

NATURE

No. 4180 SATURDAY, DECEMBER 10, 1949 Vol. 164

CONTENTS

	Page
National Park Areas in Great Britain	973
Sir Frederick Gowland Hopkins. By Dr. A. B. L. Beznák	976
Quantum Theory of Fields. By Prof. L. Infeld	977
The Ways of Fishes. By G. A. Steven	977
Psychology in the Services	978
Liverpool School of Tropical Medicine: Fiftieth Anniversary	980
Human Problems of Work Design. By Dr. N. H. Mackworth	982
Biochemistry and Physiology of the Cell. By Prof. J. N. Davidson	984
Folic Acid, Vitamin B ₁₂ and Anæmia. By Dr. E. Lester Smith	986
Obituaries:	
Dr. A. P. Laurie. By Dr. P. D. Ritchie	987
Prof. Alexander Meek. By Prof. A. D. Hobson	988
News and Views	989
Galactopoietic Activity of Purified Anterior Pituitary Growth Hormone. By P. M. Cotes, J. A. Crichton, Dr. S. J. Folley and Prof. F. G. Young, F.R.S.	992
Radiation Effects Due to Phosphorus-32 in Fertilizer Experiments. By R. Scott Russell, S. N. Adams and R. P. Martin	993
Meeting of Bavarian Physicists. By Dr. Gabriele Rabel	995
Oil-fields of North-west Germany. By Dr. W. J. Arkell	996
The Electrical Engineer and the Community. By J. G.	996
The John Innes Horticultural Institution: Annual Report	997
International Conference on Science Abstracting	998
Letters to the Editors:	
The Scintillation of Stars.—Prof. H. Hartridge, F.R.S., and Dr. R. Weale	999
Inelastic Scattering of Deuterons.—Dr. J. R. Holt and C. T. Young	1000
Use of Bremsstrahlung in Making Rapid Assays of Millicurie Amounts of Phosphorus-32.—Tikvah Alper and Lorene du Preez	1001
A Short-lived Metastable State in Titanium-46.—B. D. Nag, Sunil Sen and Santimay Chatterjee	1001
Crystal Structure of Ovalene.—D. M. Donaldson and Prof. J. Monteath Robertson, F.R.S.	1002
Electrification of Liquid Drops.—E. W. B. Gill and G. F. Alfrey	1003
Atomic Binding Energies.—Dr. W. E. Duncanson and Prof. C. A. Coulson	1003
A Measurement of the Velocity of Light.—Dr. R. A. Houstoun	1004
Unsymmetrical Hysteresis Loops in a Nickel-Iron Alloy.—J. L. Rothery and Dr. An Wang	1004
Geodetic Measurements by Radar.—D. J. Halliday	1005
Use of Aspherical Surfaces in the Design of Magnifiers for Binocular Vision.—J. H. Jeffree	1006
Creation of Matter in the Universe.—T. Gold	1006
Effect of Muscular Exercise and of Urethane Administration on the Incorporation of Carbon-14 into Animal Tissue.—Prof. G. Hevesy, For. Mem. R.S.	1007
Hæmolytic by Newcastle Disease Virus.—Prof. F. M. Burnet, F.R.S.	1008
Enzymatic Degradation of Desoxyribose Nucleic Acid by Crystalline Desoxyribonuclease.—Dr. G. Jungner, I. Jungner and L.-G. Allgén	1009
'Vegetative Hybridization'.—L. Sachs	1009
Are Aquatic Phycomycetes Present in the Air?—Wan-nien Siang	1010
Enhancement by 'Visible' Light of Recovery from Ultra-Violet Irradiation in Animal Cells.—Dr. Harold F. Blum, Gordon M. Loos, Judith P. Price and J. Courtland Robinson	1011
Micro-Anatomy of the Hepatic Circulation.—Dr. W. H. Horner	1011
Andrews, Prof. B. G. Maegraith and C. E. M. Wenyon	1011
Water Content of Saliva Dried at Various Humidities.—O. M. Lidwell	1012
Extraction of a Specific Antigen from the Virus of Lymphogranuloma venereum.—C. F. Barwell	1013
Transpiration into a Saturated Atmosphere.—Dr. K. Wilson; Prof. D. Thoday, F.R.S.	1013
Veratrole and π -Complexes.—Dr. G. Baddeley and Neville H. P. Smith	1014
A New Intermetallic Phase in Alloy Steels.—Dr. K. W. Andrews	1015
Heating Metal Specimens in Corrosion Tests.—R. F. Thirsk, G. H. Botham and G. A. Dummett	1015

