

GEOLOGICAL SECTION of the NATURE CONSERVANCY

INFORMATION CIRCULAR 5

NOVEMBER 1970

In Britain European Conservation Year has seen the twenty-first Anniversary of the Nature Conservancy. The recently published booklet "Twenty-one Years of Conservation" tells something of what the Conservancy has achieved in this period and indicates what is being done to meet the challenges foreseen for the future.

To meet the geological responsibilities laid upon it by its original Charter and continued by the Natural Environment Research Council Charter, the Conservancy formed its Geological Section in July 1950. The present year therefore marks the completion of two decades of geological conservation organised on a national basis. The first task facing the Section was to identify and conserve those geological localities in Britain which are the most important for education and research. This task still continues and, as is shown by the case of Whitefield Cottage Quarry, Cumberland, detailed below, is still not complete - unfortunately not all the localities deserving conservation have yet been brought to the Geological Section's attention.

A few years' experience of compiling an inventory of geological sites soon showed that this activity could not be regarded as a 'once and for all' task. Not only are new exposures being opened through the expansion of the mineral extraction industries and the spread of the road improvement programme, but the value of individual geological localities has been found to vary through the results of current research. In consequence, the national list of geological sites requires constant revision and the Section has been engaged on this task over the past eight years.

The process of seeking out, documenting and scheduling new geological Sites of Special Scientific Interest, although time-consuming, is only one part of geological conservation and it is necessary to devote equal attention to the protection of the sites already scheduled. As the list of sites has lengthened over the past twenty years, their protection has become more onerous - not only are there more sites to protect but the tempo of development over much of Britain has noticeably quickened.

Geological Section, Nature Conservancy, Oak Cottage,
Hyde End Lane, Brimpton, Reading, RG7 4RJ, Berkshire
Tel: Woolhampton 3266

In both aspects of its work the Geological Section has had the co-operation of geologists outside the Conservancy. Their help and advice has made it possible to choose the best sites to conserve and to furnish the highest possible level of protection. It is only through such joint action in the past that many of the most important localities in Britain now retain their interest and remain available for field instruction or research.

The problems facing the Geological Section as it enters its third decade are clear. Those important localities which have not yet been brought to the Section's attention must be identified before they are lost. The site list must be systematically revised and kept up-to-date in the light of current trends in research and field education. The increasing number of newly created exposures must be systematically evaluated and where necessary conserved. New techniques must be developed to parry the mounting number of threats to scheduled localities.

The problems of geological conservation affect all British geologists, directly or indirectly. It is only through your co-operation that they can be solved.

"Geological Highlights of the West Country"

Geological Sites of Special Scientific Interest in the Nature Conservancy's South-West Region (Cornwall, Devon, Dorset, Somerset and Gloucestershire) are described in a handbook entitled "Geological Highlights of the West Country". An up-to-date description, with accompanying diagrams, measured sections, fossil and mineral lists and an extensive bibliography, are given for almost one hundred sites. The author is Dr. W. A. Macfadyen, the first Geologist to the Nature Conservancy (1950-1960).

The book not only gives those concerned with conservation a synopsis of the value of each site, but provides much information of value to researchers, field party leaders and amateur geologists alike.

In the introduction to his book, Dr. Macfadyen includes a code of conduct for visitors and it is to be hoped that this is adhered to so that the types of misuse which have recently become matters of concern, such as over hammering and unnecessary collecting, will not arise. The Nature Conservancy has done and will do its utmost to defend these sites from harmful development, but it cannot ensure that geologists will treat the sites in a manner which will allow future generations to see the features described.

"Geological Highlights of the West Country" is published by Butterworths, London, 1970, price 60s.

EUROPEAN CONSERVATION YEAR

"Mineral Extraction and the Countryside" Exhibition.

