

JOHN O. BREW
INTRODUCTORY LECTURE

It is our assignment this afternoon to consider the protection and preservation of our cultural heritage from the new developments which we group together under the term, modern technology. The extent of the threatened loss is impossible to estimate and extremely unpleasant to contemplate. We can only say that the threat is stupendous in degree and world-wide in extent.

Many people still are not aware of this danger. Nor do they realize how widespread it is. The population of the world is growing at an alarming rate and technical developments are attempting to keep pace with it. No country in the world, however small or however remote can consider itself free of these influences. If provisions are not made to alleviate these destructive influences a very large part of the cultural heritage of all countries will be forever lost.

We must now consider the nature of this threat. What are the agencies of our civilization which produce this damage. They are indeed many. I can not list them all. Only the most important can be mentioned here. All of them are necessary to modern life; and all of them endanger our record of the past.

The best known of these are dams (barages). They are at present under construction from Sackatchewan in Canada to the Mountains of Iraq, from Northern Europe to the heart of Africa. The purposes for which these dams are being built are beyond question. There are three main reasons for them: irrigation, flood control and hydro-electric power, all essential needs in the modern world. Their effects is tremendous. When the serious nature of this threat to cultural values was realized in the United States, in 1946, and the United States salvage archaeology program in the river basins was set up, it was discovered that 108 dams had been authorized in the Missouri River Basin alone. Some of these dams were small but others were designed to impound lakes 150 to 300 miles in length. An identical situation developed at the same time in the U.S.S.R. Now the movement is spreading throughout the world. Our river valleys are being transformed into a series of lakes. Since a large proportion of the people in prehistoric and early historic times lived along the banks of the rivers, much of our cultural heritage is and will be submerged beneath the waters of these lakes.

Another major threat is to be found in the modern highway construction programs, the great super-highways, autobahns, autostrade, whatever they are called. These are no slender ribbons winding through the countryside. They are great wide swathes ruthlessly bisecting our countries from border to border and sweeping all before them. Because of their number they are, in many countries, a greater threat than the dams. And there is more danger here for the future. We can see a limit, perhaps, to the development of the river valleys. It is

difficult to conceive a limit for highways. We are now in an age which can be described as the era of individual transport. Some of you seated in this room today may not possess private automobiles but your children and grandchildren will. However horrendous this may be to contemplate we must consider it and make plans to protect our cultural heritage against it.

A third important phase of our modern technology is the rapid spread of pipe-lines for the transport of petroleum and gas. These cut across the countryside in all directions in straight lines, without deviation, and thousands of cultural sites lie in their paths. For a few years it was necessary to deal with this threat only in the oil producing regions where the pipe lines took the products to the ports. Now, however, throughout the world, the pipe lines spread out like great elongated claws, bringing the oil and gas from the wells to the consumer, wherever he may be.

A fourth danger, and one which has not been so well publicized but which perhaps is the most serious of all, is the expansion of our living area. This is the development known generally as urbanization. Many of you here today, as architects and city planners, are highly familiar with its details. It, again, is a threat which we must view as a greatly increasing one during the decades which lie before us. Also, it presents a much greater problem than the three I have previously mentioned, for two reasons. It is even more universal and it is much more difficult to keep track of and control.

Other developments can only be listed now: the construction of electricity transmission lines, of both underground and pylon types; industrial development, which is no longer restricted to our cities, but now occupies increasingly large areas in previously rural districts; airfields—few people yet realize the actual amount of our land area which is now devoted to this purpose, again rapidly increasing; to provide materials for all this construction quarrying of earth and stone, an old threat to our cultural heritage, is rapidly expanding; closely related to this is the extraordinary development in our times of vast open-pit stripping operations in the mining industry; a particularly difficult development, again because it is so hard to observe and control, is the literal explosion in the countries of northern Europe of summer houses. For example, in Sweden alone, over 20,000 new summer houses have recently been constructed. Thousands of prehistoric shell middens have been damaged or destroyed by this means during the last 15 years and the archaeological authorities find it extremely difficult to do anything about it.

All of you will be able to think of other agencies of destruction which we must take into account. I shall mention only one more. Farming operations have always been a major threat to archaeological and historic sites. Clearing of land and ordinary cultivation has probably done more damage to such sites in the past than any other single agency of our technology. Collective farms and the ever increasing size of private farms have aggravated this danger greatly. Deep plowing, drainage projects, clearing and levelling of land for irrigation, removal and sale of fertile top soil, all of these processes take an increasing annual toll of sites and pose one of our most bothersome problems.