NATIONAL PARK AREAS IN GREAT BRITAIN

821

ALTHOUGH the National Parks and Access to the Countryside Bill was unopposed on its second reading in the House of Lords on October 19, as in the House of Commons, its reception was even chillier. For the objects of the Bill there was cordial and almost universal approval; but there was profound scepticism on all sides as to the adequacy of the Bill to achieve its objectives. By and large, the departures from the recommendations of the Hobhouse Report were regarded as likely to render the Act ineffective so far as the establishment of the system of national parks and Nature reserves and the preservation of natural beauty and amenity are concerned.

Cogent reasons were advanced by one speaker after another in the debate for a general lack of confidence in the willingness or ability of the present Minister of Town and Country Planning to make the Bill effective; but such misgivings were insignificant compared with the profound distrust of government departments manifest throughout the debate. Lord Samuel was prompt to seize on the ominous remark of the Paymaster-General, Lord Macdonald, in introducing the Bill, that the Government was not prepared to guarantee that the activities of the British Electricity Authority or other undertakings should not be allowed to despoil the areas which may come to be designated as national parks. Lord Samuel, like every other speaker, recognized that the national parks areas cannot be sterilized, and that one major problem is to reconcile the divers local interests in those areas with the national interests. He sought an assurance that every application from such undertakings would be most carefully scrutinized, and, where an alternative was possible, the Minister would not hesitate in a proper case to refuse sanction.

No such assurance was given, nor was there any indication that the Government has accepted the fundamental thesis in the whole conception of national parks in such a country as Britain: that there are some areas in which the supreme national interest is amenity. The failure to accept that thesis and adopt the appropriate safeguards accentuates the danger of the threats which come from government departments. As Lord De La Warr said bluntly, the problem of safeguarding amenity in most cases has become that of controlling the activities of government departments. The troubles that afflict the countryside of Britain are due mainly to Government departments or statutory boards set up by Government departments. Hitherto, as Lord Llewellyn observed, it has not been the formal duty of anyone to look after the preservation and enhancement of natural beauty in Britain; what we now need is authority to protect effectively the national parks from government departments and large nationalized undertakings, with their powers of compulsory purchase and freedom from challenge in the courts. Lord Hylton reiterated this point, and added that the Bill does nothing to solve the problem because the National Parks Commission and the local planning

Editorial and Publishing Offices of "NATURE"

MACMILLAN & CO., LTD.,

ST. MARTIN'S STREET, LONDON, W.C.2.

Telephone Number: Whitehall 8831

Telegrams: Phisus Lesquare London

Advertisements only should be addressed to

T. G. Scott & Son, Ltd., Talbot House, 9 Arundel Street, London, W.C.2

Telephone Number: Temple Bar 1942

The annual subscription rate is £4 10 0, payable in advance, Inland or Abroad

All rights reserved. Registered as a Newspaper at the General Post Office

authorities alike have no power, and hitherto the Minister of Town and Country Planning has not defended the interests of amenity effectively.

Lord Harlech was more specific in his assertion that the real threat to-day to the Showdonia National Park comes from the centralized bureaucratic government institutions, and he instanced the British Electricity Authority, the War Office with its artillery range in the middle of the Snowdonia National Park, and the Forestry Commission. He made a powerful plea for local administration, but urged that the National Parks Commission must have power against government departments and be able to make representations through a Minister to the Cabinet as a whole so as effectively to prevent undesirable activities of State departments. To Lord Harlech it was one aspect of a growing threat to the liberties of the people of Britain, to their amenities and to their whole traditional way of life, and in this view he had the warm support of Lord Pethick-Lawrence.

Lord Pethick-Lawrence was clearly dubious whether the Bill gave the Minister of Town and Country Planning any powers at all to preserve the countryside and to make it more accessible to the general public; but his remarks were directed chiefly towards scheduling of footpaths and the recovery of rights-of-way temporarily abandoned for public needs. He regarded that as of supreme importance; for unless steps are taken now, we may lose for ever the rights-of-way which were the joy, the glory and the freedom of the countryside. Lord Rochdale, supporting Lord Harlech's observations, directed attention to the need for seeing that no loopholes are left of which any government department or nationalized board could take advantage and start development without early and continuing consultation with the national parks planning boards or the National Parks Commission.

