

ideal summary of work dispersed throughout a multitude of different publications.

Aerial Surveys for Town Planning

THE urgent necessity for modern town plans required under the Town Planning Act has raised the possibility of meeting the demand by aerial survey. In most cases, less than two years remain for the completion of these plans. The Ordnance Survey at its existing strength cannot hope to meet this demand. A scheme outlined in the *Times* of May 5, however, promises to meet the situation, and the Ordnance Survey has promised its co-operation if local authorities make immediate revisions by air survey. The scheme would admit of the 16,000,000 acres of town planning areas in England and Wales being covered within two years. The country would be divided into sixteen units, of which eight would be photographed concurrently. On the reasonable assumption that 30 days in the year would be suitable for vertical photography, the work could be done in the two years available. Local authorities would be supplied with prints on a scale of 1 : 5000 and a set of transparencies on the same scale as the Ordnance sheets. The originators of the method are Messrs. H. Hemming, Ltd., and Economic Air Surveys, Ltd. The fully revised Ordnance sheets would follow later.

Aerial Surveys in the United States

AN extended scheme of aerial mapping in the southern States is planned under the United States Geological Survey in co-operation with the Shore and Geodetic Survey, the Census Bureau and other Federal bodies. The area to be covered, according to a report issued by Science Service, of Washington, D.C., is 40,000 square miles, selected from agencies in the States of Alabama, Arizona, Arkansas, California, Georgia, Louisiana, Mississippi, New Mexico, South Carolina, Texas and the District of Columbia. The maps will be used primarily in connexion with the agricultural census to be made in November next, but will have a permanent use as State records and for other purposes. The need for a more systematic land survey is indicated by the fact that air reconnaissances have already revealed the existence of vacant farms and waste lands not under cultivation hitherto unrecorded and consequently in some instances escaping taxation. There may be an extension of the scheme later to cover 1,000,000 square miles. As at present planned, it will take seventy days to complete at a cost of 650,000 dollars. The aeroplanes will have the co-operation of link-men on the ground under observation, and altogether 500 engineers with 1,500 assistants will be employed. The scheme is part of the programme of the Civil Works Administration for the relief of unemployment.

Records of the Maya

STUDENTS of American archaeology will welcome the publication by the Carnegie Institution of Washington of "The Book of Chilam Balam of Chumayel"—the Book of Balam the Prophet, which,

giving an account of certain matters pertaining to ritual and belief as recorded by the ancient Maya in their own language, is one of the most important pieces of documentary evidence relating to the early history of Yucatan known to scholars. The book has been edited by Mr. Ralph L. Roys, who for the first time has applied the principles of classical scholarship to the establishment of a standard text. The text is accompanied by a translation and annotations by the editor. There are several versions of the Book of the Prophet Balam, each known by the name of the village to which it belonged originally, such as that of Tizimin, Ixil, or Nah. That of Chumayel, with those of Tizimin and Mani, have the greatest value for the study of Maya civilisation. Chilam Balam, whose prophecies are recorded among the matter in his book, lived at the end of the fifteenth century and the beginning of the sixteenth. The Chumayel version dates only from 1782; but there is little doubt that the greater part of it has a pedigree as an authentic copy going back to the sixteenth century when the Maya wrote down in the European script, but in their own language, prophecies, chronicles, rituals, myths, calendrical matter and medical treatises, much of which would appear to have been transcribed directly from the hieroglyphic manuscripts afterwards destroyed and proscribed by the Spaniards. The original manuscript of the Chumayel version has disappeared, and the present text has been prepared from photographic copies.

Nature Sanctuaries in Zululand

NATAL possesses five sanctuaries for wild life, and all, with the exception of the bird sanctuary at St. Lucia and False Bay, have special interest on account of the rare mammals they contain—the Umfolosi has the only surviving herd of the southern white rhinoceros. The reserves have been threatened to some degree because of the fear that their mammals preserved a reservoir of the trypanosomes of the cattle disease, nagana. But it may be accepted that the destruction of big game is a futile method of controlling the tsetse-borne disease, and that the reserves may well be retained, since they occupy areas unfitted for agriculture on account of endemic nagana, malaria, insufficient rainfall or poverty of soil. Indeed, in a pamphlet on "Natal's Nature Sanctuaries in Zululand" E. K. du Plessis urges that they should be properly established and made statutory, that they should be provided with suitable approaches to encourage tourist traffic, and that they should be surrounded by a three-mile buffer-zone, to prevent shooting parties from slaying animals on the very border of the reserve. It is further suggested that the shooting season should close at the end of September, since the does are in young by October, and that all-year licences for shooting should be discontinued.

