scripts of sufficient importance and authenticity would also be listed. Where, however, only incidental mention is made of plant localities, as in many of the standard floras of Britain and in monographs, these would be omitted from this section. The compilation will entail a large amount of research and will be possible only with the co-operation of helpers who have the requisite local knowledge of the literature of their areas. The editors are Mr. J. S. L. Gilmour, Mr. H. A. Hyde, Mr. H. S. Marshall, Mr. N. Douglas Simpson and Dr. G. Taylor. Those willing to help in this compilation should communicate with Mr. N. Douglas Simpson, Maesbury, 3 Cavendish Road, Bournemouth, Hants, indicating when they can begin work, in what areas they are interested and to what libraries and periodicals they have access.

Early Scottish Prehistory

IT is doubtful whether it can be proved that any cultures earlier than the Mesolithic existed in Scotland. This is perhaps surprising, as there would seem to have been no climatic reason why Scotland should not have been habitable during the main interglacial epoch in the middle of the Great Ice Age in any event. Maybe the scanty populations of the Old Stone Age never reached the extreme north-western edge of the Old World. Mesolithic industries contemporary with those farther south have been unearthed at a number of sites. But many of the apparently Mesolithic industries in Scotland are actually much more recent in date and contemporary with the Neolithic or even early Metal Age farther south. Even in the Cleveland hills of Yorkshire, sites are known where pigmy tools of Mesolithic facies occur in real association with leaf-shaped arrowheads. Such an overlap of cultures is not surprising. The Neolithic civilization in Britain was rather due to the incoming of new modes of life than to hordes of invaders; in large part it was a case of 'neolithicizing' the autochthonous inhabitants. Off the beaten track, the older culture continued to survive, influenced to a greater or less degree by the more advanced ideas spreading slowly over the land.

Much of our information of these early cultures in Scotland is due to the work of A. D. Lacaille, who is collecting a corpus of material for eventual publication after the War. Recently, he gave a paper to the Society of Antiquaries of Scotland on the stone industries associated with the raised beach at Ballantrae. The sites are in Wigtownshire and south Ayrshire, and the specimens were collected on the tilled surface of the raised beach, which itself dates to the period of the Littorina Marine transgression. With the specimens of Mesolithic facies were found others, Neolithic in appearance. The evidence would seem to point to the introduction there of the Neolithic civilization towards the end of the Atlantic post-glacial phase. Among the Mesolithic types of implements occur specimens which recall some found in northern Irish sites. Thus tanged points resembling those from the valley of the River Bann have been found. Mr. Lacaille's definitive publication will be awaited with interest. There is still a lot to be learnt about the cultural overlaps in Scotland and the various influences that went to form the earliest Stone Age cultures north of the Cheviots.

Archæological Expedition to Mexico

THE War has forced the National Geographic Society to curtail its scientific field expeditions, but the archæological studies that have been made annually since 1937–38 in southern Mexico under the sponsorship of the Society and the Smithsonian Institution will continue. The seventh expedition, headed by Dr. Matthew W. Stirling, is on its way to the southernmost Mexican State of Chiapas where, digging into huge burial mounds and clearing dense jungle growth, he will continue to reveal some of the secrets of pre-Columbian civilization in this hemisphere. Dr. Stirling is accompanied by his wife, Marion Stirling, who is also an archæologist, and Richard H. Stewart, staff photographer of the National Geographic Society. The expedition this year plans to conduct its studies in the mountains east of the Isthmus of Tehuantepec.

Social Implications of Engineering

ON March 28, Sir Harry Railing, president of the Institution of Electrical Engineers, delivered an address to the London Students' Section of the Institution, taking as his subject the social implications of engineering. Sir Harry stressed that it is essential for the engineer to grasp the inner meaning of his work and the mission he has to fulfil in his everyday life. To do this, a full appreciation of past achievements is necessary, and he must feel that, however small or large his contribution, he is a vital unit in a powerful living force. Material progress has been so remarkable that too little attention has been paid to the development of the lives of human beings. Humanity should have been trained and encouraged to accommodate itself to the increased impetus of science and engineering, so as to avoid a disastrous piling up of pent-up energy. Engineers should have foreseen these consequences more clearly and made the world realize that increasing material knowledge necessitates the acceptance of new responsibilities both on the part of the individual, the community and the State.

Sir Harry Railing does not believe in early specialization. When specialization becomes necessary, engineers should retain a broad understanding of the work of others in as wide a field as possible. Of the relative value of the methods most useful in engineering work, mathematics and physics are of paramount importance. But engineering involves also the handling of human beings, and it vitally affects their lives. A broader understanding of sociological problems is necessary, and if the engineer's work neglects the spiritual aspect it is liable to be a dismal failure. For the well-being of the community the scientific approach should be applied to social problems and politics, but its limitation should be borne in mind. Man is finite, not infinite, and from this should spring humility and tolerance of others.

