

service to the world if they were allowed the leisure and peace of mind to prosecute their researches unhampered by the care and training of research collaborators. The methods of the solitary philosopher, the methods of Davy and Faraday, can scarcely be excelled. Research in the academic sense has become a fashion; it will soon become a trade and then farewell to the hopes that Great Britain will again produce the few particular men who, in a flash of genius, have turned discovery into invention and invention into industry. Scotland has given to the world such pioneers, and is not lacking in the qualities which are needful.

Reduction of Working Hours in Industry

THE uncompromising attitude of certain sections of British industry to proposals for the reduction of working hours might be regarded with some amusement but for the serious results which it is likely to precipitate. The portentous arguments set forth, for example, by the National Federation of Employers Organisations against the forty-four hour week recapitulate in unmistakably the same accents those advanced with equal plausibility in previous generations against Factory Acts, the abolition of child labour and the limitation by law of the hours of work by women and children. There are, however, important firms such as Imperial Chemical Industries, Ltd., in its Billingham Works, and Boots Pure Drug Co., at Nottingham, which have had the courage and wisdom to determine the possibilities of the forty-hour or five-day week by direct experiment. The experiment carried out at Nottingham is of the greater interest in that its results have been made generally available in an important report by Sir Richard Redmayne, who was nominated by the Ministry of Labour, at the firm's request, to conduct an exhaustive inquiry as to whether the permanent adoption of the five-day week in all its works is possible ("A Review of the Experimental Working of the Five Days Week by Boots Pure Drug Company at Nottingham." By Sir Richard A. S. Redmayne. Pp. 70. Nottingham: Boots Pure Drug Co., 1934. 1s.). The publication of the full details of this investigation in itself constitutes a noteworthy break with the tradition of secrecy which has hampered the pooling of experience in matters of industrial safety, hygiene, labour policy, etc.

SIR RICHARD REDMAYNE concludes that the working of the five days working week inaugurated on April 30, 1934, and terminating on September 29, has proved an unqualified success both from the business point of view and from that of the employees. He is satisfied that the cost in the aggregate has not been enhanced and the efficiency of the employees has been increased. Marked improvements in health, contentment, regularity of attendance at work and diminution of absenteeism have been observed since the start of the experiment, and the employees themselves would view with dismay any return to the five and a half day week. Had the working hours per week not been reduced, it would have

been necessary to discharge a number of workers, and from this point of view alone the experiment has already been of real benefit to the community itself. Sir Richard Redmayne is satisfied that equally satisfactory results would be obtained if the experiment was continued over the winter months. It is, of course, difficult to say how far the experiment can be applied to other concerns with equal prospects of success. The intimate relation of production and distribution in this particular concern has probably contributed largely to its success, but Sir Richard Redmayne considers that there are many works at which the five day week might be tried with equal prospects of success. Messrs. Boots have set an example in scientific experiment on a most important social-industrial question, and scientific workers should not be slow in pointing out to the community the possibility of obtaining similar decisions in these matters in other industries or concerns.

Rare Books on Magic

AN exhibition of old and rare works dealing with magic, witchcraft, legerdemain and kindred subjects was opened on December 6 and was on view until December 14 at the University of London Council of Psychical Investigation, 13D Roland Gardens, South Kensington, London, S.W.7. Five hundred items had been selected for exhibition out of the 12,000 volumes collected by Mr. Harry Price, the honorary secretary of the Council, forming what is probably the largest and most important assemblage of printed works relating to occult subjects available for the student. The books exhibited ranged in date from about 1490 to the present day, though, curiously enough, the "Malleus Maleficarum" (1488), the first printed work on witchcraft, and the Bible of the witch finder, was not represented by a copy earlier than 1576. Works dealing with magic and the witch, ghosts and spiritual manifestations generally, of the sixteenth, seventeenth and early eighteenth centuries are becoming increasingly rare and expensive, and many of them in a few years' time will be unobtainable. A specialised library of the size of that of the Council for Psychical Investigation is, therefore, of great importance for the psychologist and the social historian. In looking through any extensive range of books such as this, it is significant to note how slow has been the growth in appreciation of the nature of evidence when any element of the supernatural has been implicated in an investigation. Although early works, such as Lavater's "Ghostes and Spirites Walking by nyghte . . ." (1572) and Scot's "The Discoverie of Witchcraft" are thoroughly sceptical, it was not until 1668, in the work of the Rev. Joseph Glanville, fellow of the Royal Society and virtually the father of psychical research, that anything in the nature of a systematic setting out of evidence was attempted.

THE recent haunting at Saragossa, in which voices in a chimney have been explained as due to the "unconscious ventriloquism" of a serving maid—an explanation almost as mysterious as the phenomena it explains—adds interest to the accounts in this

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.