

Science News a Century Ago

A Surrey Museum

ON May 30, 1836, *The Times* said: "A very interesting museum on a small scale has just been opened in the neighbourhood of the Surrey Zoological Gardens. The principal object of this establishment is professed to be the exhibition of a genuine, rare and nearly complete collection of the birds of the British Isles, and the profession is not belied by what is actually to be seen in the collection. It contains nearly 300 specimens of the feathered tribe of Great Britain, from the gigantic eagle to the diminutive wren. These specimens are many of them remarkably brilliant in plumage, and of beautiful diversities of colours. . . . They are arranged and classified according to the ornithological systems of Selby, Montague and Bewick, and the Linnaean names, as well as those by which they are generally and provincially known to the natives of England, are attached to the cases in which they are contained. There are also some North American specimens, which though in some degree different to the feathered species of our woods and fields, are in many respects extremely similar."

Sir Francis Pettit Smith's Screw Propeller Patent

OF the many promoters of screw propulsion, the most important was Francis Pettit Smith, the Hendon farmer, whose first patent was taken out on May 31, 1836. Born on February 9, 1808, at 31 High Street, Hythe, Smith was educated at Ashford, and began life as a grazing farmer on Romney Marsh, whence he removed to Middlesex. He was always fond of making models, and early in 1836 he drove a model boat by means of a screw on his pond at Hendon, and at about the same time he exhibited a screw-driven model boat at the Adelaide Gallery. With the assistance of Wright, a banker, and Thomas Pilgrim, a practical engineer, in the summer of 1836 he constructed a boat of ten tons having an engine of six horse-power and a single-threaded wooden screw with two complete turns. From these experiments sprang the developments which led to the building of the *Archimedes*, the *Novelty* and H.M.S. *Rattler*, and the introduction of the screw into both warships and merchant ships. Twenty-two years after he took out his patent, Smith was presented with a testimonial at a public dinner in St. James's Hall, Robert Stephenson being in the chair. The testimonial took the form of a fine silver salver and silver claret jug which Smith bequeathed to the Science Museum. He died in South Kensington on February 12, 1874, and was buried in Brompton Cemetery.

Temperature of Underground Springs

WRITING to Prof. Jameson on June 1, 1836, J. D. Forbes said: "On occasion of a late visit to the district of Lead Hills I suggested to my friend and former pupil, Mr. Irving of Newton, the importance of determining the temperature of the springs in the bottom of the Lead Hill Mines at this particular epoch. The working having been discontinued since the end of March, any supposed influence of animal heat and light is avoided, and yet the pumping of the water has been regularly carried on. Mr. Irving immediately and zealously undertook the inquiry; and descended to the deepest part of the mine on the 16th of May and found the temperature of the

water in the bottom to be 49°. This was at depth of 95 fathoms below the entrance to the Susanna Vein. . . ."

Visitation of the Royal Observatory, Greenwich

IN his autobiographical notes for 1836, Airy records: "On June 4th the Annual Visitation of the Observatory was held, Mr. F. Baily in the chair. I presented a written Report on the Observatory (a custom which I had introduced at Cambridge) in which I did not suppress the expression of my feelings about chronometer business. The Hydrographer, Captain Beaufort, who was one of the Official Visitors, was irritated: and by his influence the Report was not printed. I kept it and succeeding Reports safe for three years, and then the Board of Visitors agreed to print them; and four Reports were printed together, and bound up with the Greenwich Observations of 1838."

Societies and Academies

LONDON

Royal Society, May 21. SIR PATRICK LAIDLAW and W. J. ELFORD: A new group of filterable organisms. A group of filterable saprophytic organisms has been discovered in sewage. In the normal course of their development, they have small forms of about the size of vaccinia virus (0.125-0.175 μ), though larger forms also occur (0.5 μ or more). Cultures are readily obtained by filtering mixtures of sewage and Fildes's broth through membrane filters of appropriate porosity, and incubating the filtrates at 30° C. They can be maintained in subculture in indefinite series. Three strains have been isolated which differ in their cultural characters and also serologically, though morphologically they appear the same, and they all show the same end-point in filterability. These organisms are of interest in view of the small forms, which although comparable in size with some of the viruses, can nevertheless lead an independent existence. It is, as yet, uncertain how the organisms should be classified. MARION A. WATSON (HAMILTON): Factors affecting the amount of infection obtained by aphid transmission of the virus Hy. III. Experiments have been carried out in order to show the effect of various factors on the percentage of infection obtained with the virus Hy. III in tobacco, using its insect vector *Myzus persicae*. A maximum percentage infection was obtained during the winter months and a minimum during the summer months. The percentage infection increases with the number of aphids used per plant, and the relation between the numbers of infection obtained for each aphid number shows that the infections are local and independent. The percentage infection increases with increased feeding time on the healthy plant, but there is no indication of a preliminary time period in which no infection is obtained. The percentage infection decreases very rapidly with increasing time on the infected plant from 2 minutes to 1 hour. After 1 hour it increases slightly with further increase of the feeding periods. R. RUGGLES GATES: Genetical and taxonomic investigations in the genus *Oenothera*. This paper presents the results of a three years' genetical survey of the genus *Oenothera* in eastern Canada and adjacent areas. By combining genetical with taxonomic methods, a fuller knowledge is attained of the wild