As its major contribution to European Conservation Year, the Geological Section joined with the Institute of Geological Sciences in presenting an exhibit entitled "Mineral Extraction and the Countryside" at the Geological Museum, Exhibition Road, London. The exhibit was designed to demonstrate to the public

Man's dependence on mineral-based products, stressing the contribution made by the mineral industry in Britain, and to show that with proper planning and conservation, both inside and outside the industry, future operations need not lead to the creation of derelict land but could maintain the present standard of our environment while supplying the natural resources we need. The exhibit was opened by Lord Hayter on 3rd March and remained on display in London until 31st August. During this time the Geological Museum received 213,023 visitors. On 3rd September the exhibit was opened in Birmingham and before it closed there on 2nd October was seen by a further 35,385 persons. From 5th October until 6th November the exhibit has been in Manchester and will visit Sheffield (9th November to 3rd December), Edinburgh (7th December to 8th January 1971) and Cardiff (13th January to February).

In March a symposium and lecture programme covering topics related to the exhibit was organised in the British Museum (Natural History) and the Geological Museum. Speakers included the Director of the Institute of Geological Sciences and Deputy Director of the Nature Conservancy and representatives from the brick, cement, coal, electricity, gas, ironstone and sand and gravel industries. Land reclamation projects in Lancashire and Swansea were described and the relation of recreation to the mineral industry outlined.

Knockan Cliff (Inverpolly NNR), Assynt.

In July the Conservancy published a guide to the geological nature trail which has been set up to demonstrate in some detail the geology of the Cambrian and Precambrian rocks affected by the Moine Thrust at this well-known locality. The route follows that used by the existing combined geological/biological trail and utilises the paths constructed by the Conservation Corps. A complimentary geological exhibition has been installed at the Display Centre by the car and coach park, which is situated on the east side of the A.835, twelve miles north of Ullapool and two miles south of the village of Elphin.

During the peak of the holiday season, the Geological Section provided staff to conduct parties over the trail, to explain the geological features of interest and to relate them to the exhibition.

The guide is available price 6d. (2½p) at the Display Centre or from the Geological Section (plus postage).

Pengelly Cave Studies Centre, Buckfastleigh, Devon.

Since 1962 the William Pengelly Cave Studies Trust Ltd. has been building up a cave demonstration site and museum at Higher Kiln Quarry, Buckfastleigh. Through the courtesy of the Trust, the Geological Section was able to use its premises for an "Open Fortnight" in August to mark European Conservation Year. The public, both local residents and holidaymakers, were invited to visit the Centre to see geological conservation in action. Guides were provided to explain the speleological interest, which includes one of the richest bone caves in Europe set up as a demonstration site. Over 2,000 people attended and at peak periods public demand exceeded the capacity of the Centre's reception facilities.

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GEOLOGICAL NATIONAL NATURE RESERVES

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Glen Roy - a New Geological Reserve.

At a brief ceremony on 28th July, 1970 the Nature Conservancy declared part of Glen Roy a National Nature Reserve. A total of 2887 acres have been purchased from the Forestry Commission in order to save the scientifically most important part of the Glen from afforestation. A viewpoint car park has been constructed by Inverness County Council beside the road on Bohuntine Hill near Roy Bridge and the Conservancy has erected an information plaque close by.

The Reserve includes important stretches of the unique "Parallel Roads", beaches formed by ice dammed lakes during the deglaciation of Scotland. Permission is required to visit the Reserve away from the car park and public road during the deer cull (September to February) and the lambing season (April to June).

An exhibit which shows the formation of the "Parallel Roads" is housed at the West Highland Museum, Fort William, by kind permission of the trustees.

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Wrens Nest NNR

In April and in August Conservation Corps parties built sections of a revised geological nature trail route. Three flights of steps have been constructed up slippery slopes - at a point 200 yards south of the Caves Inn, near the fault zone at the south end of the Reserve and near bollard 4 of the existing trail on the west flank of the hill. Six additional bollards have been emplaced as route markers and observation points. The new route provides a shorter and more efficient trail and incorporates a number of new exposures and viewpoints created in recent years as part of the Conservancy's management programme (see Inf. Circ. 2, p. 2). Dudley Borough Council provided invaluable help in arranging the supply of materials.

