

Science News a Century Ago

The Ashmolean Society

IN Oxford, on February 6, 1837, at a meeting of the Ashmolean Society, "Mr. Holme of C.C.C. read a paper on the formation and habits of the British aquatic coleoptera, which are included in the sections *Hydradephaga* and *Phithydrida* of Macleay, and exhibited specimens which showed the voracity of some specimens of the genus *Dyticus*, and concluded by drawing attention of the members to the question whether the mole cricket is able to swim, which Mr. Curtis thinks probable, from the resistance which the thorax and elytra offer to water. Mr. Duncan read a paper, in which he gave an outline of the progressive development of animals from their embryo to their perfect state especially of the frog—of one species of which, the *Rana paradoxa*, he exhibited a specimen in the tadpole state, nearly transformed." (*Athenæum*.)

Of the individuals mentioned in this note, one was presumably Alexander Macleay (1767–1848), F.R.S., the entomologist and colonial statesman, another Philip Bury Duncan (1772–1863), keeper of the Ashmolean Museum in 1826–55, and a third John Curtis (1791–1862), the author of "British Entomology" (1824–39).

Lieut. Wellsted's Exploration of Arabia

At a meeting of the Linnean Society held on February 7, 1837, the chairman, A. B. Lambert, spoke of the researches of Lieut. Wellsted in Arabia Felix, and said that this traveller had added much to the knowledge of the natural history of the district. He had ascertained the tree producing myrrh, and also the dragon-tree. He had surveyed the northern coast of the Red Sea, where he had many opportunities of confirming the descriptions of Bruce, whom he considered the most accurate traveller in those regions who had ever returned to Europe. Mr. Lambert also exhibited some specimens of mamma brought by Lieut. Wellsted from Mount Sinai, considered to be the produce of a tamarisk, which was supposed to be identical with that on which the children of Israel fed in the wilderness.

Aylmer Bourke Lambert (1761–1842), well known for his botanical writings, was an original member of the Linnean Society, while James Raymond Wellsted (1805–42) was an officer in the service of the East India Company.

The Properties of Electricity

ON February 7, 1837, F. W. Mullins, M.P., sent a communication to the *Philosophical Magazine* (10, 281) entitled "On the Development and Action of Electricity in Voltaic Combinations". In his concluding paragraph he said : "I believe light, as well as heat, to be a property of electricity, else, how account for its existence in its *purest form in vacuo*, where electricity is the only agent ? But I shall refer to these subjects again and at greater length when I have more leisure than I have at present, merely adding that I do not believe my views to be irreconcilable with Mossotti's theory, and that I am quite satisfied that though chemical action may be supposed to develop electricity, still electricity is the prime mover ; electrical and material attractions and repulsions, when brought into play by certain arrangements of elements, inducing and creating all chemical phenomena. . . ."

Heat Transfer in Locomotive Boilers

At a time when the calorific theory of heat still held sway, Jacob Perkins, on February 7, 1837, read a paper to the Institution of Civil Engineers entitled "On Locomotive Engines and the means of Supplying them with Steam". The practical defects of the existing system of locomotives arising from the furring up or burning out of the tubes of the boiler, he considered, could be overcome through the medium of steam surcharged with calorific. If a tube hermetically sealed be filled to a sixtieth of its contents with water, the steam arising from the water will not acquire sufficient elastic force to burst the tube; but will have a remarkable property of transferring heat. The steam in the vertical tube being saturated with heat, becomes a medium through which the heat ascends by its own levity, so that the tube would become red hot were it not immersed in water.

Perkins, who was born in America in 1766 and died in London in 1849, was a pioneer in the use of high-pressure steam, and had before 1837 constructed boilers and engines working at pressures of 800–1,600 lb. per sq. in.

Science News in the *Athenæum*

IN its issue of February 11, 1837, the *Athenæum* gave the following notes of scientific interest.

French Academy of Sciences. M. Becquerel is elected vice-president of the French Academy of Sciences for 1837, by a large majority of votes ; and M. Magendie, the last vice-president, passes on to the presidency. The Minister of the Interior has commanded a bust of the late celebrated botanist, M. de Jussieu, to be executed for the Academy, by the skilful hands of M. David.

Acoustics. MM. Cagniard Latour and Demonferrand have invented an instrument which they propose naming the Acoustic Pyrometer, and which will emit sounds according to the temperature in which it may be placed.

M. Melloni. The able and celebrated philosopher, M. Melloni, who was exiled from Italy, has been recalled by the Duchess of Parma : M. Arago appealed to Prince Metternich on his behalf, at the same time laying before His Highness an analysis of his merits, and his beautiful discoveries. The Prince submitted this statement to the Duchess and interceded, and consequently M. Melloni is now at liberty to return to his native country.

Societies and Academies

London

Royal Society, January 28.

R. D. PRESTON and W. T. ASTBURY : The structure of the wall of *Valonia ventricosa*. The cell wall of *Valonia ventricosa* has been studied in detail by means of X-ray diffraction photographs and the polarizing microscope. It consists of layers in which the cellulose chains in any one layer are inclined to those in the preceding and subsequent layers at an angle which is on the average rather less than a right angle. The chains of one set of layers form a system of meridians to the wall, while those of the other set build a system of spirals closing down on the two 'poles' defined by the meridians. The development of the rhizoids is associated with regions of the wall adjacent to the poles of the spiral. The plane of spacing, 6.1 Å., of the cellulose crystallites is, roughly