Lancashire and Cheshire Fauna Records

THE issue of the nineteenth annual report of the Lancashire and Cheshire Fauna Committee for the

year 1932 adds *Plastoscira Egertoni*, from Rostherne Mere, Cheshire, as a new species to science, while a list of a hundred new species added to the faunistic records for the two counties includes 38 Mallophaga on the birds and mammals, which Mr. H. Britten is investigating, 20 Diptera, 17 sawflies, 10 Coleoptera, 9 Hymenoptera, 3 Anoplura, and one each of Lepidoptera, Arachnida and mites. The avi-fauna records for the year include the nesting of the golden-eye and of the pochard in Cheshire for the first time, and the occurrence of a flock of knots (*Calidris c. canutus*), estimated to number 7,000, on the Lancashire coast in July. White-fronted geese and grey lag geese are increasing in north Lancashire in winter, while tufted ducks, teal, shoveller and little owl are also reported to be increasing in parts. The main colony of Sandwich terns on Walney Island, Lancashire, was wiped out by the herring and lesser black-backed gulls, the colony of which, established five years ago, has assumed alarming proportions. The terns from Walney went to nest at Ravenglass ternery where the Sandwich terns have increased from 12 pairs in 1930 to 70 in 1931, and 370 in 1932. The ruff (*Philomachus pugnax*) is still a regular autumn migrant and records are made of the wood-sandpiper (*Tringa glareola*), green-sandpiper (*T. ochropus*), greenshank (*T. nebularia*) and grey phalarope (*Phalaropus fulicarius*) on passage, while large numbers of black-tailed godwits were seen in the spring on the coast. The Fauna Committee announces that it will dedicate Part 2 of its "Check List of the Fauna of Lancashire and Cheshire" to the late T. A. Coward, for many years one of the recorders of the Committee; Part 1 having been issued in 1930. Mr. A. W. Boyd is president of the Committee and H. E. Britten, Prof. S. J. Hickson and W. Mansbridge vice-presidents.

National Museum of Wales

THE annual report for 1932-33 of the National Museum of Wales shows with what fine spirit the people of Wales are supporting their progressive Museum. The opening of the exhibition galleries in the east wing threatened to be marred by the existence of a considerable debt upon the building; but a public appeal has resulted in the receipt of more than three hundred contributions, so that, as promised moneys come in, the debt will be finally extinguished. The Folk Industries Gallery in the new wing was opened to the public in July 1933. It illustrates a side of museum activity of much interest to the public. Amongst the exhibits are the plant of a woollen yarn factory, and series showing the whole range of the woollen industry in Wales, cider-making, sawing, fishing and pottery-making. An early cast-iron gate, an engine from Neath Abbey Iron Works and an early colliery train illustrate the transition effected by the Industrial Revolution. Special reference should be made to the reconstructions of a rural smithy and a wood-turner's shop.

Cabbages and Related Crops

THE second edition of Bulletin No. 53 of the Ministry of Agriculture ("Cabbages and Related

Green Crops"; H.M. Stationery Office, pp. 60. 1s. 3d. net) was issued in November 1933. It deals with the commercially useful variants of the wild *Brassica oleracea*, namely, cabbages and savoys, Brussels sprouts, cauliflowers, broccoli and kale. Details of cultivation in many districts are combined with extensive notes on the economic uses of various products, and numerous methods of marketing are given. Production and harvesting of seed are also discussed. The volume is designed to help the grower, and should do this effectively. A chapter on the cultivation of *Brassicæ* as farm crops has been added to the material published in the first edition, and the whole text has been improved by the incorporation of much recent knowledge.

Liverpool Observatory

THE report of the Liverpool Observatory and Tidal Institute for 1933 records several interesting matters concerning tidal records. Experiments were made with seismographs with the view of recording the tilting of the earth due to tidal loads as well as to thermal effects. An instability in the records was traced to distortion in the structure supporting the instruments. This was overcome and satisfactory records were obtained. The work is being continued with improvements in the instruments. Another important piece of work concerns a new method of prediction of mixed diurnal and semi-diurnal tides. Work was also done on the tidal bore of the Trent and on the tides of the Bay of Biscay. Tidal predictions have been worked out for various authorities.

Rainfall of the World

MOST maps hitherto constructed to show the mean annual distribution of rainfall are confined to the land areas and have no indication of rainfall over the oceans. Prof. W. Meinardus has published in *Petermanns Mitteilungen* (1934) a new rainfall map on a scale of 1:100,000,000 which shows the distribution over the entire surface of the globe. On so small a scale it naturally does not differ materially so far as land areas are concerned from Supan's and other maps, although it shows effectively the low precipitation in north and south polar regions; but over the oceans, and in particular the Indian and Pacific Oceans, there is much of interest. These details have been taken chiefly from G. Schott's oceanic maps. The map is produced in tints of two colours showing six different grades of rainfall.

Study of Cosmic Rays in Armenia

PROF. A. F. JOFFE, of the Physico-Technical Institute of the U.S.S.R., is sending out a scientific expedition to Erivan to establish a laboratory for the study of the cosmic rays. It is proposed to set up the station on Mount Alagöz, in Armenia, at a height of 14,400 ft. above sea-level. The object of this station will be to investigate the distribution of the cosmic rays. The leader of the expedition is Dr. D. V. Skobeltzin. It has also been decided to set up on the shore of Lake Gokcha (6,345 ft. above sea-level) an astrophysical observatory where a 16-in. reflector will be erected.