The new trail will be incorporated in the 2nd Edition of the Wren's Nest booklet, now under preparation and details of the new route will be supplied to Dudley Museum (St. James' Street, near the Town Centre).

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Swanscombe

Excavations under the direction of Dr. J. A. Waechter (Institute of Archaeology, University of London) (see Inf. Circ. 2, p.2) have taken place through the summer vacation. Following the success of the 1969 season, when a pond with a midden of bones was found at the base of the Lower Loam, three adjacent 10 metre square plots have been excavated in the expectation that an occupation site may be close at hand. In the higher part of the Lower Loam, flint manufacture sites have been found. Various sections have been opened in, and just outside, the Reserve to study the interrelationships between the deposits.

REPORTED MISUSE OF GEOLOGICAL LOCALITIES

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Complaints continue to be received, directly and indirectly, of the misuse of localities of geological interest. The problem has now reached the national press for "Country Life", in its number for 22nd October (p. 1078), carries a brief resume of two short articles which appear in the Newsletter of the Derbyshire Naturalists' Trust concerning damage to dry stone walls by geologists and biologists "when seeking fossils or attempting to gain access to sites"! Attention is directed to the problems concerning the specific sites mentioned below.

Lulworth Fossil Forest, Dorset

This classic site has suffered intensive misuse in the past. Reports have been received that the last remaining fossil tree is being attacked by hammers and pieces removed. Such behaviour serves no scientific purpose as the fragments can only be treated as curios. The Museums have adequate material in their collections, and the value of the tree lies in its being the only in situ example. Though within the military area access is inadequately controlled and it is urged that anyone found hammering this feature should have the selfish nature of their actions pointed out.

Chatwal Farm Cutting, Shropshire

This site is heavily visited by educational parties as a demonstration of the alternata Limestone which occurs as nodules exposed in the vertical cutting walls. The owner has expressed concern at the consequences of overcollecting at this site and it is requested that party leaders prevent hammering of the limestone by students in their charge.

Martin's Shell Quarry, Herefordshire

The Leintwardine Beds at this locality yield starfish, eurypterids, annelids and echinoids. The owner has reported that he has had constant trouble with student parties and intends to prevent any further incidents by refusing permission to visit the site. Individuals can still visit the section but must write in advance, to Jukes Brothers, The Hollies, Leintwardine, near Craven Arms, Shropshire.

Shelve Church New Exposure, Shropshire

The conduct of some parties at this site has been causing concern to the owner. The exposure, excavated by the Conservation Corps some years ago to replace the roadside outcrop below the church, lies on private land and it was only through the co-operation of the owner that facilities for this alternative site were furnished. Permission to visit is required and can be obtained from the house adjacent to the outcrop. It is requested that the leaders of educational parties maintain strict discipline here to ensure that there can be no grounds for complaint.

LIAISON

Early Consultation by Commercial Consultants

Many academic geologists act as consultants to the mineral industry; occasionally they find themselves advising on projects which affect Conservancy interests. The Geological Section were recently invited to join informal and confidential discussions at a preliminary stage over proposed mineral extraction within a geological S.S.S.I. An acceptable compromise was readily found and much time and effort saved to all parties as a direct consequence of the geological consultant's appreciation of both commercial and conservation interests. The Geological Section would welcome similar approaches in the future.

Whitefield Cottage Quarry, Cumberland

It has been reported that this quarry, of considerable importance in Lake District geology, is threatened by development and that part of its floor has already been levelled. Unfortunately the interest of the locality had not been reported to the Geological Section and the quarry has not consequently been scheduled as an S.S.S.I. Under these conditions the Conservancy has no formal powers to intervene and can only advise other bodies on suitable action.

There is a continuing need to ensure that all localities of interest are brought to the notice of the Geological Section at the earliest opportunity, so that they can be assessed and scheduled. If this is not done in time - before development proposals materialise - the Conservancy cannot take its full part in putting forward the scientific case when a threat materialises. Losses of important sites in this way can be minimised but only if every geologist ensures that the sites he uses are scheduled.