For all the strong feeling evinced in the debate on these points, there was abundant evidence that even those who are most anxious about the activities of government departments recognize that many of the demands for land are legitimate national interests. Land is required for hydro-electric development, for training areas, for catchment areas and mineral workings as well as other purposes, and at some level those demands have to be assessed and adjusted with other national interests such as amenity. That, however, is manifestly not being done, and Lord Macdonald, in winding up the debate, ignored this issue entirely. Like every other Government spokesman on this question, he declined to face the real issue that neither men nor departments should be judges in their own cause, and that it is for the independent body or Minister to decide whether the particular national interest involved is so urgent and vital that we must pay the price of what is involved in loss of beauty, scenic heritage or amenity.

Several points stressed in the debate have been emphasized in subsequent events and publications. Lord Esher suggested that one reason for the cool reception given to the Bill is to be found in the treatment the National Trust has received under it. Pointing out that the National Trust has consistently sought to create national parks on the lines approved

by the Ministry, and that the Trust has always encouraged the greatest possible degree of access to the 150,000 acres which it now owns in England and Wales, Lord Esher expressed regret that the Government does not propose to grant absolute exemption to National Trust land. It is clear, he said, that supporters of the national parks idea prefer a strong National Parks Commission to a Ministry of Town and Country Planning with greater powers. This is due to mutual distrust arising between the Ministry and the natural supporters of the Bill, and he hoped that the Government would, on the Committee stage, move an amendment as a gesture of conciliation which would remove such distrust before it is too late. That wish is reflected in the fifty-fourth annual report of the National Trust, since published, which records the Council's regret that the Bill is not based more closely on the proposals of the Hobhouse Report, and that the inalienable land of the Trust is not given complete exemption from the powers of compulsory acquisition provided by the Bill. The Council's concern that the 'special procedure' under which the Trust can insist upon any proposal to acquire its inalienable land being brought before Parliament affords insufficient protection is well founded while the Government overburdens Parliament so heavily, and is so manifestly unwilling to allow Parliament to take its proper role as the 'grand jury' of the nation. At the annual meeting of the National Trust on November 11, the speeches of Lord Crawford and Sir Norman Birkett expressed the same disappointment regarding the National Parks Bill.

Doubts that arise on this issue as to whether the present Bill will give the nation even any local-authority parks worth having are scarcely modified by what is already happening in consequence of the clause which enables the Minister to dispense with joint boards in special circumstances. In the debate on the second reading in the House of Commons, Mr. Silkin stated that it would be contrary to the purpose of a national park for different authorities to administer different parts of it in different ways. Only in exceptional cases would he consider an advisory committee at all. If the bulk of the area lay in one county and only small fragments in others, that might be a sensible arrangement. In the committee stage, however, Mr. Silkin suggested that where a number of authorities have been working well together, the best results might be secured by permitting these looser arrangements to continue rather than to constitute the joint board required by the Bill.

The chairman of the Joint Committee for the Peak District National Park has now reported that the County Councils of Derbyshire, Cheshire and Staffordshire have, acting on this hint, agreed to oppose the formation of a joint board for planning the proposed Peak District National Park. They suggest instead that each county council with territory in the Peak District National Park should remain in control of the planning of its own part, and that a joint advisory committee should be set up to co-ordinate the administration of the area as a whole. As a result the Peak District National Park, instead of being

planned by one authority with its own planning officer and staff, would be planned by five separate planning committees each with its own planning officer and staff, and each with headquarters several miles outside the national park itself.

It is not certain, of course, that the Minister would agree to this proposal; but it is to be hoped that the full significance of this clause will be made clear or its provisions tightened sufficiently to prevent evasions of this kind. There can be no substitute for a single planning authority if it is intended to plan and manage the national parks as they were conceived by the Dower and Hobhouse Committees. The maximum concession in this respect would be for the single local-authority planning committee to be appropriately constituted and made responsible even for those small areas in the national park which lie outside its normal county responsibilities.

The question of this escape clause and of the use of joint planning boards is raised in the Report and News Letter of the Friends of the Lake District issued last September. The publication of this News Letter was delayed until an account could be given of the National Parks Bill in the form in which it left the House of Commons. The News Letter points out that only one joint committee has been voluntarily set up by the authorities to cover the expected area of a future national park. That was in the Lake District. This committee met four times in its first year—and did very little. It did not meet in its second year and lapsed after July 1, 1948.

