

its component parts function, what changes are taking place in it and in what directions it tends to develop. Delay in publication has enabled Dr. Smith, in succeeding chapters on the new dynamic Colonial policy, advances in sociological research and the place of anthropology in planning, to take account of events since the address was given, and to assess how far the purpose of government is now not merely the maintenance of security and order but also the general social betterment of the people, and the extent to which the five-year and ten-year plans which Colonial governments have drawn up in broad outline meet his criteria for success. He points out that the recent review of the Colonial Empire, 1939-47, recognizes the importance of research into the nature of native society and its institutions, and he believes that the International African Institute has not only influenced the progress of social anthropology in Great Britain but also the British Government's decision to finance scientific research in Africa. He agrees that the value of social anthropology to the arts of politics and administration depends upon its theoretical advance, but holds that there is room for anthropological study which is at once scientific in method and directed towards the solution of practical problems. While we may differ as to ultimate values, there is much common ground, and in the spheres of nutrition, education, and the improvement of economic and social conditions the anthropologist may join his efforts with those of other scientific workers.

University and Research Section of the Library Association

THE University and Research Section of the Library Association held its twelfth week-end conference during September 10-13 at the University of Birmingham. It was attended by ninety members, with Dr. Arundell Esdaile in the chair, and colleagues from Australia, Denmark, India, Sweden and Venezuela were present. The conference was welcomed to Birmingham by Dr. Wilfred Bonser, University librarian, who outlined the plans for the new University Library to be erected at Edgbaston. The chief speaker at the conference was Dr. S. R. Ranganathan, president of the Indian Library Association and formerly librarian of the University of Madras. Taking as his theme "The Challenge of the Field of Knowledge", Dr. Ranganathan pointed to the declaration made at the Royal Society Scientific Information Conference that in future librarians must be regarded as equal in standing to fellow men of science employed in research, industry and administration, and that they should receive comparable training facilities, rank and emoluments, as marking a definite advance. He showed how difficult it is for the librarian to satisfy the many needs of scholars—and especially of scientific workers—as the various fields of knowledge continually expand and overlap, particularly as seen from the point of view of library classification schemes. He demonstrated the principle and practice of the scheme known as Colon Classification, of which he is the author. During the week-end, visits were paid to the various sections of the University and other libraries at Birmingham, and the information departments of the Austin Motor Works and of Imperial Chemical Industries (Metals Division). The formal business of the annual general meeting of the Section on September 12 was followed by an account by Mr. C. C. Barnard, librarian of the London School of Hygiene and Tropical Medicine, of

a visit to Hanover in May of this year as a representative of the Section at a conference of German librarians. The Medical Sub-Section held a meeting devoted to a symposium on cataloguing problems in medical publications, and also visited the Birmingham Medical Institute.

Elimination of Water from Wet Crude Oil

IN a paper on the "Elimination of Water from Wet Crude Oil obtained from Bituminous Sand by the Hot Water Washing Process", by K. A. Clark and D. S. Pasternack of the Research Council of Alberta, University of Alberta, Edmonton (Reprinted from *Canadian Chemistry and Process Industries*, 1947), the authors deal with this problem from two angles, by continuous settling at atmospheric pressure and settling under pressure with evaporation; they have carried out much laboratory work towards its solution. In the first case, wet crude oil from the separation plant is mixed with a diluent (either 'topped' crude oil with S.G. 0.85 or kerosene with S.G. 0.82) and subjected to continuous settling in a suitable laboratory plant (illustrated). A ratio of diluent to crude oil of 0.7 and settling temperature 180° F. results in reduction of water content from 40 to 11.5 per cent. It is found that boiling and frothing of wet diluted crude oil before feeding to the continuous settler improves settling of water by causing coalescence of finely dispersed water, hence increase in volume of water ultimately settling out. The authors emphasize that continuous settling of diluted crude oil is not the complete answer to total elimination of water and that a subsequent operation is required to reduce the amount of finely dispersed water to limits acceptable to a refinery. Concerning mineral matter normally associated with the crude oil, it is pointed out that sand and silt readily settle out; but finely divided clay matter is carried within the finely dispersed water, possibly acting as a stabilizer, and this does not settle out, presumably because the emulsion will not break down under the conditions obtaining.

In an attempt to formulate the 'subsequent operation' above, experiments were carried out with continuous settling under pressure at an elevated temperature; but it was found that heating diluted oil up to 323° F. in this way did not cause finely dispersed water to coalesce. Further, water which does settle, does so as a gelatinous emulsion which will not flow to the discharge valve unaided by mechanical means. Hot oil and water, as is well known, make an unsatisfactory mixture at all times; but it is worse than ever with bituminous sand oil. The conclusion reached is that pressure settling is not practicable, that atmospheric settling of diluted crude oil is the first step, to be followed by evaporation in a heater and steam separator; in this way a practically dry oil can be obtained from bituminous sand, one which can then be more easily refined.

