

Cambridge, in 1675 and took holy orders. In 1682 he was made vicar of Wargrave, Berkshire, but seven years later was appointed to Upminster, where he spent the remainder of his life and where he is buried. Derham united a sincere devotion to his calling with a passion for mathematical and philosophical studies. Elected a fellow of the Royal Society in 1702, he contributed papers to the *Philosophical Transactions* on the motion of the pendulum in a vacuum, on sound, sunspots, Jupiter's satellites, the aurora borealis and other subjects. His separate writings included his "Physico-theology", 1713; and his "Astro-theology", 1715; while in 1726 he edited "The Philosophical Experiments . . . of Robert Hooke and other Virtuoso's". He was made a canon of Windsor, and in 1730 the University of Oxford conferred upon him the degree of D.D. for his services in the cause of religion by his culture of natural philosophy.

Lead Mining in the Northern Pennines

THE history of lead mining in the Tyne, Wear and Tees areas during the eighteenth and nineteenth centuries was described by Dr. A. Raistrick before the Durham Philosophical Society on March 15. Two companies have worked practically all the mines in these areas, the London Lead Co. and the Beaumonts. The former began with a charter granted in 1692 to a company formed in Bristol to attempt the smelting of ore with coal. This venture closed after two years, but two Quakers, Edward Wright and John Haddon, of London, obtained the reversion of a much older charter (of 1654) of the Society of Mines Royal (Copper), a German concern formed to work Cumbrian ores. Wright seems to have invented the reverberatory furnace, long called the cupola from its shape, and found that it was very suitable for lead refining. They extracted silver, and with some Newcastle Quakers founded a smelt mill at Ryton-on-Tyne in 1704; before that (from 1696), difficulties with the oath it contained prevented their taking up the 1692 charter, but these were overcome in 1704, when the accumulated silver was sold to the mint. This company, long known as the "Quaker Lead Company", until 1730 had an output of about 150 oz. of silver a week, and in 1705, Sir Isaac Newton then being Master of the Mint, they were granted a mark which appears on most of Queen Anne's coinage until 1737. The maundy money was coined from their silver for another hundred years. They bought ore from Alston Moor, and worked lead also in Flintshire, and finally in Yorkshire, Scotland, Ireland and the Isle of Man. The tale is too long to repeat here, but the Pattinson process of desilverisation was discovered at Blaydon in the Beaumont works. The two concerns worked harmoniously together, and many improvements were made by the London Lead Co. In 1860, the decline set in, the company surrendered all its leases in 1907; and now only three mines are working under the new Weardale Lead Co., and those recently closed will never re-open. An interested visitor at the lecture was the last manager of the old company.

Speed in Aviation

IN his Friday evening discourse delivered at the Royal Institution on Friday, March 22, Prof. B. Melvill Jones discussed the problems of speed. The speed of aerial transport is limited solely by the power which can be provided to drag the aeroplane through the air, without reference to its support; the power required increases very rapidly with speed, but can be much reduced by good stream-lining. The recent increases in speed of civil air transport are due mainly to improved stream-lining. With well stream-lined aeroplanes the power is expended mainly in overcoming skin friction, so that the detailed study of the skin friction on the curved surfaces of the wings and body merits, and is receiving, great attention by research workers. The magnitude of the skin friction force is delicately dependent on surface smoothness and on the smoothness or otherwise of the flow very close to the surface of the wings and body. After perfect stream-lining, in the ordinary sense, has been achieved, still further important increases in speed would follow from any considerable extension of the area over which the flow remains smooth very near to the surfaces of the wings and body; but to obtain this smooth flow over large surfaces moving at high speeds may be very difficult, and it is still a matter for conjecture how much of the great increase of speed which might conceivably be obtained in this way will ever be realised in practice.

Recent Acquisitions of the Natural History Museum

THE Department of Entomology has received from Mr. R. W. Lloyd a gift of drawings of quite exceptional interest and value. These consist of the original coloured plates prepared by Jacob Hübner for his "Collection of European Butterflies", published during the years 1796-1830, at Augsburg in Germany. There are 852 plates in all, a number which exceeds that of the published work by many cancelled and amended copies. Concerning the identity of some of the smaller insects illustrated there has long been doubt; it is hoped the comparisons which it will now be possible to make between the originals of these figures and the material available in this Department will enable most of these doubts to be removed. It is interesting to note that until a few weeks ago it was unknown in Great Britain that these drawings even existed. The Department of Geology has recently acquired from Dr. Wyatt Wingrave a large collection of fossil invertebrates (chiefly Ammonites) from the Lias and Inferior Oolite of the Dorset district. A crystal of gem olivine (peridot) from Burma has been purchased for the Department of Minerals. Presents to the Department include a fine group of large crystals of wolframite from Pelagatos Mountains, Peru, collected by the late Prof. J. W. Gregory and presented by Mrs. Gregory.

THE Department of Botany has received a collection of dried plants made in Twaong (Tibet) and Bhutan by Messrs. G. Sherriff and F. Ludlow. There are 523 flowering plants and 53 cryptogams, which are