

biplane of 1903 and the Vickers-Vimy trans-Atlantic aeroplane of 1919. A Blériot monoplane, type XI (Cross-Channel type), was flown by M. Leon Molon at Doncaster in October 1909, where it gained a height record. It has a speed of about 40 m.p.h. and is similar to the machine in which Louis Blériot made his historic crossing of the Channel from the French coast to Dover on July 25, 1909. Another Blériot (type XXVII) with a speed of 80 m.p.h. is the original Gordon Bennett Cup racing machine which Alfred Leblanc flew at Long Island, U.S.A., in 1911. These machines represent the aeroplane in an early stage of its development as a mode of transport—still experimental and confined mainly to exhibition flying and competitions. No degree of standardization had then been reached, and the aeroplane was not regarded as a really proved instrument; the position was still one of uncertainty as to the future of flight. The advent of the Great War in 1914 had, however, a profound effect on the aeroplane, and it produced an intensive development which may be estimated from the example of a Sopwith "Camel" of 1917, a famous fighter scout which was the first aeroplane to be fitted with twin synchronized guns and had a performance undreamt of in 1909, namely, a speed of 113 m.p.h. at 10,000 ft. and a climb to 5,000 ft. in five minutes. An actual wartime Fokker D.VII fighter, which belonged to Jagdstaffel 71 of the German Air Force, also shows the rapid development of the aeroplane for military uses which resulted from the stimulus of war. Another famous aeroplane of the War period is the Vickers-Vimy bomber, which made the first non-stop flight across the Atlantic on June 14–15, 1919, piloted by the late Sir John Alcock with Sir Arthur Whitten Brown as navigator, now exhibited in Gallery VI.

#### An Early Wet-Plate Folding Camera

VALUABLE additions to the photography collections at the Science Museum, South Kensington, include a complete outfit for the wet-plate process, of date 1854, presented by His Grace the Duke of Devonshire. The outfit comprises a folding wood camera by Ottewill, a sensitizing bath, and a complete set of chemicals and reagents in its original leather carrying case. These objects are all of considerable interest as showing the types of apparatus and accessories necessary for "photography in the field" in the early days of the "photographic art".

#### Water Pollution

THE forty-sixth Bedson Lecture was delivered by Sir Robert Robertson on May 8 in King's College, Newcastle-upon-Tyne. Sir Robert confined himself to two recent investigations connected with the subject of water pollution. The first of these concerns the pollution problems of the River Tees. A thorough biological and chemical survey of this river has been carried out. This has shown that, whilst the river is unpolluted until its union with the Skerne, the entry of sewage from Darlington in this tributary causes appreciable pollution of the lower reaches. In the estuary, the condition of the river is

rendered much worse by industrial refuse containing cyanide. As a result of the investigation, the sewage disposal system of Darlington has been improved, and several undertakings upon Teeside have modified their plants, so that cyanide does not enter the river. With regard to the second topic—the disposal of milk factory waste—Sir Robert said that diluted milk, on account of its easily oxidizable nature, is a potent fish poison. As a result of its consistency, the refuse is difficult to treat by ordinary filtration methods, and success was first obtained by a modified activated sludge process. However, better results have been obtained by use of two filters in series. The refuse is passed first to one filter, *A*, and thence to the second, *B*. When *A* shows signs of clogging, usually in about three weeks, the direction of flow is reversed, that is, the liquid passes first to *B* and then to *A*. Filter *A* then recovers, and in due course the direction of flow is again reversed, and so on.

#### A Utilitarian Classification of Fragmentary Fossils

It is generally understood that the generic and specific names given to fossils cannot often be defined so precisely as those given to existing organisms. It is also recognized that the classification of extinct genera into families and orders is not always satisfactory. At the same time, readily distinguishable fossil fragments with definite characters need names, because they can frequently be used to determine the geological age of the rocks in which they occur. Such names are now proving especially useful in the microscopical study of sponge spicules, holothurian and echinoid spicules, plates of star-fishes and crinoids, conodonts, fish teeth and scales, otoliths, pollen grains, and other fragments which denote special conditions or mark horizons in series of rocks. The names are always in the Linnean form, and the so-called genera and species are grouped into so-called families and orders on the Linnean plan. Prof. Carey Croneis, in a recent letter to *Science* (89, 314; April 7, 1939), and in an earlier article in the *Journal of Geology* (46, 975–984; Oct.–Nov. 1938), points out that this classification is misleading. For the various grades he proposes adopting the terms used in the old Roman army: for species he would use 'centuria'; for genus, 'manipulus'; for family, 'cohors'; and for order, 'legio'. He would thus distinguish a utilitarian classification from one which has the appearance of being natural.

