

## THE NUFFIELD UNIT OF TROPICAL ANIMAL ECOLOGY

IN the past few years biologists in general have come to realize the great importance of an intensive study of tropical animals, their ecology, and the conditions of their existence. It is not merely that tropical Nature is a source of invaluable scientific information which is in danger of vanishing through the changing of the face of the Earth by man. It is also that the fauna of tropical nature reserves gives us an opportunity of determining with precision the factors that control both the physiology of individual animals and the size of their populations under conditions as yet relatively unspoilt. We need critical analysis of ecological factors, aided by laboratory investigations, together with the physiological study of what makes tropical species so much more efficient for the production and maintenance of animal substance than species imported from temperate latitudes.

It was with studies of this sort in mind that, on the initiative of Sir Landsborough Thomson and the Zoological Society, in discussions with the Director of the Nuffield Foundation, a proposal to form a Unit of Tropical Ecology was developed and placed before the Foundation. The Foundation has accepted the proposal and given it most generous and substantial support. The University of Cambridge has readily accepted the proposal that the Unit should be controlled from the University.

The immediate objective of the Unit is to maintain one senior and one junior research worker in tropical ecology to work at the Queen Elizabeth National Park, where the Trustees of the Uganda National

Parks already have a small field station. The work of the Unit will, however, be controlled from the University of Cambridge, by a Committee under the honorary chairmanship of Prof. C. F. A. Pantin. The Committee will include representatives from the University of Cambridge, the Nuffield Foundation, the Zoological Society of London and the Trustees of the Uganda National Parks. It is an important part of the scheme that, while the field work will be done in Uganda, the research workers will spend substantial periods planning their work and studying their observations in the Zoological Laboratory at Cambridge. It is hoped that as the scheme develops other research workers will be encouraged to attack problems in Uganda, and also that it will lead to young research workers engaged on such problems coming to work at Cambridge. The authorities of Makerere College have already shown great interest in the Unit.

The Committee will be holding its first meeting early this year to consider staff appointments, and sent Dr. Hugh B. Cott to visit the field station in December and to make a first report. The promoters of the scheme have great hopes that the Unit will lead not only to important work on the ecology, physiology and environmental relations of tropical animals, but also to a greater contact between research workers in Britain and Uganda than has hitherto been possible: further, that the attack on animal ecology may later develop into a broader project, including plant ecology and the study of micro-organisms.

## BRITISH COMMUNICATIONS SATELLITE PROGRAMME

IN replying for the Government in an adjournment debate in the House of Commons on December 21 on a British communications satellite programme, which had been opened by Mr. A. Neave, Mr. G. Rippon, the Parliamentary Secretary to the Ministry of Aviation, welcomed the practical approach of speeches in the debate. Previously he had pointed out that communications satellites involve the use of a powerful launcher and that the project is thus distinct from the programme based on *Skylark*, the giant programme in the United States, and also the Preparatory Commission set up to study the possibility of establishing a European space research organization. Both British and American experts are confident that the purely technical problems can be solved within the next few years, and Post Office and Ministry of Aviation scientists and engineers are already carrying out joint work on the design of ground stations and satellites as well as of overall system design. This work is concerned with both technical and economic aspects of satellites. While the co-operation of industry will be sought at the appropriate stage, he did not think that there is anything to be gained by setting up a space communications committee at Cabinet level, as suggested by Mr. Neave.

Mr. Rippon pointed out that many different types of system have been proposed, but experts, both in the United States and in Britain, to-day appear to favour a system using active satellites which will carry radio receivers and transmitters, thus receiving, amplifying and re-transmitting signals instead of just reflecting. He promised to bear in mind what Mr. D. Price had said as to the possibilities of such a system.

The study of system design includes that of the type of orbit to be chosen for the satellites, which could be circular or elliptical, close to the Earth or far away. It is possible to choose a particular circular orbit for a satellite at about 22,000 miles from the Earth, and three such satellites could be so placed that one at least is visible and potentially available for communication purposes from every country in the world, except for certain limited areas near the poles. This system has some disadvantages, and it may well be better to have a larger number of satellites in closer orbit, for example, a dozen or two satellites at 5,000 or 6,000 miles, or 50 at 2,500 miles. Whatever orbit is chosen, there are formidable difficulties, and the technical problems to be overcome make estimates of cost necessarily speculative at this stage. Reliable information on the useful life of a

satellite is required, and this can only be obtained by experiment, for which the most promising area is the North Atlantic. Mr. Rippon hoped that such tests will take place in the next year or so, and said that Britain envisages putting two or three satellites into polar orbit. He also said that Britain is aiming at about 1,000 channels for an active satellite, but there is really no limit to the number of channels for a passive satellite.

