



TREASURES OF WORLD ART

Ethiopia

The head on the jar lid

This terra cotta head (13 cms. high) was unearthed at Aksum, the ancient capital of Ethiopia, which
has remained a spiritual and cultural centre to the present day. The head dates from between the
4th and 7th centuries A.D. and is now in the National Museum, Addis Ababa. The artists of Aksum
were distinguished by the delicate skill and gracefulness with which they embellished everyday objects: this head with eyes serenely closed was used as the lid of a jar. Photo © Luc Joubert, Paris

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Covers

An international round table was organized by Unesco in Paris last June on intellectual and cultural co-operation and the new world economic order. Two articles in this issue present some of the views expressed on this occasion (see pages 4 and 9).

Photo © Butina Cedomir, "Split", Yugoslavia. Graphic design by Jean-Pierre Tran, Paris



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ISSN N° 9-1 Back cover shows *Bird in Space*, a work produced in 1919 by Constantin Brancusi. This great Romanian sculptor played a major role in the development of modern art through his quest for simplicity and purity of form (see page 17).

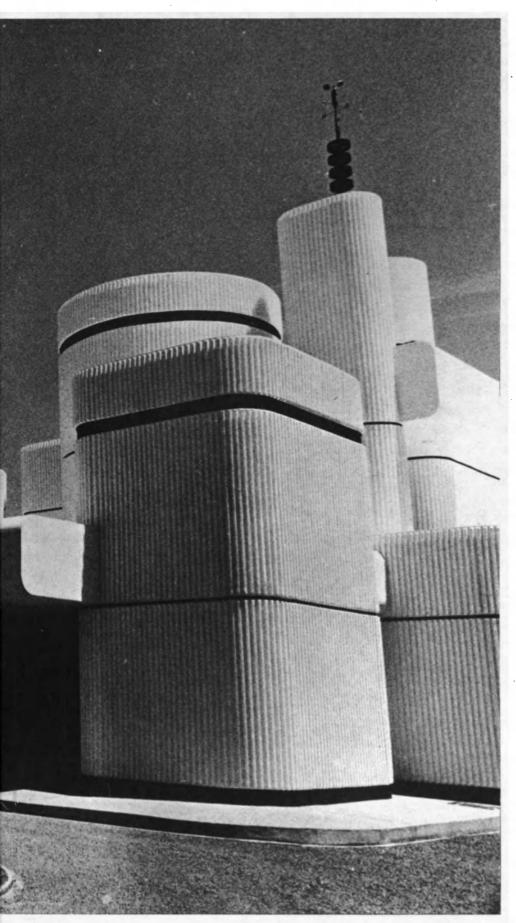
Photo © from Brancusi by I. Jianu, Arted publishers, Paris 1963

THE SEARCH FOR A NEW WORLD ECONOMIC ORDER

Photo Marion Kaplan © Parimage, Paris Ultramodern buildings and a glant antenna stand out against the sky at the Longonot satellite telecommunications station 80 kilometres from Nairobi (Kenya). Longonot reroutes by satellite international calls coming through East Africa. Carle Sales

'a more equitable place in the sun for the new nations'

by Trygve Bratteli



OST people are of the opinion that prevailing economic and social inequalities bring us face to face with a gap dividing the peoples of the world that is both intolerable and unacceptable. And there are many who demand that a more equitable sharing of burdens and benefits should form the central feature of a new and better world order.

Here we come right up against emotion-laden differences and conflicts of interest which have dogged mankind throughout its history.

Why are economic conditions and levels of progress so different from one country to another?

What have been the motivating factors in those areas of the world which today are well-established and enjoy the benefits of advanced scientific and technological development, high productivity and a high level of income per capita?

What are the factors which have kept back other areas, struggling in varying degrees with primitive production methods and very low income levels—for all those hundreds of millions who have an existence under subsistence levels?

TRYGVE BRATTELI was Prime Minister of Norway from 1973 to 1976 and has been chairman of the Norwegian Labour Party since 1965. We publish here passages from the paper he presented to the round table on cultural and intellectual co-operation and the new international economic order, organized by Unesco, in Paris, in June 1976.



High-voltage laboratory at the Indian Institute of Science in Bangalore, southern India—one of a series of scientific research laboratories that India has developed during the past 20 years.

Very little is to be gained by assuming that some nations are rich because they have robbed the poor countries or that the poor nations remain in a poverty-stricken state because the rich nations take from them what little they have.

Basically we must be clear in our minds that the picture is of a far more complex nature than that. We find countries at all levels from the poorest on the lowest rung of the ladder right up to the richest indu-

strial countries at the top of the economic scale.

But over and above this we have the fact that regardless of the rung on which we can place any given country, each of them is also split internally by wide gaps between poor and rich individuals.

This applies in equal measure to the poor as well as to the rich nations. It can even be said that in the poor countries the gap between the many poor and the few rich may be greater and more provocative than in many rich industrial nations.

Small exclusive groups in the Third World are able to live in a state of luxury to which it is difficult to find a parallel in the modern industrial states. The modern capitalist is more interested in industrial enterprise, trade and securities and not so much in acquiring palatial homes and living in ostentatious luxury.

All countries—both rich and poor—depend for their further development

on increased international trade in goods and services. All of them will, to an increasing extent, make good their opportunities through close contact with a world economy.

About 150 years ago life in Norway was characterized by abject poverty, back-breaking human labour, a high infant mortality rate and a low life-expectancy. Today, in economic terms, Norway, with its four million inhabitants is relatively speaking, one of the "top ten" nations with a very low rate of infant mortality and the longest life-expectancy in the world.

The high level of economic activity has been integrated in the world economy to such an extent that today Norway sells half of its production outside its own borders and imports a corresponding amount.

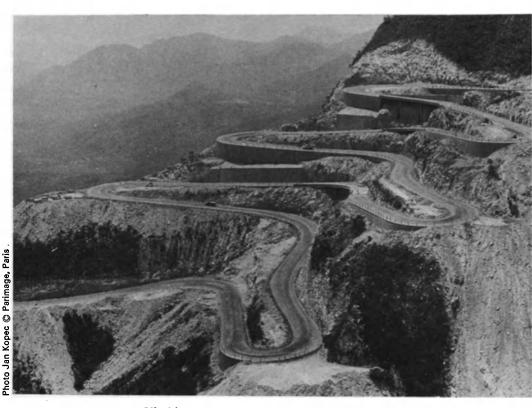
On the basis of such a historical experience, I have little faith in the doctrine that the poor countries will take the road to prosperity by weakening their ties with the international economy. Progress and prosperity for the poor countries also depend on furthering an equitable division of labour and the exchange of goods and services between all nations.

Nor have I heard any representative of the poor countries postulate the doctrine that the salvation of these nations lies in being left alone in economic terms, each one in his own back-yard so to speak. On the contrary, they desire broad contacts with countries all over the world.

The principal issue then is to provide suitable opportunities and conditions for the exchange of goods and services between countries at very different levels of economic development.

A strategy for a new international economic order must consist of two parts, both equally necessary.

We must try to clarify how in fact economic forces operate and why the benefits derived from the exchange of resources and the interplay between nations have come to produce the results we have been able to register up to the present time.



Climbing tortuously up the steep flank of the Chala mountains, in Angola, this recently completed road links the port of Mossamedes with the interior of the country.



Manila's striking new cultural centre houses under one roof exhibits from every group in Philippine society, so diverse that linguistically alone the nine main groups can be divided into 70 sub-groups.

We must agree on joint measures which can enable the world economic system to operate satisfactorily for the benefit of the new nations, which are now seeking to achieve a more equitable place in the sun within the system.

We must persist in this work without being hampered by the idea that some nations must necessarily be the losers if others are to achieve economic gain.

There is a growing mutual dependence between nations generally and between regional groups of countries. The rich industrialized countries cannot live a secure existence, protected against the political and social effects of the inhuman conditions of life which are the lot of the broad, underprivileged masses of the world's population. And these masses will not be able to free themselves from their destitution and achieve economic independence without the active support of countries which have progressed further in technological insight and know-how.

Mutual dependence between the main groups of developing and industrial countries, however, does not operate equitably both ways. There is here a lack of balance detrimental to the developing countries. They are therefore easily placed at a disadvantage both with regard to a balancing of interests on international issues as well as in the competitive system of the international economy.

This arises out of circumstances which cause a serious lack of stability in the world economy and the absence of a firm basis for the long-term planning of international economic relations. As far as the developing countries are concerned, economic planning in accordance with national requirements is a necessary prerequisite for progress.

The basic premise lies in the exploitation of one's own resources and how these may be utilized to the best advantage within the framework of a global economy. However, it is essential that this process should lead to a distribution of income between the nations which is politically acceptable to all.