#### Prevention of Road Accidents

THE report of the Select Committee of the House of Lords, appointed to consider what steps should be taken to reduce the number of casualties on the road, is discussed in *Roads and Road Construction* of May. It is pointed out that since 1910 the number of vehicles on the roads has increased twenty times, and in addition there has been a marked increase of mileage run per vehicle. During the same period the increase in road production is only about two per cent. The Committee is unable to accept the con-

clusions of the Ministry as to the causes to which these accidents are attributed. First, only one cause has been assigned to each accident, although the blame should be distributed in various proportions between road conditions, the road user, the vehicle and both parties involved in the collision. Secondly, the system of police reports on road accidents is often inadequate. Thirdly, the vehicles are sometimes so damaged that it is impossible to say whether they were defective or not. Fourthly, the Committee does not agree with the general principle on which the Ministry proceeds, that even if the condition of the roads and cars was unimpeachable the total of accidents would not be appreciably affected. The Committee believes that segregation of drivers, cyclists and pedestrians on the main roads must come and that the attainment of this ideal is essential if road safety is to be ensured. The highway code should be revised and it should be given the force of law. Witnesses before the Committee were strongly of opinion that an extensive and persistent campaign of educational propaganda should be undertaken and that it should be aimed at every class of road user. The improvement of main roads and the construction of new roads should be carried on simultaneously. 'Lay-byes' and 'draw-ins' should be made on every few miles of highway. The costly system of erecting kerbs should cease and guard posts should be erected 18 inches outside the edges of roads, at suitable intervals, sloping outwards at an angle of 15° from the vertical and provided with reflectors. Many other useful suggestions are made and we hope that some of them will be adopted.

#### The National Botanic Gardens of South Africa

IN September 1938, the National Botanic Gardens of South Africa, at Kirstenbosch, and the Botanical Society celebrated their silver jubilee, and in the close of the year was produced a special number of the *Journal of the Botanical Society* with some very fine photographs, which show something of the beauty of the Kirstenbosch Botanic Garden with its ideal site on the slopes of Table Mountain. The number contains a brief note by the editor, Prof. R. H. Compton, upon the history of the Gardens, the site of which was selected in 1913 by the late Dr. Pearson, then professor of botany at the South African College. On a motion by Sir Lionel Phillips, the House of Assembly and the Senate passed unanimously in that year a motion that Kirstenbosch, bequeathed to the people of the Cape by Cecil Rhodes as part of his great Groot Schuur Estate, should be granted by the Government as the site of the National Botanic Gardens. The Government consented, making an annual grant towards its support, and at the same time the Botanical Society was formed, with some three hundred subscribers, to enlist public support for the new venture. The early onset of the Great War and the subsequent financial depression has caused delay, but the Director can record many striking indications of progress in the Gardens, and the Botanical Society has now nearly 2,000 members enrolled.

#### Biology in Education

THE Educational Advisory Board of the British Social Hygiene Council is attempting to give a new orientation to the teaching of biology by bringing it more into touch with individual needs and social problems of to-day. With this aim in view, a Summer School has been arranged at Keble College, Oxford, during July 28–August 4. The School is primarily intended for teachers and others who are concerned with the place of biology in education, but membership will be open to anyone who is interested in the biological problems of modern human life. The inaugural address will be given by Prof. J. Scott Watson. One section of the School will deal with current problems in social biology and their repercussions on the school-child, and another section will be concerned with problems of personal growth and development. These sections will be contributed to by lecturers with considerable experience in their particular fields. The third course will include lectures on subjects of topical interest by prominent workers in biological research, including Mr. C. S. Elton, Dr. S. Zuckerman, Dr. H. N. Sinclair and Dr. Keith Murray. There will be considerable opportunities for discussion, while excursions to places of academic interest are being arranged. Further particulars can be obtained from Mr. T. H. Hawkins, Education Officer, British Social Hygiene Council, Tavistock House South, Tavistock Square, London, W.C.1.

#### The League of Nations Union

A LEAFLET issued by the League of Nations Union for the assistance of teachers preparing to address their pupils on Empire Day emphasizes the part played by representatives of the British Empire in drafting the Covenant of the League, which is described as a first attempt to apply on a world scale the ideals of democratic government common to the British Commonwealth of Nations and the United States of America. It suggests the possibility of a federation of these and all other democratic States and the sharing of the control of colonial territories and our responsibilities for the development of colonial peoples to full nationhood. The League of Nations Union's arrangements for the summer include: (a) for schoolboys and schoolgirls, 'Nansen Pioneer' camps in Devon, Shropshire and Peeblesshire and a summer school at Geneva, and (b) for educational administrators and teachers, a conference to be held partly at Geneva, where members will attend the lectures and discussions of the Geneva Institute of International Relations, and partly at a mountain chalet.

#### The International Seismological Summary

THE April, May and June 1933 number of the *International Seismological Summary* has just come into the hands of those recipients who previously stated their wish to have copies straight from the press rather than wait until the annual set could be prepared and bound. This number consists of 148