

exhibition of remarkable manifestations associated with the youth of both sexes from time to time. Eventually they have, as a rule, been attributed to imposture. Among the best known is the Cock Lane Ghost in the middle of the eighteenth century, which inspired one of Andrew Lang's more intellectually agile efforts and is represented in the exhibition by an anonymous pamphlet attributed to Oliver Goldsmith. Another case, equally famous, if more materialistic in its supposed manifestation, was that of Mary Toft (1726) who gave birth to 27 rabbits, but failed to be equally prolific when removed from Guildford to Leicester Fields. In tracing back the history of the investigation of spirits, and of trials for witchcraft, it is remarkable what degree of credence was given to the evidence of juvenile neuropaths, and how frequently it was accepted as adequate, often without corroboration, to ensure condemnation of the accused to prison and death, while at the close of the sixteenth century the case of one Somers discussed in "A Discovery of the Fraudulent Practices of John Darrel . . ." by Samuel Harsnett, an eminent divine and later Archbishop of York, was near to causing a schism in the Church.

#### Exhibition of Antiquities from Colchester

A SPECIAL exhibition of antiquities from Colchester opened at the British Museum on December 10. The objects exhibited illustrate the results of the five years' exploration carried out on the British and Roman site at Colchester by the Colchester Excavation Committee, which was formed in 1930 by the British Museum and the Essex and Colchester Museum jointly. The exhibits, which consist of objects obtained by excavation, and plans, drawings and photographs, while giving a general view of the results, serve particularly to illustrate three aspects of the information which five years' work has made it possible to piece together. The first of these is the history of the site, beginning with its first foundation as a British city, then in its period of greatest prosperity under Cunobelinus (A.D. 5), its conquest at the time of the invasion of Claudius (A.D. 43), and its eclipse on the rise of the Roman city seven years later. Apparently the diminished British city shared the fate of the Roman city when the latter was burned by Boudicca in A.D. 61. The photographs of the structural remains discovered and their plans, as well as the series of coins and material remains, are an index of the vicissitudes of the site. The second aspect is the character of native culture at Camulodunum; and the third, the effect of the impact of Roman culture on that of the native. To some, this last will appeal as of the greatest interest of all. Many new facts, indeed, have been brought to light at Colchester, not the least important being the data bearing upon the manufacture of Romano-British pottery. The remarkable discovery of the now famous kiln demonstrated that not only did the Romano-British potters make jugs, mortars, etc. in buff ware, slip coated fabric, castor ware, etc., but they also made the well-known Samian or 'terra sigillata' of

which the manufacture had previously been thought to be confined to Gaul.

#### Archæological Investigations in Ireland

DR. O'NEILL HENCKEN, director of the Harvard Archæological Mission to Ireland, before leaving for a brief vacation in America, has given an account of the results achieved in the recently completed third year of the Mission's work, which appears in the *Observer* of December 9. Excavations at Cushenden, Co. Antrim, would seem to have confirmed fully the view of the importance of this site for the elucidation of the origin and affinities of the stone age industries of north-east Ireland, which is held by Mr. C. Blake Whelan, with whom the Mission has been in co-operation. Mr. Whelan has recently pointed out the probability that further systematic investigation of stone age sites in this area would provide evidence of stratification, which is lacking for certain of the comparable European industries of the mesolithic and earlier phases of the neolithic ages (see *NATURE*, Nov. 4, p. 702). From Dr. Hencken's statement, it now seems that this evidence is likely to be forthcoming from Cushenden, when certain comparative studies now in progress have been completed. He states that all the phases of the Irish stone age have been found at Cushenden in conditions, geological and other, which should provide the necessary data for the discussion of the origin of these cultures and their affinities with comparable material from sites in Britain and on the Continent.

DR. HENCKEN also referred to the Mission's investigations on the crannog site of Lagore, Co. Meath, known from the annals to have been the residence of Irish kings in the eighth, ninth and tenth centuries. The excavations have shown that the site was occupied from much earlier times and have brought to light a wealth of material illustrating Irish culture in earlier centuries. The crannog is 150 ft. in diameter and 11 ft. thick. It was surrounded by an oaken palisade. The lake in which it stood has now disappeared. The inhabitants were pastoralists, but practised occasional hunting. Few, if any, traces were found of agricultural activity. Ornaments of bone and objects of leather, predominating in number, bear this out. Other materials in use were bronze, iron, glass (beads), enamel, wood, stone and pottery. The Mission has received generous assistance from the Irish Government.

#### Medical Uses of Radium

A REPORT bearing the above title has been issued by the Medical Research Council summarising the results of research work during 1933 in the treatment of cancer and other conditions (Spec. Rep. Series, No. 197. H.M. Stationery Office. 9d. net). The radium is lent by the Council to selected centres throughout Great Britain, and these furnish reports to the Radiology Committee. In cancer of the mouth, radium has proved a successful agent in the treatment of primary growths of the tongue, but when the glands are involved they are much less amenable.