The efforts to achieve a better balance must take into account certain fundamental characteristic features of world trade which tend to place the developing countries in a very exposed position. Three-quarters of their foreign trade is with the Western market economies. Western Europe alone takes 40 per cent of the developing countries' exports.

Trade between developing countries makes up almost all the remain-

ing quarter. The countries of the East are a negligible factor in the developing countries' economic relations with the rest of the world. This imposes a great responsibility on the countries of the West, and especially on Western Europe.

On the other hand three-quarters of the Western industrially developed countries' foreign trade is conducted between themselves. Only about 20 per cent of their exports go to the developing countries.

As a group the developing countries are net importers of foodstuffs. In the main they are supplied by the food surplus of the Western industrial countries. In the case of some developing countries the imports of grain from the West are of vital importance for their nutrition. This seems to be an unreasonable state of affairs considering the unexploited agricultural production potential existing in the developing countries.

The developing countries' exports consist mainly of raw materials, which are produced under unstable conditions with regard to both prices and profitability. But the developing countries are not a dominant factor in the world trade in commodities. The exports of raw materials from the industrialized countries are almost twice as great and the substantial part of the trade in these commodities is conducted between these Western industrialized countries themselves.

The developing countries have here only a marginal production and are very vulnerably exposed during periods of recession. Apart from energy products, the industrial countries themselves cover 85 to 90 per cent of their raw material requirement.

It is therefore not correct to describe the developing countries as the raw material producers and the industrial countries as the producers of manufactured goods. Some of the very poorest and most populous areas of the world are notable for their lack of energy resources as well as raw materials.

A high level of prices for commodities thus represents no key solution for overcoming the poverty of the developing countries. For some of the poorest developing countries, high energy and commodity prices are no less than a catastrophe, as we have seen in recent years. For some of the richest industrialized countries higher prices for commodities represent increased earnings.

All countries have a legitimate need for a reasonably secure system of supplies of energy and raw materials. Traditional trading patterns provide no solution to the highly differentiated and varied interests which arise between the developing and the Industrialized countries when they both engage themselves in a world economy.

It is in our common interest that we preserve the multilateral nature of world trade, and that it remains an open trading system with access for all. However, this system must be more firmly tied to the more basic and broader tasks facing the countries of the world in their economic policies.

It is not possible to create a system which automatically resolves all future problems. Once-for-all solutions always have a limited life-span. An important aspect of a new economic world order must therefore be to reach suitable arrangements enabling the countries of the world to solve problems by means of joint measures according to changing circumstances.

Some people may object that such a continuous and lasting form of cooperation between states will tend to alter the character of what has hitherto been regarded as the free market economy of world trade. However, without such extensive and long-term joint measures there is a real danger that trading patterns will emerge which will exclude both free trade as well as a well-planned system for regulating the crucial problems of markets and supplies.

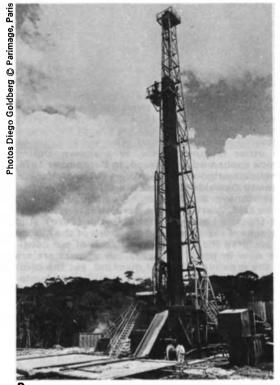
We must therefore continue to persevere in the work on the scope of an international commodity programme and its attendant financing arrangements.

■ Trygve Bratteli





1 BLACK GOLD FROM THE JUNGLE.
The growing needs of world industry have pushed the search for natural resources into increasingly remote places: from deserts to the high seas and, as shown here, to the heart of the Amazonian jungle. It was in 1971 that Peruvian geologists and engineers first struck oil in the heart of the immense Amazonian forest. Today, jungle-hopping helicopters (photo 1) fly oil technicians to the tiny patches of bare ground (2) that mark the sites of oil rigs (3 and 4) in a vast sea of green foliage.





THE SEARCH FOR A NEW WORLD ECONOMIC ORDER

Should we dump the present economic systems and start again from scratch?

by Samir Amin

SAMIR AMIN, internationally known Egyptian economist, is Director of the African Institute for Economic Development and Planning, in Dakar (Senegal). Author of many studies on the economic problems of the Third World, he took part in the round table on cultural and intellectual co-operation and the new international economic order, at Unesco's H.Q. in Paris, in June 1976. We present here salient passages from his contribution to the round table.

HEN we examine the stages in the struggle for a new economic order, both national and world-wide, we realize that this is not an entirely new struggle and that it has been carried on by the Third World countries for at least twenty years past. Nevertheless, it must be admitted that it is only during the last few years that the actual subject of a New World Economic Order has assumed the importance it has today and become, in a way, fashionable.

The Third World countries, particularly those of Asia and Africa, first fought for their political independence. After the Second World War, a long series of political struggles—and often armed struggles—were necessary before the old forms of colonial dependence were eliminated. Over a score





Oswaldo Guayasamin's 'weeping woman'

Over 30 internationally-known artists, scientists and statesmen took part in a round table on cultural and intellectual co-operation and the new world economic order at Unesco's H.Q. in Paris, in June 1976. During the meeting the Ecuadorian painter Oswaldo Guayasamin presented one of his works, Weeping Woman, to the Director-General of Unesco. The painting, to be auctioned with gifts from other leading artists, was shown during a special cultural week in Venice sponsored by Unesco, in September 1976, in support of the international campaign for the preservation of Venice. During the presentation ceremony Oswaldo Guayasamin stressed the need for solidarity among artists in the world of today. "We now perceive in the culture of Latin America," he said, "certain scars, perhaps less visible yet similar to those of Bonampak (Mexico) and of Machu Picchu (Peru). And Unesco, which is helping to safeguard these majestic creations of the human mind, has also undertaken to preserve the personality of each of our continents, of each of our regions now in peril. The treasures of past art are indeed durable testaments to the creative genius of mankind, yet the campaign for a new world economic order has, in my view, a still more humanistic quality, since it seeks to preserve the vitality of cultures which, unless they are protected today, will be beyond hope of conservation tomorrow".

of years, therefore, the countries of Asia and Africa were mainly occupied with the combat for political independence and with activities undertaken in the interests of solidarity with those countries which had not yet achieved political independence.

The non-aligned movement which was inaugurated as a result of the historic Bandung Conference in the middle 1950s was exclusively concerned, over about a decade, with the major problems of the political independence of the Third World countries, with the problems of South-East Asia, the Vietnam War, Palestine, apartheid, the Portuguese colonial war, and Cuba, which some powers wanted to isolate. This was the almost exclusive theme with which the States making up the Third World were concerned.

The national liberation movements, and therefore the governments which emerged from such movements, did not elaborate a new viewpoint on economic affairs. They considered

that the development strategies used during the colonial epoch could be more or less pursued at the price of a few minor adjustments, that the integration of new States into the international division of labour and the world economy presented so many advantages in itself that there was no point in calling it into question.

They thought that national independence would make possible, and in fact almost automatically imply, political and economic independence, which was the condition of a genuine interdependence, even if it was only interdependence between unequal parties. Within Europe there are countries which are unequal not only in size but also in their degree of development, and yet they may be considered as interdependent.

The same cannot be said of the world generally. We can scarcely speak of interdependence in relation to such an asymmetrical picture, and that being so it is better to speak of dependence.

It was only during a second stage that Third World countries gradually came to understand that, all things being considered, political independence did not count for very much unless it resulted in economic independence, and that the latter remained to be achieved in the same way as political independence.

It would not come about of its own accord and would not emerge from a development strategy based entirely or almost exclusively on the international division of labour or the internal growth and development which are by-products of the development of the world system and, therefore, the by-products of the development of the most highly-developed centres, with just a few minor adjustments here and there.

Now unless I am mistaken, the idea that economic independence had to be achieved and that this would involve a struggle in the same way as for political independence first became the theme of the non-aligned countries and therefore of the 77 developing countries, at the Non-Aligned Summit held at Lusaka in 1970. It may have been a few years earlier, but it was certainly not later than the Algiers Non-Aligned Summit in 1973.

The New World Economic Order which the Third World was beginning to claim consisted mainly in two ideas.

One was that the producers of raw materials ought to organize themselves. It was necessary to set up producers' associations, taking into account the producers' different situations and the position of each of the raw materials on world markets.

These associations could be different in strength and would impose a revision of the terms of trade, together with a real and substantial rise in the prices of raw materials. This would make it possible to create the conditions for a stabilization policy which would not be a farce but a real dialogue—one between partners who, in spite of divergent interests, know that they can reach a real compromise instead of attempting to impose the view of only one side.

The second idea put forward by the non-aligned countries at that time was that, in order to engage in this struggle and obtain results, it was necessary that there should be solidarity among the Third World countries. The idea of setting up a solidarity fund enabling the producers' associations to join battle and reduce the pressure exerted by developed countries on the underdeveloped countries which had gone furthest in this direction was based on this fact.