This then is the situation which we face. The questions now are, what do we do and how do we do it. It is a universal problem. At one time, not very long ago, it was thought that these matters were the concern only of those

countries with large, highly industrialized cities. This is obviously no longer the case. Immediate, stringent, and effective measures must be taken to ensure protection of the important items of our cultural heritage, not only in Belgium, Switzerland and Great Britain but also in Tunisia, Afghanistan, Ghana and Venezuela.

Before we embark on a consideration of protective measures, it will be well to discuss for a moment the cultural objects which we are trying to protect. Here, again, many people do not realize, or only partially realize the full nature of our heritage in buildings and objects and sites. It is not necessary to convince ourselves, that is, the devoted and dedicated people assembled in this room. Our task is to convince and obtain the cooperation of national and local administrators and politicians, engineers, industrialists, farmers, quarrymen and, in fact, as high a percentage of the population as possible.

At the outset we must recognize that we are concerned with much more than the world famous national monuments (*Monuments Classés*). The cultural heritage of any country includes prehistoric sites, local buildings, and farm houses as well as the office buildings and palaces of kings and dukes, commissars and presidents. History and cultural heritage now demand a record of the total background of the respective nations, not merely a listing of major battles and the births, marriages, succession and death of princes of state.

There is a grave danger that, whereas major monuments may be protected and preserved, the vast heritage of the past which still lies recorded and ready to be revealed in the more ordinary sites will be ignored and forever lost in the march of progress. It is from such sites that we gain the most information about our cultural background, about the way in which people lived in those bygone eras which have shaped the culture of our modern times. This is the record which we must make every effort to obtain and preserve.

Many countries have made efforts in this direction. A few have done a great deal. I am confident in the accuracy of my statement, however, when I say that no country has as yet succeeded in solving the problem completely. Many countries have so far done very little indeed.

Those countries which have carefully worked out administrations of National Monuments and effective antiquities acts have made a start along the path we all must follow. But the national monuments are only a very few of the important sites and the antiquities laws are usually inadequate and/or ineffectively administered.

Situations vary from country to country. Legal systems and systems of land tenure are by no means standardized. The rights of the state (in legal terms, the sovereign) and private individuals are quite different in different countries. In many countries, (for example Australia, the Deutsche Bundesrepublik, and the United States) there are complexities in the degree of control which can be exerted by the federal government on the one hand and, on the other hand, the various provincial governments.

Consequently, because of this great variety of legal and property concepts it is not possible to recommend a standard or universal system of procedure. One can only set down general principles and suggest that the various nations of the world enact laws and regulations, in keeping with their own legal framework, that will achieve the desired necessary aims.

A few countries have a type of strong central control which makes it possible to bring together all the various possible threats to our cultural heritage under a single regulation or administration for new construction or technological development. But even in such countries, it is difficult to be aware at all times of the activities that continually threaten our sites on a large agricultural unit or in the suburban expansion of a provincial town. Despite official statements of the efficiency of the regulations much work and education remains to be done.

In several countries national services and organizations have stimulated the interest of private firms and individuals. In the western part of the United States and in the Arabian peninsula private pipe-line companies have sometimes been very co-operative. They have employed archaeologists to excavate in advance of their construction crews, and have even financed the writing and publication of the scientific reports. This has not always been the case, however, and wherever possible it should be required by law.

The Archaeological Service in the Netherlands has over 200 correspondents throughout the country who help to keep track of new finds. The Service also has close liaison with the Ministry of Agriculture. In Norway, where an extensive inventory of prehistoric and historic sites exists, the Archaeological Service works closely with the farm and industrial organizations. The question of budgeting is most important here, as the farmer and small contractor can not be expected to bear the expense of extensive excavation. In Czechoslovakia there are nine scientific organizations which can excavate sites if they are brought to their attention. In France, a classified site must be preserved, with a protective perimeter around it, but no satisfactory method has yet been devised to protect the myriad sites which are not classified.

As we proceed with this analysis we begin to see that there are two areas which are of paramount importance with regard to the problem of protecting our cultural heritage. One of these is the problem of survey or inventory, that is, the knowledge of where the archaeological sites and historic buildings are. The second problem is the financing of the studies, excavation, or protection of the significant sites. These are the primary needs at this stage of our work and the remainder of my paper will be devoted to them.