With breast cancer, operation is generally successful in early cases, but when the axilla is involved, much less so. For the latter, radium therapy has been extensively tried with questionable success, and X-rays are probably a more suitable agent. In uterine cancer, frankly operable cases are treated as successfully by radium as by surgery, but with a smaller operation mortality, and surgically inoperable cases treated by radiation yield a by no means negligible percentage of clinical cures. Certain non-malignant conditions also respond well to radium treatment, for example, uterine hæmorrhage. Several important experimental researches are also included in the report.

It is estimated that the total quantity of radium available for treatment in Great Britain is now about 70 gm. Of this amount, the Radium Commission controls 23 gm., which includes 20 gm. placed at its disposal by the Radium Trust, and three 1 gm. units, the property of the King Edward's Hospital Fund (Fifth Annual Reports of the National Radium Trust and Radium Commission 1933-1934. H.M. Stationery Office. 9d. net). The radium is distributed for use for experimental work and treatment between the Medical Research Council and the National Physical Laboratory, certain London hospitals and institutions, and thirteen national radium centres and five regional radium centres. In addition, allocations have been made by certain organisations, such as the British Empire Cancer Campaign, and a considerable amount of radium is privately owned.

#### National Medical Statistics

THE Registrar-General's Statistical Review of England and Wales for the Year 1933 (Tables, Part 1: Medical), pp. iv+406, has recently been published (London: H.M. Stationery Office. 6s. net). It appears that the number of births registered in 1933 was 580,413, giving a rate of 14.4 per 1,000 persons living. This rate is 0.9 below that for 1932, and constitutes a new low record. The death-rate was 12.3 per 1,000 persons living, 0.3 above the rate for 1932 (the same as that for 1931) but 0.9 above that for 1930. The deaths of children under one year of age numbered 64 per 1,000 live births against 65 in 1932, 66 in 1931 and 60 in 1930. Cancer showed a death-rate of 1,526 per million persons living against 1,510 in 1932. If, however, allowance is made for differences in the age constitution of the population, the comparative mortality from cancer shows a slight decrease. Tuberculosis again furnished a new low record of 824 per million living. Puerperal sepsis caused the deaths of 1.75 women per 1,000 live and still births, 0.20 more than the rate for 1932 but 0.09 less than 1930. The death rate from suicide was 140 per million persons living, a decrease of 3 per million on the record high rate of 1932. A slow increase in this rate had been continuous for a number of years. Road accidents due to mechanical vehicles were responsible for 5,934 deaths. The figures for the last five years were 5,196, 5,752, 6,342, 5,892 and 5,671 respectively.

#### Exhibition of Microscopes

THE second annual exhibition of microscopes and appliances, conducted by Messrs. W. Watson and Sons, Ltd., 313 High Holborn, London, W.C., which has been open all this week at the Central Hall, Westminster, attracted numerous visitors. A number of mounted specimens were shown on a series of microscopes ranged round the Hall, comprising diatoms, pollens, histological and pathological specimens, and crystals with polarised light. Members of the Quekett Microscopical Club arranged an interesting exhibit of living pond-life, including some beautiful specimens of *Volvox* and *Vorticella*. The use and value of the microscope in industry were demonstrated by exhibits illustrating the differences in microscopic structure of various qualities of leather, the size of sugar crystals, cocoa particles and entangled air bubbles as influencing the quality of sweets in confectionery, and the microscopic flora in cheese and in vinegar fermentation. A side-show of considerable interest was a demonstration of the making of the glass discs and their shaping, grinding and polishing so as to form the constituent lenses for microscope objectives. Other exhibits illustrated the detection of forgery and of crime weapons, and formed the subjects of two of the lantern lectures, by Mr. T. J. Ward and Major G. Burrard respectively, which have been a feature of the exhibition. Other lantern lectures included "A Naturalist on the Amazon" (Mr. Robins), "An Amateur among the Stars" (Mr. Offord), and "How Lenses are Made" (Mr. Watson Baker), together with several cinematograph displays by the Kodak Company.

#### Sound and Noise

A RESEARCH and Development Lecture on "Sound and Noise" was given at the Royal Institution on December 12, under the auspices of the Institution and the British Science Guild, by Dr. G. W. C. Kaye, Superintendent of the Physics Department at the National Physical Laboratory. Mr. Hore Belisha, the Minister of Transport, was in the chair. Man has developed very many and ingenious ways of making sounds and noises. In some everyday events the noise is only a small by-product; for example, only about a thousandth part of the energy of a dropped weight or of a hand-clap appears in the form of noise. This figure was increased to a few per cent in the case of motor horns and loud speakers, and even up to 30 per cent or more for the loud speakers used for talking pictures. By comparison with many sounds, the human voice is very weak, and even during shouting the output was only about 0.001 watt. Suitably equipped, an orchestra of 75 has a normal acoustic output of about 0.5 watt, which in strident passages may be increased 100-fold—quite enough, if it could be so applied, to light an average electric lamp.

FOR the purposes of the measurement of the loudness of noise, a reference standard of sound has been chosen, which consists of a pure note of a frequency of 1,000 cycles per second. The adjustable