Today everybody is aware that one of these associations, OPEC (Organization of Petroleum Exporting Countries) has been in existence since the beginning of the 1960s, but it was only in 1970, and even more in 1973 that it was in a position to use a favourable economic and political situa-

tion to impose a rise in the price of energy. Up till then the developed countries of the West had not understood that the objectives in the struggle for economic independence were anything more than just pious wishes, conferences, vague charters and statements of good intentions.

Nevertheless, the world economic system and the industrially developed countries took all the necessary measures to ensure that the danger of a real struggle for economic independence was averted. The idea of an organization of Third World countries and the setting up of a solidarity fighting fund was gradually replaced by beautiful but quite harmless ideas which would change nothing in the economic order but merely reinforce the status quo and morally place the victims of that status quo in the odd position of aggressors if they should happen to question some of its elements unilaterally.

The idea of a unilateral rise in prices and of negotiations to be undertaken by producers' associations from a stronger position was therefore gradually replaced by that of a continuing dialogue between producers and consumers, that of a stabilization fund, etc. And yet, none of the proposals of the Third World was included in the much watered-down draft resolutions of the Non-Aligned Conference held at Dakar in February 1975 or of the Manila Conference which took place just before the United Nations Conference on Trade and Development Session in Nairobi.

Now this was very odd! For on the other hand there is increasing talk in the developed countries themselves of the iniquity and dangers of the vast wastage of raw materials which occurs on a world scale, of the growing awareness of the price of economic growth as it has been pursued thus far, and of what it costs not only the peoples of the developed countries (in terms of quality of life, deterioration of the environment, pollution, etc.) but also the victims of that same growth, the peoples of the underdeveloped countries.

For three centuries past, these peoples have been subjected to the rising prices imposed on them and have been obliged to provide free, or almost free, the wealth of the planet, without anyone caring about their future or, of course, the future of mankind in general.

Should it be concluded that this talk about the fears inspired by the wastage of the planet's resources is mere demagogy and that the institutions, governments and authorities of the developed countries are incapable of making the slightest concession when Third World countries ask them to agree to changes which logically would result in a better use of the world's resources?

I think an event like the rise in the price of oil should have been greeted

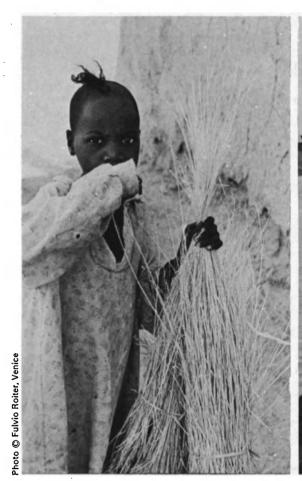




Photo © Fotogram, Paris

The new international economic order should offer children in the villages and cities in the Third World the prospect of a future based on social justice and human dignity.

with open arms by all developed countries if they were logical and really wanted to conserve the resources of the planet, and that this rise should have been approved of and supported by them. Hitherto there has been little sign of this, and every opportunity has been and still is being sought of breaking up the association of petroleum producers, which shows that we really are faced with a battle.

But as it became apparent that the struggle was having practically no results, except where a group of developing countries had managed to impose its views unilaterally, and that the struggle to change the World Economic Order was bringing to light all the weaknesses of the system and the impossibility of achieving even the slightest change in the terms of the international system by means of talks and negotiations, another idea began to gain ground.

This idea was that the Third World should count increasingly on its own resources and that, therefore, the road towards development should consist in a more or less marked withdrawal from the international system of division of labour if this system was going to remain inequitable and continue to

be the basis of a world polarization and exploitation.

For it may well be asked whether integration into the world economic system is really necessary, at any rate for Third World countries, since it is based on a division of labour which is responsible for the inequitable distribution of income and therefore for increasing the distortions (in terms of the pattern of consumption) which constitute a hindrance to real development. It may also be asked, therefore, whether such integration should continue to be considered as a condition for development.

One therefore comes to wonder whether, in order to rebuild the world system—for this will, I think, have to be done one day—one should not begin by destroying it (i.e. pulling out of it) and whether it is not by withdrawing from the system of the international division of labour that we shall create the objective conditions for the possible rebuilding of a better system which will bring out the real potentialities of the various peoples. The fact is that the resources of the planet are not distributed evenly and that consequently it would be advantageous to build a new world system



Water from this recently completed dam on the Euphrates river (Iraq) will irrigate new lands for crop growing. It will also generate electricity for industrial development in Iraq.

But any such withdrawal from the world system is only a last resort and an unhappy obligation. Is it caused by some kind of cultural nationalism, and can it be justified in terms of specific patterns of development or the preservation and development of a national culture with its particular features?

Circumstances are such that generally, when an economic development strategy is adopted, it is accompanied by an ideological and political argument which is compatible with it. I personally therefore am not shocked to see this strategy of withdrawal from the world system accompanied by a certain degree of nationalism.

There are various patterns of development and all of them are universal in character. Whether the pattern is the capitalist one in existence in most countries, which has been formed and has imposed itself throughout the world over a long period, having started three centuries ago in many countries and spread considerably during the 19th and 20th centuries, or the pattern which has emerged from the experience of Eastern Europe. particularly the Soviet Union, or again that drawn from the current experience of Eastern Asia, China, Vietnam and Cambodia—they are all universal in character.

Capitalism has created a world-wide system, and we can consider either extending it and developing along the lines and in the logic of that system or withdrawing from it. History cannot be effaced.

We must therefore realize today that any pattern for the organization of society, no matter what its level of development, presupposes short or long-term objectives related to technological development, production, consumption, the supply of mankind with material goods and the provision of a social organization, all of which are necessarily universal in character.

The ideologies which accompany these patterns are universalist. They certainly converge at some points, if only because this history exists and productive forces exist at a certain level of development. But they also have many points of divergency, and these are undoubtedly more marked. Whereas science is universal, technology, which is only putting science to work in a social context, is probably less universal than it appears to be.

The Third World, by which I mean all the countries of Asia, Africa and Latin America except the communist ones, has not produced any particular pattern, and I do not believe it is capable of producing one in this sense, because it is still economically subject to the laws governing the development of the world capitalist system, even if it calls them partly into question by means of the World Economic Order. I therefore think it is useless to ask ourselves whether we ought to leave countries free to work out suitable patterns for themselves or not, since I think that they will either take such liberty or not as they think fit.

The real question we ought to ask ourselves is whether, among the patterns of universal character put forward there are some more likely to respect diversity in global development. For I believe that there are many advantages in diversity and that these advantages are not only cultural but also economic.

Are there, then, patterns and ideologies which, while necessarily being presented as they are—that is of universal character—are more likely than others to maintain diversity rather than consider it as an obstacle to development, and if so how can they be applied?

I think that the capitalist system has hitherto been extremely destructive and has not looked upon diversity as an asset. It has also been creative, of course! It has created vast things together with a level of development of productive forces without which, undoubtedly, nothing else would be conceivable.

And we ought to ask ourselves whether this was not a stage in history, whether it did not merely create the conditions for doing something better and whether, consequently, the destruction of cultures which it brings about is not in accordance with its most fundamental laws.

I do not believe it is the machine itself which ought to be blamed but rather the social relations which, by means of certain forms of social organization, division of labour, etc., dictate certain habits and a certain subjection to the machine. It is not the technology itself but the social relations within which the technology is applied, which must be called into question.

I cannot help thinking that any talk of cultural diversity is always very ambiguous. I wonder whether it is a very positive protest against the machine which destroys cultures that the capitalist system has been and still is, or whether it is utterly inadequate.

In my opinion, the only proper way of fighting the capitalist system is by opposing it with a pattern which, while of universal character, really respects diversity and makes it an asset for the enrichment of nations. Then undoubtedly, the conditions will be achieved for cultural and intellectual co-operation which in itself can only be considered as positive.

■ Samir Amin

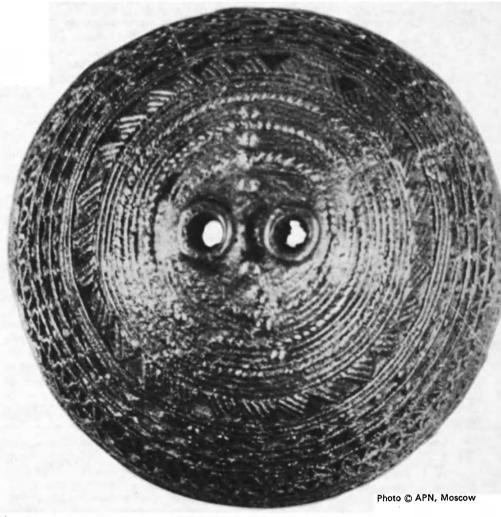
ARSENIC AND OLD PLATES

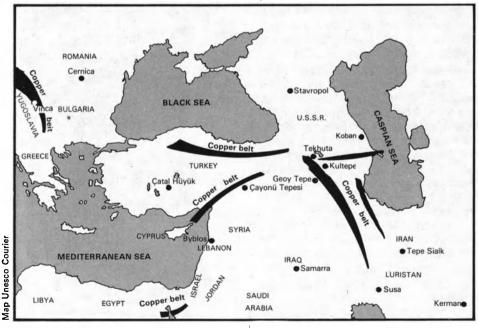
This small copper bell (7 cm across) dates from the second millennium B.C. and was discovered near Stavropol, in the northern Caucasus (USSR) It is covered with finely worked decorations and the metal contains 10 per cent of arsenic.

was there
a Copper Age
before the
Bronze Age?

by Isa R. Selimkhanov

ISA R. SELIMKHANOV, distinguished Soviet chemist, is head of the Laboratory of Archaeological Technology of the Azerbaijan Academy of Sciences' Institute of History. A specialist in the history of the metals and metallurgy of the Ancient World, he has published many books and studies on research in these fields, including the dating of ancient metals.





