van Tieghem. Examining numerous silicified rootlets of coniferæ from the coal strata, he finds signs of the same process in destruction of tissues as now; development of *Bac. am.* in the organs, either in the form of slender jointed filaments, or inflated rods each with a terminal spore, or innumerable free spores, amid homogeneous silica or ranged against the cuticle or vessels.—On the oxidation of alcohol by ammoniacal bioxide of copper, by M. Letellier. He heated the mixture at 180° in a sealed tube; the blue liquor becomes colourless, and the alcohol is changed into acetic acid.—On a property of certain functions similar to algebraic functions, by M. Picard.—On the impossibility of the algebraic relation $X^n + Y^n + Z^n = 0$, by M. Lionville.—On the determination of the elements of a vibratory movement; measurement of the phase, by M. Mercadier.—On a new electric burner, by M. Perruche. The "candle" part consists of three carbons, two being cylindrical (0·004 m. diameter) and applied to each other, the other of square section (0·005 m. a side), and placed in the angle formed by the first two. The cylinders are in pivoted brass holders, between brass plates, brought together by a spring. The holder of the square carbon is also capable of oscillation, and this carbon is held by a spring in contact with the others, while no current passes, but, when the current begins, takes its separate position. It is regulated by an iron lever and electro-magnet in circuit.—On a new phoneidoscopic process by coloured rings, by M. Guébhard. A development of his experiment of producing coloured rings by breathing on a surface of impure mercury. He shows the characteristic figures of the principal vowel sounds. They prove that the vocal emission in uttering these sounds does not present merely the longitudinal vibratory state of a cylindrical column (as indicated by manometric flames, &c.), but a very complex vibratory state at right angles to the direction of propagation, and whose influence cannot be negligible in the final wave. This has an obvious bearing on the sensibility of telephonic plates, which are affected by multiple centres of percussion.—Action of permanganate of potash on cyanide of potassium, by M. Baudrimont. This generates much nitrite and little urea in an alkaline medium, while much urea is formed if the medium tend to acidity by addition of $SO_3HO$. The greatest proportion of urea results from mixture of cameleon and cyanide in equal equivalents in presence of an excess of sulphuric acid.—Action of hydracids on isoprene; reproduction of caoutchouc, by M. Bouchardat. Isoprene behaves to hydracids like valerylene, fixing one or two molecules of acid and giving identical or isomeric compounds, with very similar properties; only isoprene (unlike valerylene) furnishes with dissolved acids an elastic polymer.—On the structure of sudoriparous glands, by M. Ranvier.—Alterations of cutaneous nerves in a case of congenital ichthyosis, by M. Leloir.—On the locomotion of insects and of arachnida, by M. Carlet. Insects of slow pace, and with equidistant legs, rest on a sustaining triangle formed of the two extreme legs on one side and the middle leg on the other, while they move the three other legs. In arachnida the polygon of sustentation is formed by the first and third leg on one side and the second and fourth on the other.—On the presence of diamond in an ophitic rock of South Africa, by MM. Fouqué and Lenz.

### VIENNA

**Imperial Academy of Sciences**, October 16, 1879.—The following among other papers were read:—On the physiological regeneration of the ciliated epithelium of the trachea, by Dr. Drasch.—On the solubility of mixtures of chloride of sodium and chloride of calcium at different temperatures, by Herr Schönach.—On a species of configuration in the plane and in space, by Herr Kantor.—On the causes of severe winters in Europe, by Herr Wolz.—Researches on the rain-conditions of Austria-Hungary, by Herr Hann.—Contributions to a monography of the genus Megalodus, with special reference to the mesozoic forms, by Prof. Hörnes.—A new chemical photometer by means of mercury oxalate, for determining the intensity of ultra-violet rays, and contributions to the photo-chemistry of mercury chloride, by Dr. Eden.

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