Before we embark upon the question of ways and means, however, it might be well to give a few examples of how various countries have already met the problems which the salvage of cultural remains present. When it was found that the Nagoya-Kobe Autobahn in Japan would destroy a number of archaeological sites, 7,570,000 Yen were provided by the road corporation and the prefectural and national governments to excavate and record the sites. Similarly 10,457,000 Yen were provided for excavation and research on 35 sites in the path of the new Tokyo-Kobe railway line.

In Pakistan, the cost of survey and excavation of 22 prehistoric and early Muslim sites was provided in connection with the construction of a network of irrigation canals for a sugar growing project in the Rangpur district. In Israel a contractor was required to conduct a survey and excavation before beginning quarrying operations at the site of Tel Mor, and the Jewish National Fund had to bear the expense of the survey, photographing, mapping and recording of eighty megalithic structures in the Khorasin area in advance of agricultural development.

In Ghana, the University of Ghana and the National Museum is collaborating on salvage in the great Volta Basin development project and the Public Works Department financed excavation at important Iron Age sites in the Ormsby Road highway construction. In Finland, during the last ten years, power-mill companies have supported the study and preservation of many ancient sites, assisted by funds granted by the local communes.

These are only a few examples selected at random; many others could be cited in all parts of the world. I am, of course, most familiar with the salvage programs in my own country, the United States. More than 12,000 archaeological and historical sites have been located in the Missouri Basin alone and an estimated 5 million archaeological specimens have been recovered from excavations. This is very impressive, and we have had considerable success, in some areas, in connection with highway salvage and private pipe lines. Furthermore, all private power companies who wish to construct dams on navigable streams must obtain licences from the Federal Power Commission and these licences contain a clause which states that the company must pay for archaeological surveys and excavations of sites which will be inundated by their dams. Nevertheless, even with this considerable degree of success there is still a great annual loss of our cultural heritage because effective means have not yet been devised to control deprecations in many other construction enterprises, such as urban renewal projects, private housing and factory developments, farming operations, local highway projects, etc., etc.

The ensuing years will bring even greater loss to our cultural heritage unless rapid and effective action is taken. The basic work must be done by our respective governments. Private universities, museums, research institutions and individuals can and must help, but the major initiative and the bulk of the effort will have to come from Governments.

The urgency and extent of the problem has been recognized by UNESCO. In his introductory remarks last Monday, Mr. Vrioni, speaking for the Director-General of UNESCO, emphasized the fact that archaeological and historical monuments are of interest and value not only to the country in which they are found but to the entire world. Political boundaries shift backwards and forwards across the map. People migrate from one place to another, either individually or in large groups. The one thing which stands out with stability in all this is our developing cultural heritage which is of importance to all mankind. Sites and Monuments are the symbols of cultural continuity and we must preserve the story which they have to tell.

To assist in achieving this end the UNESCO International Committee on Monuments, Artistic and Historical Sites and Archaeological Excavations has prepared a preliminary report, at the request of the Director-General, entitled « Possible International Regulations Concerning the Preservation of Cultural Property Endangered by Public or Private Works ».

The report considered primarily two major types of cultural property; prehistoric and archaeological sites, and historic buildings along with their contents. The report is now being studied by the UNESCO Executive Board. Among other items it contains the following general principles and recommendations.

It is of utmost importance in connexion with any form of construction that the cultural properties which are threatened should be known. Therefore a survey

must be made of the archaeological sites and historic buildings which are in the path of the work as soon as the pool area of the reservoir, the line of the road, the dimensions of the airfield, etc., have been determined by the engineers and contractors. Effective liaison must be established between the construction agencies and the antiquities of historical bodies so that this information can reach the scientists and scholars while there is yet time to do something about it.

A cardinal principle in all work of this kind is that it must be done sufficiently in advance of construction not to interfere with or impede the engineers and builders. For example, salvage operations in a dam construction project must begin at the site of the dam itself, at the location of the construction town, along the new access roads and in the areas from which materials will be quarried. Then work can proceed in the pool area itself, working upstream from the dam.

Historic buildings present a different problem, for which three standard solutions exist:

1 - The building can be transferred to a safe site.