Snaded areas on this map show zones of copper ores at the time of the earliest copper metallurgy (7000 to 4000 B.C.). It now seems likely that metallurgy in bronze (an alloy of copper and tin) was known to craftsmen thousands of miles away from this region, at Ban Chiang, in Thailand, as early as the 4th millennium B.C.

LL over the world, archaeologists are continually discovering ancient artifacts made of stone, volcanic glass, bone, wood, minerals or metal. Metal objects are particularly interesting because, although they may have been buried in the earth for almost 5,000 years, they are often found in remarkably good condition.

I shall discuss only one of the questions raised by ancient metals: whether a Copper Age really existed before the Bronze Age, as several recent books claim.

The discovery of metal and metal working were revolutionary in the history of Man's development as he gradually changed over from the use of stone to the use of metal implements

whose superiority he prized. Metal became a means of distinguishing between the ages of history: Man's development was divided into the Ages of Stone, Bronze and Iron.

Christian Jurgensen Thomsen, a Dane, was thought to have devised this "three-period system" in 1836, although, in fact, the thinkers of antiquity had already spoken of different ages in the history of Man. As early



Lance head made of arsenical copper. Discovered near Stavropol, in the Caucasus, it dates from the second millennium B.C.

as the 7th century B.C., the Greek poet Hesiod wrote of five ages: golden, silver, bronze, "heroic" and iron. Homer also mentioned bronze in the *Iliad*. The Latin poet Lucretius, in his poem *De rerum natura*, written just before the Christian era, and Yuan Kang at almost the same time (the Han Dynasty), had already divided history into three stages: stone (or bone), copper (or bronze) and iron.

Yet no matter how Man's ancient history was divided, none of the systems makes a clear distinction between the Bronze and Copper Ages, due to these ancient writers' tendency to call copper and bronze by the same name. They thought that these were the same metal because of their similar appearance.

I want to stress that chemists, not archaeologists, initiated the chemical analysis of ancient metal objects, which launched an active co-operation between the two groups. The German chemist, Martin Heinrich Klaproth, is generally considered the

pioneer of systematic analysis of ancient metals, begun in the 18th century. Outstanding chemists such as Jöns Jakob Berzelius of Sweden, Karl Fresenius and Justus Liebig of Germany, and Marcelin Berthelot of France continued the research.

The findings of these analyses showed that the objects were made of copper and not bronze. This was the basis for the first theory in 1876 that a Copper Age had existed, at least in parts of Europe. From his later analysis of Egyptian articles, Marcelin Berthelot claimed that a Copper Age had also existed in Egypt. Thus a "four-period system" emerged for much of the ancient world: Stone, Copper, Bronze and Iron Ages.

Most books claim that tools at the beginning of the Copper Age were fashioned from native copper forged cold. Yet a Soviet geochemist, Vladimir Ivanovich Vernadsky, had previously expressed doubts about the use of native copper by Man as the first metal, except where there are large deposits of native copper, as in the area of Lake Superior (U.S.A.).

As a result of later laboratory experiments, the existence of a Copper Age in most regions did not seem plausible. By the 1930s, the old chemical analyses of ancient metals which had provided the basis for a technological history of Man's use of metal were largely invalid.

New physical and physico-chemical methods have recently taken the place of old methods, substantially modifying earlier findings. Thus, when I received a report in 1966 from the American researcher and historian, Cyril Stanley Smith, stating that tests on the microstructure of ancient copper implements found near Lake Superior revealed that they were not fashioned from cold-forged native copper, I was not surprised.

Emission spectrum analysis, used not just on ancient metal objects but also on the residue from smelting, slag and moulds, brought about the most important modifications. Spectrum analysis of ancient metals was first used in 1933 in Halle (Germany) and a little later in Leningrad (U.S.S.R.). However, quantitative spectrum analysis of ancient metal is the brainchild of the Baku Laboratory of the History Institute of the Azerbaijan Academy of Sciences, where the first significant results were obtained.

Metal objects found in the Trans-Caucasus in monuments dating from the third millennium B.C. had long been attributed to the Copper Age. While spectrum analysis confirmed that these objects contained no tin, it established the presence of large amounts of arsenic.

Considerable admixtures of arsenic were also found in objects discovered in an ancient settlement on the Kultep mound in the Nakhichevan Autonomous Republic. Analysis of items from various parts of the Northern Caucasus and the Ukraine gave similar results. The "copper" contained up to 10 per cent arsenic in working implements and 30 per cent or more in ornaments. Further analysis of casting residue, moulds and slag showed that the arsenical copper had been locally produced.

Still more ancient examples were sought. During the on-going excavations at the Kultep mound, seven other metal items were discovered: an arrowhead, an awl and various fragments dating from the fourth millenium B.C. Analysis showed that a large proportion was made from arsenical copper and that one also contained a considerable quantity of nickel. Only a few were found to contain no arsenic.

A small knife and fragments from the same period found in the ancient settlement of Tekhuta, near Echmiadzin in Armenia, are made exclusively of arsenical copper. The use of arsenical copper in the Trans-Caucasus that long ago, meant that the Copper Age in that region was hypothetical and that Man's early use of metal began simultaneously with arsenical and unalloyed copper.

Later spectrum analysis carried out on ancient metal objects from other countries has shown that arsenical copper was common from the Indus Valley to the British Isles. It was



Axe head unearthed during the ploughing of a field near Stavropol. It is about 3,500 years old and its metal contains a small amount of arsenic.

Photo © APN, Moscow

found in various regions dating from 4,000 to 1,000 B.C.

How did ancient metal-founders add arsenic to copper? Extremely rare in nature, elementary arsenic was not discovered until the 12th century A.D. In 1954 we wrote that arsenical copper was probably obtained by smelting cuprous minerals together with arsenical ones like realgar and orpiment, large deposits of which are found in the Trans-Caucasus.

Why did metal workers of antiquity choose to add to the copper arsenical



Photo © APN, Moscow

This medallion made of arsenical copper with its decorative motifs is an elegant example of the jeweller's art dating back 4,000 years. It was unearthed from a grave near Stavropol.

rather than stannic [tin-bearing] minerals or lead or antimony-bearing minerals which are very pleasing to the eye? Man did not use stannic minerals, which are uncommon in nature, until much later. Lead was also used from earliest times, in fact, but it was alloyed with copper later and less frequently since the smelting of lead and copper alloys called for greater skill and their mechanical properties were inferior.

This was also true of copper and antimony alloys. A fragment of an antimony vase found in Tello in Lower Mesopotamia and attributed to the same chronological period as the arsenical relics found in the Caucasus confirms the use of metallic antimony as early as the third millennium B.C.

Magical properties have been attributed to red minerals from earliest times. Bright red realgar, commonly encountered in nature with gold-coloured orpiment, could have caught the ancient metal-founder's eye for precisely that reason.

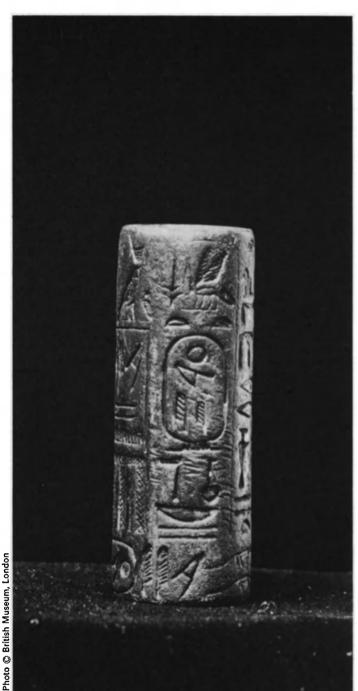


Six thousand years ago, the Egypt that preceded the pharaohs and the pyramids already possessed a flourishing civilization. It has been named from Nagada, a site 50 km. north of Luxor, where numerous artifacts dating from that period have been unearthed. Among them are several unusual statuettes similar to the one shown here carved in shale. Its high pointed bonnet recalls the white crown that was later to become the traditional headdress of the kings of Upper Egypt. Superimposed on photo are copper tools used by the people of Nagada. From left to right: needle, awl, tweezers, fish hook, harpoon point, chisel.



