

SYSTEMATICS

Hope for Britain's Wildlife

from a Correspondent

ON April 11, 12 and 13 the Systematics Association held a symposium in Leicester to consider the changes which are occurring in the numbers and distribution of the principal groups of plants and animals in Britain. This was the first meeting with such a comprehensive cover since the Linnean Society's conference in 1935.

Professor K. Mellanby (Monks Wood Experimental Station and University of Leicester) opened the proceedings with a description of the environmental changes—climatic, population and industrial—with which the flora and fauna have to contend. He also summarized the general conclusions in the final contribution. Almost every speaker had used maps prepared by the Biological Records Centre at Monks Wood. The success of this centre depends on the help and collaboration it receives from many observers and recorders, professional scientists and amateurs alike. Professor Mellanby thought that this practical cooperation between conservationists augurs well for the future, and that it will encourage the scientists from the Nature Conservancy, who are being reorganized into the Institute of Terrestrial Ecology within the Natural Environment Research Council, to continue to direct their research into fields of wildlife conservation.

Dr F. H. Perring, also of Monks Wood, dealt with flowering plants. Some twenty species have disappeared since recording began, and fifty are classified as "endangered", but others, not all introductions, have extended their range considerably. Dr F. Rose (Kings College, London) dealt with bryophytes and Dr L. Hawksworth and Mr B. J. Coppins (Commonwealth Mycological Institute) with lichens. These groups have been used as delicate indicators of atmospheric pollution, and several species are endangered by such factors as tree felling and the general "tidying up" of old buildings and of the countryside generally. Dr W. E. Jones (University of Wales, Bangor) spoke on seaweeds, on which new studies by divers are extending knowledge.

Dr G. B. Corbet (British Museum (Natural History)) said that although six native species of mammal became extinct between Roman times and 1800, the remainder seemed to be holding their own. Dr J. T. R. Sharrock and Mr K. Williamson (British Trust for Ornithology) showed that there has been a net gain of five new species of bird entering Britain every decade since 1950, notwithstanding habitat destruction and human

persecution. This was a success story for practical conservation. Dr T. T. Macan (Freshwater Biological Association) and Mr A. Wheeler (British Museum (Natural History)) were both chiefly concerned with the success of introductions of invertebrates and fish to freshwater.

Mr I. Prestt (Department of the Environment) spoke on reptiles and amphibians, each of which have six British species. Several of these are really endangered, and the numbers of others, including the common frog, have decreased. Dr A. South (Sir John Cass College, London) showed that although some snails have suffered, some slugs are well adapted to modern agriculture and are now pests. The spores of pathogenic fungi are widespread according to Dr C. Booth (Commonwealth Mycological Institute, Kew), and records show the conditions which make their presence known (for example, disease outbreaks). Dr D. R. Reid (also from Kew) showed how fungal records are sometimes incomplete because collectors get up too late to see transient forms visible only soon after dawn.

Dr E. Duffey (Monks Wood) showed how records have improved, and the British list has lengthened, as a result of the recent efforts of the Arachnological Society. Only one spider is thought to have disappeared in recent years. Mr J. Heath (also of Monks Wood) described how habitat changes affect butterflies and moths, but showed that recently improvements in distribution often balance disappearances and the situation, generally, is not entirely unfavourable. In the cases of other insects, Mr J. C. Felton (Shell

Chemicals) and Mr K. G. V. Smith (British Museum (Natural History)) showed that, in the Hymenoptera and Diptera respectively, the species recorded increase yearly as studies are intensified. Mr Smith indicated that man is deliberately trying to exterminate flies which bite man. Professor Mellanby described how some human ectoparasites are faring; head lice are getting commoner because habitat improvement (longer hair) favours the insects.

The chief impression gained from the Leicester symposium was that although some species and many habitats are endangered by population, affluence, mobility and industrial growth, the position is not nearly as bad as is often suggested. The report of the World Wildlife Fund a few days earlier had given a quite different impression, stating categorically that "nearly a quarter of all Britain's vertebrate animals and plants are threatened" and listing, as seriously endangered species, many which are well known to be flourishing and increasing. At Leicester the speakers were recognized authorities on their groups. Though generally reasonably optimistic, they were in no way complacent, and frequently drew attention to dangers, though they all avoided the hysterical and counter-productive attitude unfortunately characteristic of some "ecologists" and, now, of the World Wildlife Fund.

PALAEOICHTHYOLOGY

Tetrapod Ancestry

from a Correspondent

THE lobe-finned fishes (rhipidistians) have long been regarded as the closest relatives of the tetrapods. Jarvik, who has worked on these fishes for almost

Nucleolar Single Stranded DNA

IN eukaryotic cells, as in *Escherichia coli*, newly replicated DNA can be extracted in a single stranded form and it has been suggested that replication of nucleolar DNA may be independent of the replication of the bulk of the genomic DNA of eukaryotes. These considerations led Almaric *et al.* to investigate the form of DNA that can be extracted from the nucleoli of ascites tumour cells and, as they report in *Nature New Biology* next Wednesday (May 9), single stranded DNA can indeed be extracted from the nucleoli of these tumour cells with hot phenol and cresol in the presence of para-aminosalicylate.

This single stranded nucleolar RNA does not, however, have the properties of newly replicated DNA; it remains constant for long periods of chase in

pulse chase experiments and so cannot be a replicative precursor of stable double stranded DNA. Moreover, the base composition and lack of complementarity with ribosomal RNA indicate that this single stranded nucleolar DNA is not related to ribosomal RNA genes in the nucleolus.

The kinetics of labelling, the base composition, the nucleolar localization and the lack of complementarity with ribosomal RNA all indicate that this single stranded nucleolar DNA comprises a discrete portion of the cell genome. Its function remains unknown, but Almaric *et al.* speculate that it may act as a recognition site and have some regulatory function. The existence of single stranded stretches of duplex DNAs with this function was suggested by Crick recently.