

later elections the error has been reduced to 2½ per cent. His method is to choose a sample of about 30,000, which is divided up for age, income, sex, and geographical location in the same proportions as the total population of the United States. Similar predictions are made for local elections in Great Britain by the British Institute of Public Opinion, using a sample of 1,500–2,000. The procedure seems very satisfactory for forecasting election results, but for estimating public opinion on such questions as confidence in the Government, statistical methods may be very misleading. In a paper entitled "The Limitations of Statistics in the Field of Public Opinion Research", read before the Manchester Statistical Society on April 14, Mr. J. G. Ferraby argues that for many purposes the qualitative methods adopted by Mass Observation are preferable. These rely largely on a panel of voluntary observers, who answer written questions drawn up by headquarters, keep diaries, forward letters received by them which comment on general topics, and report conversations, including some not intended to be overheard. It is claimed that this method subordinates accuracy of detail to accuracy in presenting a true picture of the whole. It is not explained how the accuracy of the observers or the truth of the picture is checked.

### Earthquakes Registered at Kew and Stonyhurst

SEVEN strong earthquakes were registered at Kew Observatory during the month of May 1943. The first was on May 2, recorded at 01h. 10m. 17s. U.T., and has been reported as having been felt in Württemberg in Germany. The second, also on May 2, began recording at 17h. 30m. 11s. U.T. from an epicentre some 8,700 km. distant, and attained a maximum ground amplitude of 180  $\mu$  at Kew at 17h. 58m. 23s. U.T. The third, on May 3, began recording at 02h. 13m. 01s. U.T. from an epicentre some 11,000 km. distant, and attained a maximum ground amplitude at Kew of 200  $\mu$  at 03h. 03m. 15s. U.T. The fourth, not so large, was recorded at 09h. 15m. 54s. U.T. on May 20, and the fifth, on May 22, recorded at 22h. 10m. 37s. U.T., has been reported as having been felt in Italy. The sixth was by far the largest of the month. It was recorded at Kew at 23h. 21m. 54s. U.T. on May 25, and from the provisional interpretation of the record came from an epicentre some 12,500 km. distant. It attained maximum ground amplitude at Kew of 340  $\mu$ . At Stonyhurst the shock was also recorded at 23h. 21m. 54s. U.T. on May 25, and from a tentative interpretation of the record, came from an epicentre some 105° distant. The seventh earthquake was recorded at Kew at 00h. 27m. 01s. U.T. on May 28, and attained a maximum ground amplitude at Kew of 35  $\mu$ . It appeared to come from an epicentre somewhere near the one first recorded in the month. This shock was also recorded at Stonyhurst at approximately 00h. 28m. 20s. U.T. The German radio reported an earthquake at about this time, the epicentral region being west of Balingen near Stuttgart. Some roofs and chimneys are stated to have collapsed, causing injuries to people, and "strange glows" are reported to have been observed. The shock was also reported felt in Württemberg and Baden, in Oberade, the Bodensee and in Alsace. Tremors were felt in Switzerland, most strongly in the cantons of Schaffhausen and Thurgau. The earthquake was apparently preceded by a foreshock, which was felt at places in south-west Germany including Frankfort-on-Main; but this foreshock was not recorded with

any intensity in England. The main shock was also recorded at West Bromwich, on the seismograph belonging to Mr. J. J. Shaw.

### The Franklin Institute : Medal Awards

THE following medals of the Franklin Institute, Philadelphia, were awarded on April 21: *Franklin Medal and Honorary Membership* to Prof. Harold C. Urey, professor of chemistry in Columbia University, for his discovery and production of heavy hydrogen, which has proved of immense importance in furthering research in chemistry, physics, and biology; and to Dr. George Washington Pierce, for his development of "electrically squeezed" quartz crystals used to narrow the range of radio frequencies. The use of this principle in obtaining accurate oscillations has facilitated the construction of the most precise electric clocks. *Elliot Cresson Medal* to Prof. Charles M. Allen of Worcester Polytechnic Institute. His contribution to the field of hydraulics is a more rapid method of measuring the flow of water by adding a known amount of salt to the water and noting the time required for it to pass electrodes inserted in the pipe lines down-stream.

*Howard A. Potts Medal* to Dr. Don Francisco Ballen for restoring a valuable natural resource of his country to productivity; and to Dr. Paul R. Heyl of the National Bureau of Standards for his theoretically important formula to determine the constant of gravitation. *Frank P. Brown Medal* (for achievements in building and allied industries) posthumously to Mr. Albert Kahn, Detroit architect. *Edward Longstreth Medals* (jointly) to Mr. Robert Griffin De La Mater and Mr. William Schwemlein. Their design and successful application of a fluid brake has made practical the drilling of wells to great depths, with increased safety to life and property. *John Price Wetherill Medal* to Robert Howland Leach. *George R. Henderson Medal* to Harry Miller Pflager, senior vice-president of the General Steel Castings Company. *A Certificate of Merit* to Carl S. Hornberger. The 1943 *Louis Edward Levy Medal* (for the best paper published in the *Journal of the Franklin Institute* during 1942) to Anders Henrik Bull of Forest Hills, N.Y., for his paper, "Soil Pressure Distribution along Flexible Foundations".

### Institution of Electrical Engineers

IN collaboration with the British Red Cross Society arrangements were made by the Institution of Electrical Engineers for British prisoners of war in Germany to sit for the associate membership examinations held in May and November, 1942. There were nineteen such candidates who took the examination, or parts thereof, on one or other of the two dates, seven of whom were successful in passing Parts I and II, three in passing Part I only, and one Part II only. Five others passed in single subjects, a special concession having been granted to prisoners of war to take one subject at a time if they so desired. A commendably high standard of marks was reached by the candidates. Seventeen candidates in Germany entered for the May 1943 examination.

### ASLIB Training Course in Special Librarianship

OWING to the fact that many skilled and experienced librarians have been called up for various forms of national service, there is now great difficulty