Meanwhile, Britain will continue with construction of the submarine cables to provide for the communication needs of the Commonwealth, for which a programme, costing between £35 and £40 million, has been approved, covering the cable between Canada and the United States in 1961 and Canada and Australia in 1966. The United Kingdom's share will be less, and it may be found that cable and satellite communications are complementary indefinitely. As regards a launcher, the Government has kept in being those aspects of the *Blue Streak* project which can be of use in developing a satellite launcher. The scientific and technological skills have been preserved, and the teams necessary to develop a satellite launcher

retained: should such a launcher be developed, what Britain has done and is doing would enable her, or any other participating country, to formulate a programme and put satellites into orbit within the next five or six years. We have already concluded that, if a heavy satellite launcher were to be developed outside the United States or the U.S.S.R., there are substantial advantages for all concerned in doing so in co-operation with the Commonwealth and Europe. Mr. Rippon directed attention to the fact that Britain is keeping in close touch with Australia and Canada and other members of the Commonwealth, and, if the *Blue Streak* proposals are carried to completion, the facilities at Woomera will be used. The Government has also had lengthy discussions with the French Government on the joint development of a satellite launcher based on *Blue Streak*, and these have gone well. It is intended to ask interested countries to join in a conference early in 1961, and in the meantime individual countries are being invited to send their experts here for discussions and to judge for themselves the technical soundness of the British proposals.

## FUTURE OF THE COLONIAL AND THE COMMONWEALTH RELATIONS OFFICES

IN answer to questions in the House of Commons on December 13, the Prime Minister said that he is considering, in consultation with the Commonwealth and Colonial Secretaries, the recommendations regarding the future of the Colonial Office and the Commonwealth Relations Office made by the Select Committee on Estimates, and that the subject will be discussed with other Prime Ministers of the Commonwealth at their Conference to be held during March. Meanwhile, the problem of fusion is being studied to see whether some of the advantages of co-ordination can be secured without the disadvantages of combining relations with independent and dependent members in a single Office. In replying for the Government in a subsequent debate in the House of Commons on December 19, on the Select Committee's report, the Colonial Secretary, Mr. Iain Macleod, said that it is clear that the present policy of leading the dependent territories to full independence as early as is compatible with their educational, political and economic development is bound before long to lead to a stage when there is no longer justification for a separate Office, headed by a Secretary of State, to conduct the relations with the few small remaining dependencies. A Commonwealth Service is another matter, and the preference of the independent countries for independent recruitment and for local officers rather than expatriates destroys the basis of a Commonwealth Service. Meanwhile, the burden of work falling on the two Secretaries of State is too great for a merger to be practical for at least a year or two ahead. Moreover, territories which are reaching independence during the next few years will continue to require in their services expatriate officers in professional, technical and administrative posts, and the supply of such officers concerns both the Colonial Office and the Commonwealth Relations Office.

Ultimately, Mr. Macleod thought, the solution might well lie in the bringing together of the two Offices as the Select Committee recommends, but this is not yet practical politics. Meanwhile, the

Government has initiated a study of the possibility of creating a joint Department under a Minister responsible to the Colonial Secretary, the Secretary of Commonwealth Relations and the Foreign Secretary to handle under a single direction many of the forms of technical and advisory assistance which Britain provides to overseas countries whatever their status. Mr. Macleod stressed the importance of the contribution which Britain can make in technical assistance through the experience and knowledge of its men and women. It is accordingly proposed to defer consideration of the Select Committee's proposal for a Commonwealth Advisory and Technical Service pending the result of this examination. Mr. Macleod concluded with a warm tribute to the work of the Colonial Service and to the achievements of what is described as British colonialism. Britain can no longer offer many of the members of the Overseas Service the full cover which they have earned, and it is the Government's duty to ensure that everything possible is done to minimize any consequent hardship. He claimed that Britain has the finest organization in the world for providing professional and technical assistance to underdeveloped territories, and the men and women of the Overseas Service and their predecessors have a record of service of which all should be proud.

Mr. Macleod's tribute to the Colonial Service and his concern for the future of the men and women of the Overseas Service echoed what had been freely expressed in the debate, but although there appears to be widespread support for the merger of the two Offices caution was urged from both sides of the House. There is clearly concern that very big changes will be required in the Commonwealth Relations Office itself before it is fit to deal with the new situation and the needs of the newly independent members of the Commonwealth. In fact, there is much greater confidence in the ability of the Colonial Office to provide the advice, the experience, the skill and techniques that will still be required.