Besides its reasoned condemnation of the Minister's jettisoning of the principle of a single, unified and autonomous planning board for each national park, whether the area lies in one or in a number of counties, the News Letter also criticizes the nomination of a third of the national members on the Park Planning Board by the Minister and not by the Commission itself, although the Minister is to consult the Commission. Again, the News Letter challenges the limitation of the National Parks Commission itself to purely advisory and supervisory powers, and criticizes shrewdly the attempts to weaken its authority and status where there is any possibility of its views conflicting with those of government departments, even in such matters as its annual report. In the committee stage in the House of Commons an amendment was carried against the Minister authorizing the Commission to include in its annual report to Parliament particulars of any dealings held during the year between the Commission and any government department, local authority and statutory undertaker, with a summary of any evidence which may have been adduced by the Commission in the course of any proceedings. On the report stage, however, the Minister arranged for this amendment to be substantially modified, and the annual report is now to cover "all questions with which the Commission has been concerned . . . which appear to the Commission to be of general public interest". The Commission may, indeed, take a wider and proper view of the public interest; but the whittling of its powers will not make it easier to obtain men and women of the strong character and

personality required to serve on the Commission. If the conflicts between the Commission and other government departments are to be satisfactorily resolved, they must come back to Cabinet level and to the House of Commons, and the nation in the last resort. They cannot be allowed to rest with the Minister of Town and Country Planning. The News Letter hammers home this point, as was done in the House of Lords. The real threats to national parks and to amenity in Great Britain come from the government departments and the statutory bodies, and the vital question is what form the authority must take to restrain them effectively and prevent them any longer from being judges in their own causes.

One most effective weapon is publicity, and the News Letter of the Friends of the Lake District does well to direct attention to the danger that the National Parks Commission may be denied it to a sinister extent. On the other hand, the Commission has no stated right of access, especially at an early stage, to information about the activities of the British Electricity Authority or like independent corporations, and the course of the hydro-electric schemes for North Wales on which Lord Harlech spoke so eloquently in the House of Lords debate illustrates the vital importance of early information in such matters. As the News Letter rightly points out, the National Parks Commission will have, under the present Bill, no guaranteed right of a direct approach to any such corporation as the British Electricity Authority, and the strong opposition to the hydro-electric proposals for North Wales which has been organised by the Council for the Preservation of Rural Wales appears to depend on the unofficial or accidental divulging of information. In the reasoned criticism of the proposals which that Council has already issued, the Council has strengthened its general argument by the concessions it has made on specific points where the effects on the scenery and rural solitude of North Wales are likely to be less disastrous.

The British Electricity Authority has also been concerned in another matter affecting amenity, and that is the question of pylons or underground cables. The News Letter of the Friends of the Lake District puts this matter in its proper perspective when it points out that what is required is a relatively small addition to the general cost of electricity to provide underground cables in certain places of special landscape value, so that what is of national importance may be preserved from disfigurement by a national policy. Such a common-sense policy was one of the purposes of the Electricity Act of 1947; yet it is ignored by officials of the Lakeland sub-area, while fresh threats are being offered to the Malvern Hills.

The Friends of the Lake District and the Council for the Preservation of Rural England are endeavouring to get the matter put on its true basis; but it should be remembered that here again it was the intention of the Hobhouse Committee that the National Parks Commission should be responsible for any such negotiations required to safeguard the landscape. The fact that in the absence of a National

Parks Commission the Minister of Town and Country Planning, to whom the Commission under the present Bill would be only advisory, has been so indifferent or ineffective in all these matters, is one fundamental reason for questioning whether any system of national parks will ever be developed in Great Britain under the present Bill. At least as much will depend on the vigilance of the existing amenity societies if the Commission is to have any chance of being effective, and the widest possible publicity must be secured for its reports and activities. Only increasing vigilance and the unrelenting and determined pressure of an informed public opinion can hold out any hope that the declared purposes of the Bill may be even partially achieved while the Government steadfastly declines to take the essential steps required to terminate these disputes and perpetual threats to the ideas of both national parks and Nature reserves. There can be no substitute for some authority of the character of an interdepartmental committee at Cabinet level, strong enough and competent not only to balance conflicting claims on a national basis, but also to check piecemeal procedure, with its waste of time and needless friction. Nor can a national park or Nature reserve take shape unless the planning and administration of each park or reserve is entrusted to a single qualified body able to take a national and not a sectional or local view, and which will have regard to long-term interests rather than immediate exigencies or difficulties.