This openwork plate embellishing the end of a long copper pin depicts a love scene. Discovered on the edge of the Lut

Desert, near to Kerman (Iran) a city known from ancient times for its deposits of copper ore, the work dates from the second half of the third millennium B.C.



Egyptian copper seal of the Pharaoh Pepi I (VIth dynasty, 2400-2200 B.C.).

The head of a mouflon, or wild sheep, with its large, gracefully curving horns, wrought in bronze. It was found in the necropolis of Koban, near the Caspian Sea, to the east of the Caucasus. Dating from the 1st millennium B.C., the ornament is made of an alloy composed of 90 per cent copper and 10 per cent tin.



Pieces of realgar obtained from a settlement dating to the third millennium B.C. on Geoy Tepe mound near Lake Rezaiyyeh in Iran have confirmed the use of this substance in the Middle East in ancient times. Although the properties of arsenical copper are as good as those of copper mixed with tin, production of arsenical bronze declined gradually with the appearance of the tin alloy, probably due to the wholesale poisoning of foundry workers by arsenical secretions.

In such regions as Thailand and Vietnam, arsenical copper never existed. None of 80 fragments of metal objects found in excavations at the Non Nok Tha mound in Thailand was made of arsenical copper. At the same time, it was established that the most ancient tin bronze from Thailand had a tin content of 20 per cent or more and dates from 3,000 B.C. or before (1).

English archaeologist James Mellaart discovered even earlier metal artifacts in a neolithic settlement dating from about 6,500 B.C. at Çatal Hüyük in Turkey consisting of copper and lead beads and other objects. Study of slag found in one of the dwellings confirmed that it had come from the smelting of copper ore. The date when metal smelting began was a significant revelation.

More ancient metal was found in Turkey at Çayonü Tepesi during the digs conducted by American archaeologist Professor Robert Braidwood and Turkish researcher and archaeologist Halet Cambel. They found about 30 objects including small flat disks, pins and awls in layers dating from 7,200 B.C., which they claimed were made from cold-forged native copper. However, these artifacts, the most ancient metal objects ever found, had not been subjected to spectrum analysis, making it premature to assert that they are made from native copper.

Nevertheless, analytical research makes it possible to affirm that in many areas of the ancient world, Man's development passed through two major stages prior to the appearance of iron: the "arsenical" stage of arsenical copper, provisionally named arsenical bronze by scholars, and the "tin" stage with the appearance of tin bronze, although arsenic was still widely used due to the scarcity of tin.

■ Isa R. Selimkhanov

⁽¹⁾ An international symposium on research into bronze cultures in East and South East Asia was organized by Unesco and the Thailand National Commission for Unesco, in Bangkok (Thailand) in July 1976.

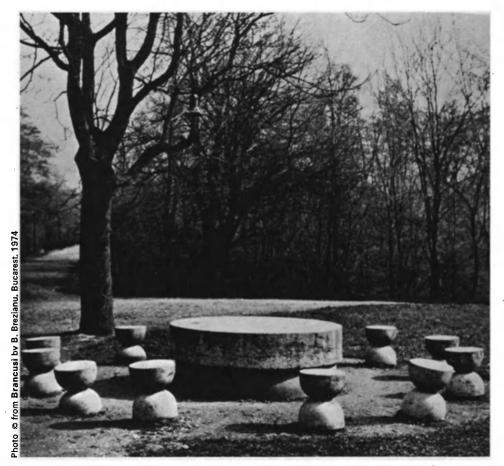
BRANCUSI an artist in quest of the absolute

by Barbu Brezianu

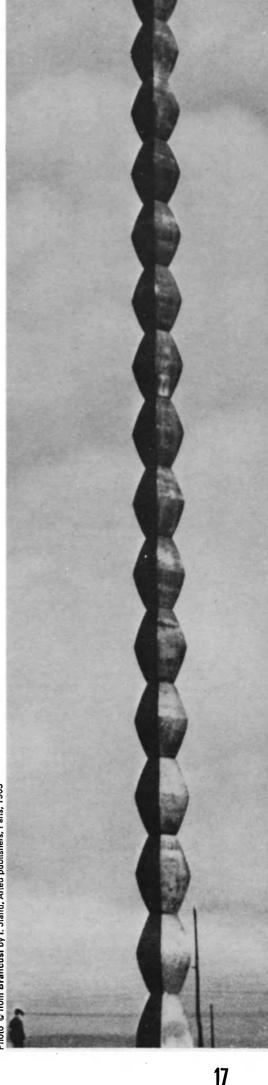
BARBU BREZIANU, Romanian art critic, is a member of the International Association of Art Critics and an honorary research worker at the Arts History Institute of the Romanian Academy. He is the author of a major study on Brancusi, published by the Academy of the Socialist Republic of Romania, in 1974.

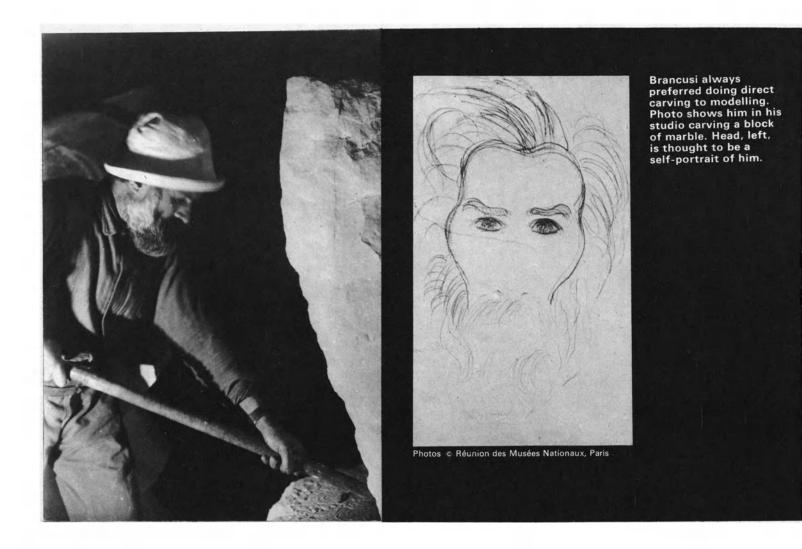
ONSTANTIN Brancusi was undeniably one of the great sculptors of the 20th century. And yet today, 20 years after his death, although the name of this Romanian artist is universally known, his work is not as fully appreciated as it should be.

Brancusi was born in 1876 of peasant stock and was to retain a lifelong nostalgia for the mountains and forests of his native region of Oltenia. His artistic education in Romania lasted from 1894 to 1902, first at the School of Arts and Crafts in Craiova and then at the National School of Fine Arts in Bucharest.



In 1922 Brancusi began to think of creating a monument to the dead of the First World War. He executed this war memorial in 1937-1938 in a park in the town of Tirgu-Jiu near his birthplace in Romania. Among the major works in the ensemble of sculptures at Tirgu-Jiu are the Table of Silence (above), a table of spiritual communion with the dead and the Endless Column (right), an axis of communication between earth and heaven.





In 1904 he moved to Paris, where he studied at the famous Ecole des Beaux-Arts until 1907. Two of his fellow students were Georges Braque and Fernand Léger. Paris was his chosen place of residence for half a century, and here he worked continuously until his death in 1957, transforming marble, wood and metal into sculptures which frequently disconcerted his contemporaries by the

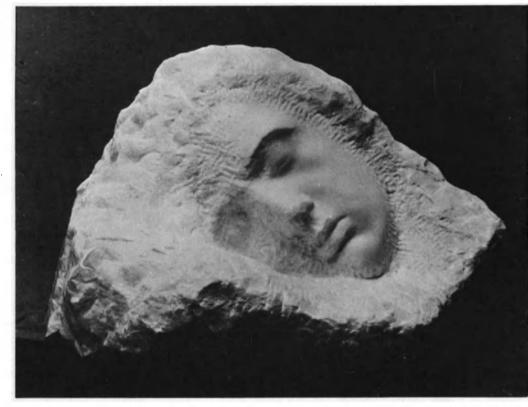
unfamiliarity of their underlying concept.

Yet from very early on it was clear that Brancusi could have had a first-class academic career. In 1898 he exhibited a bust in Craiova which

attracted much notice; and the Ecorché (anatomical model) which he made in 1901-1902 at the School of Fine Arts in Bucharest, impeccable in its technical execution, revealed the unusual virtuosity of the novice sculptor. For he had studied anatomy painstakingly, even to the extent of attending numerous dissections of

corpses.