2 - If the cost of transfer is too great, or the fabric of the building too poor to permit removal, then it can be recorded by means of a thorough study, including measured drawings, photography, photogrammetry, etc., before destruction.

3 - In the case of extremely important buildings, particularly if their setting is a significant part of their value, the line of the road or the location of the dam or other feature may sometimes be changed.

A final general principle of *absolute* importance is the publication of the results of the studies. The actual salvage, in the case of sites and buildings which are to be destroyed, lies in full scientific publication of the work of the archaeologists, architects, and historians.

We now come to the question of the cost of this work. All of you here know how expensive it can be. For example in the United States, at present, more than \$ 1,000,000 a year is being spent for salvage archaeology in the river basins alone. How is all this to be paid for?

The preliminary report to UNESCO recommends that the cost of cultural salvage be included as part of construction costs. Public works are very expensive. Large dams cost hundreds of millions of dollars. In the United States the Cost of the federal express-highway program is estimated at \$ 56,000,000,000 (56 billions dollars). On the other hand, the expense of cultural salvage is ordinarily only a fraction of one per cent of construction costs. To our budget officers, when compared with the total costs of construction, the money necessary for cultural salvage is very little indeed, actually an infinitesimal amount.

I repeat, that to protect our cultural heritage we must act positively and at once. And the lead must be taken by our governments. In June 1963 a new law went into effect in Finland. It provides that "when the execution of a public or large-scale private construction project affects an immovable ancient relic so as to make necessary a special study of the relic or special measures to preserve it, the executor of the project has to cover the expenses thus caused".

There are many more things I could say on this subject. I shall conclude now, however, with a few extracts from the message delivered by the late President John F. Kennedy to the Congress of the United States on April 6, 1961, on the subject of the salvage of our cultural heritage in Nubia. This message

resulted in the immediate appropriation of \$ 4,000,000 for archaeological excavation and the removal of temples and the recommendation of \$ 6, 000,000, when the time comes after the completion of the High Dam at Aswan, to build the three dikes needed to protect the Island of Philae.

President Kennedy said:

"I consider it to be in the interest of the United States to assist in rescuing these historic remains of a former civilization from destruction... and to join the international effort to conduct exploration and research in the threatened area of Nubia before it is submerged for all time.

"The United States, one of the newest of civilizations has long had a deep regard for the study of past cultures, and a concern for the preservation of man's great achievements of art and thought. We have also had a special interest in the civilization of ancient Egypt from which many of our own cultural traditions have sprung... In keeping with this tradition... I recommend that we now join with other nations through UNESCO in preventing what would otherwise be an irreparable loss to science and the cultural history of mankind.

"In making... funds available (for this purpose) the United States will be participating in an international effort which has captured the imagination and sympathy of people throughout the world. By thus contributing to the preservation of past civilizations, we will strengthen and enrich our own".

JOHN O. BREW
CONFÉRENCE INTRODUCTIVE.
RÉSUMÉ.

L'homme en tous temps et en tous lieux est allé à la recherche d'informations concernant son histoire. Comme les populations s'accroissent, les restes des civilisations passées sont constamment menacés par les intrusions des derniers arrivés.

C'est assez tard dans la 19ème siècle que commencèrent à être élaborés des projets de sauvegarde d'architecture, de préservation ou de restauration des monuments historiques.

Les récents développements techniques, à travers le monde entier, ont attiré l'attention sur ces problèmes.

En plus des efforts locaux et nationaux, l'UNESCO a patronné un programme international et a encouragé les Etats membres à instaurer une législation tendant à protéger leur patrimoine culturel.

Les menaces qui pèsent sur lui sont, au premier chef, la construction des digues qui peuvent tout particulièrement occasionner des dommages en créant d'énormes lacs et en submergeant les rives des fleuves le long desquels les populations sont toujours fixées, des autoroutes, pipelines et lignes électriques, cultures, expansion urbaine et développement ou aménagement, installations industrielles de toutes sortes etc...

Les méthodes de contrôle varient grandement d'Etat à Etat membre et il est arrivé quelquefois que des monuments n'ont pu être protégés contre l'expansion et la satisfaction des besoins des populations actuelles. Il faudrait donc une législation prévoyant et augmentant la protection des Monuments, envisageant leur transfert ou, si cela est impossible ou indésirable, prévoyant étude et documentation.