90/2

SIR FREDERICK GOWLAND HOPKINS

Hopkins and Biochemistry, 1861-1947

Papers concerning Sir Frederick Gowland Hopkins, O.M., P.R.S., with a selection of his Addresses and a Bibliography of his Publications. Edited by Dr. Joseph Needham and Dr. Ernest Baldwin; with a Foreword by Prof. A. C. Chibnall, and Contributions by Dr. Malcolm Dixon, Dr. Leslie J. Harris and Dr. Marjory Stephenson. A Commemoration Volume prepared on the occasion of the First International Congress of Biochemistry, Cambridge, 1949. Pp. ix+361. (Cambridge: W. Heffer and Sons, Ltd., 1949.) 18s. net.

THE *œuvre* and personality of Sir Frederick Gowland Hopkins have quite recently been appraised by the most outstanding representatives of his own and allied sciences. These articles appear in easily accessible periodicals. What, then, was the need the editors of this volume sought to satisfy? The answer may perhaps be found in the article by Dr. and Mrs. Needham: "Hopkins was a personality which drew from his colleagues not only intellectual admiration but deep affection and even veneration. . . . One never came across anybody at all like him, and now one is sure one never will." This book is a revolt against this final loss. So far as such an impossible aim can be attained, it brings Hopkins to life again. "The matter of deep regret that he left behind no single book embodying his conception of the subject he brought to life" (Dr. Marjory Stephenson) is thus remedied. Indeed, through Dr. L. J. Harris's collection of addresses by Hopkins and the

presentation of a classical catena of excerpts from his scientific papers, the book conveys to the reader not only the synopsis of Hopkins's conceptions, but also the entire process of their development, together with the development of the historical setting in which they occurred. It is by letting Hopkins himself speak and act—and not by speaking of him—by presenting his brain-wave mechanics that the book brings him to life.

Functional biochemistry is tackling now a problem not less difficult than was the problem of protoplasm in Hopkins's time. The conception of chemical organisation by enzyme specificity is now universally appreciated. Besides this, the particulate architecture of the cell appears to gain in importance. These particles, composed of different enzymes and substrate systems, are the organs of the cell. The problem now is their integration. Those engaged in research on such problems will find many stimulating ideas and much sound advice in Hopkins's addresses. They will find these just as fresh and new as did those who were tackling the concept of protoplasm.

The reader whose interest lies more in the mode of the growth of scientific truth will read with much satisfaction—as Dr. L. J. Harris vividly demonstrates—biochemical truth being made to grow and to differentiate by Hopkins's creative genius. Such a reader will be inclined to endorse the view of Max Planck, who held that the universe is an infinite pattern of interrelated causal relationships. From the starting-point of a new discovery, the next step may be taken in any of an infinite number of directions. Which of these will actually be taken depends on the personal choice of the investigator. The system of scientific truth is thus more a fabric of the human mind than an ever-expanding chart of the unknown. We do indeed see that the discovery of, for example, glutathione, with its functions as a molecular organellum in cell respiration, owes its place in systematic knowledge to the fact that Hopkins chose to pick up the observations of de Rey-Pailhade. But when one sees facts forcing investigations away from the *faux pas* of glutathione being a dipeptide into the right direction of its being a tripeptide, and the consequences of its purification on the concept of its function in cell respiration, one realizes that though the finite pattern of scientific knowledge is a creation of the human mind, as a fraction of an infinite pattern of relationships, nevertheless within the finite system of scientific truth the picture can be brought very near to the objective truth.

Hopkins, alive in this book, gives his view on this very problem as well. Describing respectively the effect of the personalities of Liebig and Pasteur on the development of biochemistry, he clearly endorses Planck's view. Needless to say, in Hopkins's view the fabric of scientific truth is not a structure of abstract imagery. It is a partial reconstruction model of cause and consequence relationships actually existing in Nature, as revealed by experimentation.

After the biochemist and the philosopher of science, the sociologist also may find material for thought in some of Hopkins's addresses. "Next to biochemistry his great interest lay in socialism" (Sir Charles Sherrington). Hopkins's socialism was not of the fanatical doctrinaire kind. It sprang from a profound sympathy and understanding for the man bearing the burden of life. The means of lightening this load he saw in practical and feasible measures carried out by men motivated by moral principles, and not as