He was a tireless worker, and had soon mastered all the difficulties of his craft. The bronzes and marbles Photos below show two stages in the experimentation with forms that preoccupied Brancusi throughout his life. In Sleeping Muse or The Sleep (below) a marble sculpture executed in 1908, the influence of Rodin can still be seen. Another Sleeping Muse (below right) displays the originality of Brancusi's search for purity of form.

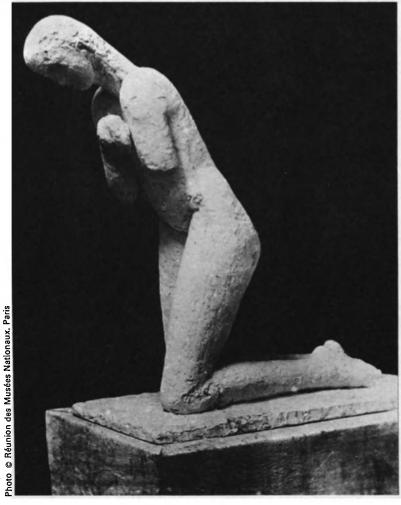


which he sculpted at the Ecole des Beaux-Arts in Paris bear witness to the sureness of his representations of the human body, though he was soon to reject these, refusing as he put it to sculpt "bronze and marble corpses" because he was exasperated by the technique which he believed turned "the living body of a human being" into "my inert sculpture... the corpse of my model".

During his last year at the Ecole des Beaux-Arts in Paris (1906-7) Brancusi discovered Rodin. The French sculptor, thirty years his senior, enjoyed almost universal renown at the time. Under his influence Brancusi, who was not yet doing direct carving, began to work towards a more sensitive way of modelling which would, through the right balance of light and shadow, contrasts and volumes, bring out the interior expression of the model.

But Brancusi was not cut out to be a disciple: the vision which inspired him was his own. He could not be satisfied by producing "one sculpture a day like Rodin. I could not work by his side, even though he was fond of me. I did what he did. I was imitating him, not intentionally, but I realized what was happening. I was not happy—these were years spent in searching, groping to find my way."

In 1952, five years before his death, Brancusi in a "Homage to Rodin" destroyed a myth which alleged that he had worked in Rodin's studio. "Ever since Michelangelo sculptors have wanted to create the magnificent, but they have only succeeded in achieving grandiloquence... Rodin came on the scene and changed everything. In his work man again became the measure of things, the module from



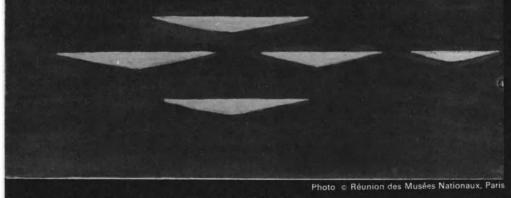
The Prayer, a bronze funerary monument executed in 1907 for the cemetery of Buzau (Romania). It is now in the National Gallery of the Bucharest Museum of Art.



which the final statue grows. made the form and content of sculpture human again. In 1906 Rodin offered to take me as a pupil, but I refused, because nothing can grow in the shadow of tall trees. When he heard my decision Rodin just said 'He's right; after all, he is just as obstinate as I am.'"

Brancusi found his own way in the years 1907-1908, as is evident from two examples of his work: one is The Prayer (1907), a bronze monument for a tomb in a Romanian cemetery (today in the Bucharest Mu-seum); it represents a nude woman kneeling with the body leaning forward, and is a perfect signpost towards everything that we shall find in Brancusi's subsequent development. The statue is not simply a woman praying: it is the quintessence of prayer.

The second sculpture is The Kiss (1908), one of Rodin's basic themes, but in this case so far removed from Rodin that it might almost be regarded as diametrically opposed to the latter's work. It has been carved directly from a block of rough quar-



Birds in the Sky, a watercolour and gouache (32 cm \times 66 cm) by Brancusi, probably executed around 1929-1930. As well as birds, the work suggests the essence of flight itself.



The Miracle or The Seal, grey marble (1943). The miracle here is the fusion of two opposites: agility and ungainliness.



Flying Turtle, marble (1943). Its streamlined form suggests a modern aerodynamic design.



Fish, grey marble (1930). "When you look at a fish you don't think of its scales, do you? You think of the speed of its movement, of its gleaming, floating body seen through the water. That's what I wanted to express."

ried stone and is composed of the waist-length figures of two lovers embracing. The same theme of two human figures in an embrace—this time full-length—is found again in a work of funerary sculpture for which Brancusi was given the commission in Paris for the Montparnasse Cemetery. In this version abstraction has been taken one step further.

This nude woman praying, this nude couple united for all eternity, presented an unusual sight in a cemetery during the first decade of the twentieth century at a time when old aesthetic and moral conventions still prevailed. The statuary could have caused amazement and even indignation had it not been for the austere simplicity of Brancusi's nudes, the legacy, it could be suggested, of the Byzantine tradition and the ancient world.

These works form an important milestone in the history of modern sculpture. The Prayer, exhibited at the 26th Salon des Artistes Indépendants in Paris in 1910, undoubtedly influenced the works produced from 1911 onwards by the German sculptor Wilhelm Lehmbruck, a Parisian by adoption who in his turn and despite his early death in 1919 exerted a significant influence on German sculpture during the period following the First World War.

The Kiss produced in 1908 was sculpted at the time when Brancusi was rejecting modelling in clay as done by Rodin, a method which he had hitherto used himself. "Which had hitherto used himself. of us was it who said that clay was like mud? He was quite right", he said to Modigliani who was to become one of the greatest twentiethcentury painters and at that time was beginning to sculpt. The significance of this rejection of soft material should not be underestimated: in the stone of The Kiss Brancusi eliminated all superfluous detail and achieved the ultimate simplification of volume.

The Kiss in its many variations finally evolved into the Gate of the Kiss (1938), one of the main elements in a sculpture ensemble created as a war memorial to the dead of the First World War at Tirgu-Jiu in Romania. The memorial also includes the Table of Silence, whose structure recalls that of the drum-shaped stone altars of Romanian village churches; it is surrounded by twelve hour-glass-shaped stone stools.

Another work in this group is the remarkable *Endless Column*, composed of sixteen elements with lozenge-shaped or rhomboid planes, which Brancusi likened to a "preliminary design for a column which when enlarged would support the vaults of heaven."

In his essay, "Brancusi and Mythologies", the great historian of religions, Mircea Eliade, wrote as follows about this 30-metre-high column in metallized cast iron: "It is significant that Brancusi chose a motif in Romanian folklore which has developed from a mythological theme dating back to prehistory... the 'heavenly column' which supports the vaults of heaven... The image must have haunted Brancusi, for it was part of the symbolism of ascension, flight, transcendence... In many ancient dwellings the central pillar was a means of communication with the heavens."

We can see that the concepts underlying Brancusi's works, and even the names of the statues, bear witness to his personal spiritual vision, so closely linked with the land and whose origins go back to the ancient culture of Thrace. It is this vision, already exemplified in the first *Kiss* of 1908, which will illuminate his artistic output for the next half century. It will also be responsible, even today, for Brancusi's reputation as a "difficult" artist, that is to say difficult to understand.

Yet around the same time, Picasso's painting Les Demoiselles d'Avignon (1907) revolutionized art. It was a first step towards Cubist expression and reflected African art which the



The vibrant image of a cry, this Cock (1941) is one of a series of sculptures on this theme executed between 1924 and 1949. Version shown shown here is in polished bronze.

The Kiss is one of the fundamental themes in Brancusi's work. This remarkable sculpture represents the force of love in the face of eternity. "We feel a heart beating there", it has been said; the heart of the world.



Western world was just discovering and which would overthrow traditional values in the plastic arts in Western culture for many years to come.

Brancusi was undoubtedly drawn to African and Oceanic art for a brief period, and it probably had some influence on works of his which have been lost or destroyed. But in the same way as he had earlier refused to work with Rodin he now turned away from masks and fetishes and also from the experimentations of Picasso. He preferred to tread his own solitary path, as dictated by his own spiritual make-up, equilibrium, serenity and philosophical wisdom.

Right up to the end of his life Brancusi subjected his works (totalling just under 300) to a continuous process of purification. Henry Moore defined the historical significance of the Romanian sculptor and his works in the following words: "Since the Gothic, European sculpture had become overgrown with moss, weedsall sorts of surface excrescenceswhich completely concealed shape. It has been Brancusi's special mission to get rid of this overgrowth, and to make us once more shape-To do this he has had conscious. to concentrate on very simple direct shapes, to keep his sculpture, as it were, one-cylindered, to refine and polish a single shape to a degree almost too precious. Brancusi's work, apart from its individual value, has been of historical importance in the development of contemporary sculpture."