Jubilee of the *Astrophysical Journal*

WITH the current issue of the *Astrophysical Journal*, this periodical completes its hundredth volume. Founded in 1895 by Hale as an international review of spectroscopy and astronomical physics, the *Astrophysical Journal* soon became the acknowledged medium for the publication of research, and especially of observational research, by English-speaking astrophysicists. Although the original plan of appointing collaborating editors from countries other than the United States has been recently abandoned, the international character of the journal is still attested by its contents pages. During the past fifty years such famous names as those of Cornu, Huggins, Belopolsky, Kayser, Schuster, Newall and Alfred Fowler have appeared beside those of their American colleagues,

and such contemporary names as Adams, Millikan, Russell, Shapley and Otto Struve are likely to be as well remembered in the future. Nearly all the major spectroscopic and astrophysical advances of the past half-century are recorded in the first hundred volumes: the Fabry-Perot interferometer, the Rowland solar wave-length table, the first photographic trigonometrical parallaxes and spectroscopic parallaxes, the 100-in. telescope, the Einstein and the nebular red-shifts, 'nebulium' and super-novæ, to mention only a few. With the completion of the 200-in. telescope after the War, science may look to see its boundaries enlarged yet again in the pages of the *Astrophysical Journal*.

Temperature Compensation in Instruments

A PAPER read recently in London by Dr. G. F. Tagg before the Institution of Electrical Engineers has for its theme the fact that one cause of errors in indicating and recording instruments is their use at a temperature other than that at which they were calibrated. Most of the physical properties of materials on which instrument performance depends vary to a greater or less degree with temperature. It is therefore necessary when designing an instrument to reduce to a minimum any errors caused by changes in temperature, and if possible to make them negligibly small. This is done either by adopting a design such that the temperature errors themselves are very small, or by introducing other changes with temperature which will compensate them. An account is given in the paper of the more common methods employed, each method being briefly discussed to indicate the best arrangement for each type of instrument. The instruments considered are ammeters, voltmeters, millivoltmeters, wattmeters and rectifier-operated and thermocouple instruments.

Recent Earthquakes

DURING the third quarter of 1944, fifty-eight earthquakes and tremors were recorded at Toledo, Spain, while during the same quarter twenty-six strong earthquakes were recorded at the Dominion Observatory, Wellington, New Zealand. The earthquake of October 29 was felt with Scale 5 (modified Mercalli) in the southern parts of North Island and Taumarunui; the shock of November 25 was felt at Karamea with Scale 4 and that of December 24 was felt at Timaru with Scale 3 intensity. The United States Coast and Geodetic Survey determined the epicentres of several shocks which occurred during the quarter. On October 23 the epicentre was in Ecuador, South America; on December 7 (lat. 33° N., long. 137° E.) off Japan; on December 10 in the New Hebrides Islands and on December 12 in the Aleutian Islands.

The Ray Society

AT the annual general meeting of the Ray Society held on March 22, Mr. A. D. Cotton, president of the Linnean Society, was elected a vice-president and Prof. F. Balfour-Browne, Dr. W. S. Bristowe and Dr. John Smart new members of Council. It was announced that Dr. F. E. Zeuner's volume on "The Pleistocene Period" would soon be ready for distribution, and that Dr. Dawes's work on "The Trematode Parasites of British Fishes" was nearly ready for printing. Owing to the increase in costs, Dr. Zeuner's book will form the issue to subscribers for the two years 1942 and 1943, and it is intended that Dr. Dawes's volume shall be issued for the year 1944. Other works are in preparation, but no dates can yet be announced for their probable publication.

Oliver Lodge Scholarship

IN order to commemorate the silver jubilee of the Radio Section of the Institution of Electrical Engineers, the Council of the Institution has founded a research scholarship which is to be called the Oliver Lodge Scholarship. It will have a basic annual value of £250 and will be tenable for one year, but may be extended for a second year. The Council wishes to encourage scholars to travel and, after approval of a candidate's programme, may make an additional grant for this purpose. The scholar will be required to carry out research in a subject closely allied to radio engineering. Further particulars and nomination forms can be obtained from the Secretary, Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2. The closing date for receiving nominations is May 15, 1945.

Announcements

THE following have been elected by the Governing Body to honorary fellowship of the Imperial College of Science and Technology: the Most Hon. the Marquess of Crewe, Mr. C. S. Garland, Mr. Percy Good, Dr. Andrew McCance, the Right Hon. Lord Rayleigh, Prof. J. S. Truscott, Lieut.-General Sir Pierre Van Ryneveld, Prof. W. W. Watts, Prof. A. N. Whitehead and Dr. H. E. Wimperis.

MR. O. S. PUCKLE, recently of the Research Department of Messrs. A. C. Cossor, Ltd., has been appointed chief engineer of R. F. Equipment, Ltd., Plantation Road, Amersham, Bucks, with a seat on the board. In particular he will be responsible for research and development.

THE posts of inspector-general of forests to the Government of India and president of the Forest Research Institute and Colleges have been separated. A separate post of president of the Forest Research Institute and Colleges, Dehra Dun, has been created; this post is being filled by Mr. C. E. Simmons. The inspector-general of forests (Sir Herbert Howard), with his office and staff, has been transferred to New Delhi. His address in New Delhi will be "Inspector-General of Forests, Department of Education, Health and Lands, New Delhi", and his telegraphic address will be "Igforest, New Delhi". All correspondence connected with research and education at Dehra Dun should be addressed to the President, Forest Research Institute and Colleges.

TRINITY COLLEGE, Cambridge, has decided to resume in the present year the annual offer of a research studentship which has been suspended since 1941. The studentship is open to graduates of other universities who propose to go to Cambridge as candidates for the degree of Ph.D., provided that on June 1, 1945, they have not commenced residence in the University of Cambridge and are not more than twenty-six years of age. In computing the age of a candidate for this purpose, any days of war service will be deducted from his actual age. Candidates should apply through the principal authority of their university, and applications should reach the Senior Tutor of Trinity College (from whom further particulars may be obtained) before June 1, 1945.