An Attempt to Detect the Magnetic Field of a White Dwarf

DR. A. D. THACKERAY has now published a description of his attempts to test Blackett's prediction on the magnetic field of massive rotating bodies (*Mon. Not. Roy. Astro. Soc.*, **107**, 5 and 6; 1947). Blackett pointed out that the ratio between the magnetic moment and the angular momentum of the earth and sun was approximately the square root of the gravitational constant divided by the velocity of light, and that this also applied to 78

Virginis (*Nature*, 159, 658; 1947). He also dealt with the application of this formula to the white dwarfs and showed that in the case of Sirius B the equatorial field might be as much as 3×10^6 gauss. Such a field should lead to Paschen-Back splitting of the hydrogen lines of the order of 50 Å., and Thackeray gives a full description of his work with the 36-inch Common reflector at the Solar Physics Observatory, Cambridge, to detect this effect. Unfortunately, there is not a very wide choice of white dwarfs suitable for the experiment, and Wolf 1346, magnitude 11.3, was selected as it was attainable with a 1-prism slitless spectrograph attached to the 36-in. reflector. It was shown that Paschen-Back splitting of $H\gamma$ is unlikely to exceed 8 Å. in this star, corresponding to an upper limit of 10^6 gauss. It is emphasized that there is need for greater spectral purity in a discussion of an apparent structure in the lines, which is independent of the polarizing analyser. When 40 Erid. B became accessible in September 1947 a 2-in. $f/1$ aspherical singlet, figured and lent by Dr. C. R. Burch, was attached to the Newell 25-in. refractor for an attempt with the Wood aluminized grating spectrograph. An hour's exposure without 'Polaroid' was obtained on September 25, showing $H\gamma$ only, but exposures of one hour on September 25 and $3\frac{1}{2}$ hours on September 27 through the analyser failed owing to the formation of thick haze during exposure.

Recession of Glaciers

THE Royal Geographical Society has inaugurated its new *Research Series* with a paper by Prof. H. W. Ahlmann on glaciological research on the North Atlantic coasts (London: Royal Geographical Society, 1948. 7s. 6d.). Prof. Ahlmann puts together his own and other observations on glaciers in Norway, Iceland, East Greenland and Spitsbergen. All data point the same way, to a general recession, and the same is true in many other parts of the world. The present rapid shrinkage seems to be the last stage in a recession that began about two hundred years ago when the glaciers reached their maximum extension in historical, and perhaps in post-glacial, times. This recession has resulted too in a rise of sea-level, as noted by J. Thorarinsson, F. Bergsten and others. The increasing intensity of the recession is also shown by recent changes in the extension of the Arctic pack-ice, notably in the Russian Arctic and around Spitsbergen, the northward migration of fish and certain birds and the improved cereal prospects in Iceland. The phenomenon is so widespread that it would appear to be associated with climatic fluctuations. The chief meteorological cause is held to be due to increased ablation. Radiation plays a part; but conduction is more important in the smaller icefields and at lower altitudes. On the other hand, it is stated that in the high interior of the Greenland ice there has been no increased ablation or reduced thickness of the ice. The low-pressure area of the North Atlantic apparently has moved to the north in recent years, thus favouring the flow of warm air to the Arctic.

Gresham's School Natural History Society

THE twenty-sixth report of Gresham's School Natural History Society (1948) has just been received. Membership of the Society totals well over a hundred—an eminently satisfactory number for a school. The Society is divided into Archæological, Astronomical, Botanical, Entomological, Meteorological

and Ornithological Sections, all of which carry out valuable field work and present reports and papers to the Society. In the present report there are: (1) a survey of the flora of Holt and district, with an exhaustive list of plants observed; (2) an account of the surrounding insect fauna, together with lists of Lepidoptera and Orthoptera; (3) a descriptive account of the birds of the area, with a very comprehensive list and a detailed study of a fulmar colony. Extracts of papers submitted for the Holland-Martin Natural History Prizes (1944-47) are appended. The boys of Gresham's School are to be congratulated on their efficient and very valuable Natural History Society, which obviously encourages practical and field work to the utmost—a fitting basis for later work in natural history, and a great asset in their general education.

Dr. Franz Weidenreich on Human Evolution

A NUMBER of interesting papers by Dr. Franz Weidenreich are to hand. "The Trend of Human Evolution" is published in *Evolution* (1, No. 4; Dec., 1947), and "Some particulars of skull and brain of early hominids and their bearing on the problem of the relationship between Man and the Anthropoids" appears in the *American Journal of Physical Anthropology*, 5 (N.S.), No. 4 (Dec., 1947). In an article in the *American Anthropologist*, 45, No. 1 (Jan.-March, 1943), Dr. Weidenreich once again affirms his belief that Neanderthal man was the ancestor of *Homo sapiens*. The majority of physical anthropologists will probably not agree with the theories set forth in "The Neanderthal Man and the ancestors of *Homo sapiens*", but nevertheless Dr. Weidenreich can never be ignored with impunity. The last article comes from the *Transactions of the New York Academy of Sciences*, Series II, 4, No. 1 (Nov., 1941). It is a lecture on the site and technique of excavation of fossil man in Choukoutien, China. No anatomical details of the finds are given; but the student will find conveniently set out the story of the discovery and the excavation.

The Sodes Place Research Institute

THE Sodes Place Research Institute, Dorking, Surrey, of MacTaggart and Evans, Ltd., industrial consultants, is described briefly in an illustrated booklet which this firm has issued. There are fifteen laboratories, besides offices, stores, dark room, library and semi-scale building and workshops. The Analytical Laboratory and the Physical Testing and Cement Laboratories are service laboratories carrying out analysis and testing for the rest of the organisation and to some extent for clients. The Spectroscopy and Microscopy Laboratories and the dark room, as well as the X-ray Analysis Laboratory, function both as service departments and as research laboratories, but the main chemical laboratory is used exclusively for research and development. The Physical Laboratory is used mainly for physico-chemical research and for determining physical constants, while the Electronics Laboratory deals with the application of electronic methods and servo-mechanisms to industry. Work is carried out either for a fixed fee, on a time basis, or for a monthly or yearly retainer; during the past few years problems relating to abrasives, adhesives, bricks, cast iron, cement and concrete, detergents, fibre boards, gelatine and glue, gypsum, lime, linoleum substitute, mineral oils, paint, plastics, printing, synthetic organic chemicals, strip steel, etc., have been handled.