Brancusi's sculpture is a return to the primeval element, the primary molecule, the germ of all life: the egg. Throughout his life he searched for, and achieved, the fullest possible significance of ovoid forms. The First Cry, the First Step, the Beginning of the World, to mention only three, are the fruits of a continuous and profound process of reflection. "Reality", he said, "is not the out-

"Reality", he said, "is not the outward shape of things, but their essence". And so the sequence of *Sleeping Muses* was created, and the *Birds* sequence which began in 1912 with the *Maiastra*, a mythical bird figuring in Romanian folk tales. The 1912 version of the latter, in polished bronze, is not merely the suggestion of a bird about to take flight: it is the essence of flight and the whole upward movement of life itself.

Between 1919 and 1940 Brancusi continued the *Bird in Space* sequence which numbered twenty-two versions, some in polished bronze and others in marble of different colours, their sheen and polish varying according to the material used. Each curve describes an asymmetric ellipse which merges into the heavens.

This image of movement towards the absolute the sculptor even succeeds in imparting to the form of a turtle, that most ponderous of beasts, in his unusual *Flying Turtle* (1943) This sculpture in marble is reduced to its simplest expression, with an oblique movement suggesting an upward pull against gravity, flight in a dream.

We find the harmony of ovoid forms again in the remarkable portraits of *Mademoiselle Pogany*, about whom the sculptor-poet Jean Arp wrote:

Who is this beauty? It is Mademoiselle Pogany, related to Lady Shub-ad, the beautiful Sumerian woman, and to Nefertiti.

Mademoiselle Pogany is the fairy godmother of abstract sculpture.

She is made of arches, curves, pure shells.

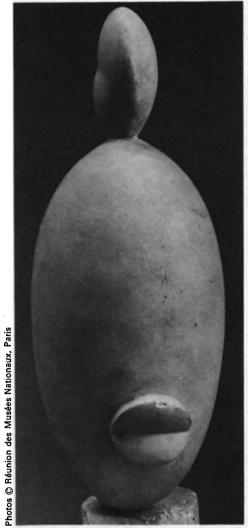
Encased in pearl.

Her eyes hatch white moons.

According to the Romanian art expert Edgar Papu, Brancusi believed that his materials were alive, suffused with their own powers of thought and spirit. In the reflections of Brancusi's lovingly polished bronzes, Papu could even perceive light being formed from the sculpted material.

Right up to his death Brancusi continued to search—and make discoveries. He can be regarded as a

Right, the White Negress and far right, a version in polished bronze of Mademoiselle Pogany, a subject Brancusi depicted in almost 20 " portraits ". In each one he went further in his search for simplicity and purity of form.





precursor of kinetic art: in his studio he sometimes used electric motors to move his sculptures round on a base. He invested the pedestal with a new significance: instead of being the mere support of a piece of sculpture it became an integral part of it, an essential complement, a work in itself. For the variations on a theme in his sequential works, we find that in each case the pedestal is a creation in itself, rich in resonance like the music to the lyrics.

In addition to being a virtuoso in marble and bronze, Brancusi gave new life to sculpture in wood, suffusing the carving with a secret and intense life of its own. We can see this in the four hollows of the Spirit of Buddha (dating from the 1920s), later renamed the King of Kings, which truly seem to be inhabited by spirits. The same applies to Socrates (1923), Chimera (1918) and Adam and Eve (1917), an abstract work over 2 metres high carved in old oak on a chestnut wood and limestone base, which is a perfect example of the pedestal as conceived by Brancusi, i.e. an inseparable part of the total concept of the sculpture.

Writers, poets, philosophers, painters, sculptors, critics and art historians-a whole generation has recognized the genius of Brancusi's art. It is as though the world has been confronted with another, new world. We will leave the last word to Jean Arp in his evocation of the studio of the Endless Column on "one evening in May 1929".

Day was drawing to a close, but the space around a bird was dreaming of an arrowed flash of lightning and did not notice that the bird had flown off and was finding its way to the studio of the endless column.

The cock was crowing-cock-a-doodle-doo-and each sound made a zig or a zag in its neck.

Brancusi's cock is a saw that is joy. This cock saws the day of the tree of light.

human fountain:

The cock

The seal

His self-portrait: the endless column. The fish, giant king of the flint-rocks swimming in a cloud.

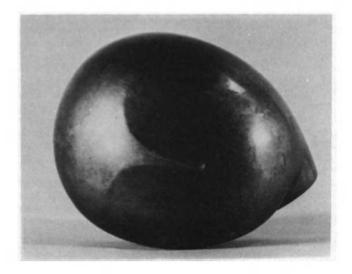
The prodigal son who mounts the steps by descending.

The penguins which lay the egg of the newborn.

A fountain recounts these plastic fa-

These are fables of such subtlety that the revelations they offer us are limitless.

📕 Barbu Brezianu



Polished bronze version of Prometheus, a subject Brancusi first treated in 1911. There is no flat surface in this oval form recalling the germ of all life: the egg.

RENÉ MAHEU

international co-operation and the struggle for development

by Paulo E. de Berrêdo Carneiro

René Maheu at the age of 36, when he was teaching humanities and English at the Muslim College in Fez (Morocco). He also taught philosophy at the French lycée in Fez. Five years later, in 1946, he joined Unesco, of which he was to be Director-General from 1962 to 1974. René Maheu died in December 1975.

ENE Maheu was sworn in as Director-General of Unesco on 14 November 1962, and I was President of the 12th Session of the Unesco General Conference when he took the oath to abide by the principles of our Constitution.

I had the privilege of being René Maheu's friend and associate from the time of Unesco's creation, and I was able to see him at work during the finest years of his life.

At the time he became Director-General, René Maheu had been with Unesco for just over 16 years. "I often feel nostalgia for those far-off days," he said in his inaugural speech, "not only because I was younger then and my responsibilities were less onerous, but also because there was then within the Organization a feeling for ideas and intellectual quality for their own sakes: of course it was sometimes naive, or makeshift from the administrative point of view, but still it imbued the Secretariat with a sort of youthful vigour full of original thought and enthusiasm."

"I wonder if I can convey to you," René Maheu said later in this inaugural speech, "the depth of the feelings aroused in me by everything that Unesco stands for... as a teacher coming from a family who were all teachers themselves, I have spent the major part of my life concerned solely with the austere and noble vocation of education. If I listen to

PAULO E. DE BERREDO CARNEIRO of Brazil is a member of Unesco's Executive Board of which he was chairman during 1951-52. He was permanent delegate of Brazil to Unesco from 1946 to 1965.

a discussion about the fight against illiteracy, my heart immediately evokes memories of my paternal grand-parents, with whom I spent my childhood and who were themselves illiterate.

"...Yet it was from them that I learned the things which I consider to be truly fundamental to my character and beliefs; first and foremost the thirst for education amongst humble people, and their passionate desire for social justice. Because of this I was not surprised in later years when I witnessed the upheavals which rocked colonized nations throughout the world, ousting even the oldest, proudest and most firmly-rooted ruling powers.

"I recognized in this irresistible movement the same search for enlightenment and dignity, the same thirst and the same passion, as had been experienced by those who had created my own heart and blood, but were now being manifested on the greater scale of humanity as a whole. And since I have found in Unesco so many personal raisons d'être and potentials for achievement within a framework of universality, it is right that I should today commit myself to Unesco without reservations."

Indeed, no commitment has ever been honoured more faithfully.

As Unesco grew in his hands, René Maheu grew with it. Personal experience had taught him that Unesco, concerned as it was with things of the mind, had to be an intellectual and spiritual reality itself if it was to be truly effective.

His contacts with every kind of



person throughout the world had been a living proof to him of the unity of the human race. Humanity is a single being composed of past and future generations; thus if harm is done to one of its members harm is done to all.

Neither disapproval nor political prejudice ever prevented René Maheu from proclaiming Unesco's universal vocation, nor from opening its doors to welcome all those countries who were in the process of freeing themselves from colonial domination.

When Vittorino Veronese, then Director-General of Unesco, appointed him as Deputy Director-General in November 1959, René Maheu displayed a flawless knowledge of Unesco's means of action, the problems it faced, the resources it required and each of the many aspects of a programme designed to meet the needs of all its members, whether great or small, rich or poor, in the fields of education, science and culture. Already at that time, no one was better qualified to lead Unesco than René Maheu.

When the six years of his mandate were up, Unesco's member states (whose numbers had increased considerably following the accession of many African countries to independence) unanimously re-elected him to office on 19 October 1968.

This was a just reward for the results that he had achieved with equal success in the two domains—intellectual co-operation and aid for development—which he had always striven to render complementary.

In years to come, when a historian examines Unesco's archives, he will find the documents bearing witness to René Maheu's twelve years of leadership to be of inestimable value in understanding the intellectual and political problems of our time.

René Maheu anticipated this, and the care he took to depict the truest possible image of Unesco in his writings and speeches is the best proof of his respect and love for the Organization.

The anthology which contains a large part of his works, under the expressive title of Civilisation de l'Universel, makes it possible for all those who share the hopes and fears of our century to participate in the efforts being made by Unesco to create a new social order based on the Universal Declaration of Human Rights.

René Maheu was proud to devote the most important part of his life, his thoughts and actions to the search for a way of creating a peaceful world devoid of divisive cultural and economic inequalities in which each individual would be consciously aware that his share of happiness formed a part of happiness on a universal scale.

■ Paulo E. de Berrêdo Carneiro

From an address given at the Maison de l'Amérique Latine, in Paris, June 1976.



René Maheu, at the age of 63, visits the reconstruction site of the temples of Abu Simbel, in Egypt, in 1968. The small trees were planted for landscape restoration around the temples.

«LA CIVILISATION DE L'UNIVERSEL»

Beyond national sovereignty

I am deeply convinced that in the world of today, true independence of nations goes beyond the classic attributes of sovereignty and derives essentially from autonomy in national development. However, since development can only take place from within; and as education, science and culture are without a doubt vital factors in any such development, it follows that the part played by Unesco in these domains which constitute its field of operations are a factor of true independence.

Development as we understand it today means the development of man by man and for man. What the 20th century, making use of socio-economic terminology, describes as development, is the same thing that the

18th century, in more strictly political terms, called freedom.

The dawn of a planetary civilization

... Mankind is moving towards a planetary civilization. It is being moved in this direction by a twofold impulsion, firstly the unceasing advance of technology, and secondly by a moral aspiration just as ineluctable, namely man's desire to attain humanity. For Unesco there is no nobler task and none more in keeping with its mission than to work for the achievement of a united mankind, in control of itself and of the universe.

Unesco, Paris, 22 October 1964 (13th Session of Unesco's General Conference).

Development and human dignity

The transformation of the world and its economic and technological progress would be meaningless if man, as a physical being possessing a body and a mind, who is both the generator and beneficiary of all these necessary changes, were not the ultimate goal of progress. Development is no more than a tool to be used for creating a final product. This product is human dignity.

Paris, 20 November 1963. Reopening of the Institut Français de Presse.

Man: the alpha and omega of development

Man does not only constitute the resources and materials of development, nor is he simply its agent; he is its true purpose. After all, who and what are being developed, and for whom? The answer is man; for his own sake. Of course it is a fine thing that human beings and the activities of society are nowadays looked upon as means of production, so to speak, rather than mere consumer goods.

However, we should not be content to let matters rest here nor congratulate ourselves too readily; for an economy which makes use of man to increase productivity cannot be described as humanist. In fact the only kind of economy which can be qualified as humanist is one which considers man to be both the alpha and omega of development.

Paris, 22 April 1964. Lecture given at the Sorbonne on the invitation of the University of Paris and the French Institute of Economic and Social Development.

Education and human change

Nothing at the present time is as important as education. I am not just speaking from an ethical or moral point of view, but rather from a realist and even political one; for educational problems have now acquired political dimensions.

The times have passed when ministries of education were concerned solely with technicalities. In all countries, whether they are already developed or are still developing—and as far as education is concerned every country is still developing—a mutation is taking place in mankind, and it is precisely in education that it is revealed.

We are indeed witnessing a real mutation of mankind, which involves profound and radical changes in education. When these changes fail to take place, educational problems take on a political aspect and reveal themselves in disturbances which can

affect the stability of governments and sometimes even whole regimes. Unesco, Paris, 26 August 1965. Report to Unesco's Executive Board.

The art of learning

The continual evolution of our civilization, together with the constant growth and renewal of human knowledge, make it imperative for every man and woman to keep up-to-date what he or she learnt earlier in life. Thus the purpose of education is not so much to provide once and for all a fixed sum of knowledge as to teach the art of learning: and to make learning a lifelong process.

Bangkok, 22 November 1965. Conference of Ministers of Education in Asia.

"Scientific progress merely encircles the globe from one industrialized country to the next, leaving enormous areas in darkness and ignorance."

René Maheu, Paris 1963. 15th anniversary of the Universal Declaration of Human Rights.



Calligraphy lesson in a Japanese school. This youngster's brush strokes are forming the word "peace" in Japanese.

War on illiteracy

I believe the fight against illiteracy to be the most urgent and exciting task facing our generation.

In order to eliminate illiteracy we need to fight simultaneously on two fronts. First and foremost we must make sure that there is compulsory primary education everywhere, since otherwise legions of new illiterates will incessantly be joining the ranks of those bequeathed by the past. At the same time we must redouble our efforts to reduce the huge existing backlog of adult illiterates.

In this age when science is opening up the way to the stars, it is totally inacceptable for two-fifths of mankind to remain the prisoners of ancient deprivations. Do we really want mankind to be divided, with one half reaching the stars and the other left behind in caves? No peace could possibly be lasting in the face of this terrible injustice whereby the benefits of progress are so unequally distributed.

Copenhagen, 26 August 1964. Conference of the Interparliamentary Union.

The educational values of sport

Sport is an order of chivalry, an honour, a code of ethics and aesthetics, whose members are recruited from all peoples and social classes and intermingled in a worldwide fraternity. Sport represents a truce.

In our technological societies, where we are subject to the merciless law of work, being judged by what we have and having only what we earn, it provides a free and sublime enrichment of our leisure hours. In

"We need to take a fresh look at out-of-school education for young people and adults, particularly in terms of training illiterate adults for more productive jobs, expanding workers' education facilities, linking functional literacy to agricultural development, and thereby enabling millions of men and women to participate in the life of the community."

René Maheu, Bangkok, 1965. Conference of Ministers of Education in Asia.





this era beset by antagonism and conflict, ruled by the lust for power and pride, sport is a sublime respite in which fair competition ends in mutual respect and friendship...

... Sport is education, of the truest and most positive variety, that is to say education of the character. It is a science, because a sportsman must have patiently acquired selfknowledge in order to attain perfection

Sport is culture, because the ephemeral movements with which it embellishes space and time highlight, by giving them a dramatic form, some of the most fundamental—and thus the most profound and far-reaching—values of nations or indeed of the entire human race. Sport is also culture in that it creates beauty, especially for those who have least opportunity to enjoy aesthetic pleasures...

What could be more barbaric than this public identification with champions, this national appropriation of an individual's or a team's victory? These flags and anthems, these banner headlines in the newspapers screaming "We won" or "National defeat"—do you not agree that they are an odious exaggeration of the spontaneous reactions of a crowd, and also a shameless exploitation of its most generous impulses? At all events it is the direct opposite of a catharsis: it is a regression to a primitive mentality.

Unesco, Paris, 28 October 1963. Address on the centenary of the birth of Pierre de Coubertin.

Sport and individual self-expression

Sport ought to play the same formative part in adult leisure as it does in young people's education. However, if adults are to use their leisure hours for sport, they will require facilities of a standard equal or superior to that usually found in schools and universities. It must be admitted that in many countries these facilities are rudimentary, and where they exist, they are not always of a purely educational nature, aimed solely at giving an individual the opportunity for free self-expression.

Tokyo, March 1965. Message presenting the "Manifesto on Sport" published by the International Council of Sport and Physical Education.

Universities in an age of change

Nothing is of greater importance for a university than to apprehend the significance of this vital moment which heralds a new age. If universities should fail to achieve self-renewal they would disappear, at any rate in the form that we know and value, together with their wealth of humanism bequeathed by ancient traditions.







"Sport is probably the aspect of modern life which is most widely encountered throughout the world—the only one, perhaps, which is common to both industrialized communities and developing countries. It is also, in a steadily increasing degree, one of the most vigorous forces in international relations. There are few international exchanges, encounters or contacts which arouse so much mass feeling as sports events."

René Maheu, Unesco, 28 October 1963.

- 1 Smilingly to school in Lagos (Nigeria).
- 2 Stocking up for a snowball battle at a heated open-air swimming pool in Moscow (U.S.S.R.).
- 3 Ball game on the sports ground of the University of Amman (Jordan).



"Unless it has its own scientists and technicians, no country can call itself free. This involves the whole problem of scientific and technical training from secondary education to fundamental research..."

René Maheu, Geneva, 1965, addressing the U.N. Economic and Social Council.

Above, distinctively styled campus building at the University of Ibadan (Nigeria)

I am sure that universities will again prove able to accomplish this self-renewal in order to meet the needs of a world in the throes of revolution, and will be able to bring about the changes which are essential if they are to recruit their members and achieve intellectual excellence on the widest possible basis of social justice.

Tokyo, 31 August 1965. Opening of the 4th Conference of the International Association of Universities.

The search for cultural identity

Every struggle for freedom involves a fundamental need for a renewed awareness of the nation's cultural identity. Because of this, the first steps to be taken on gaining independence consist in re-establishing the national culture which has become estranged and in creating new conditions for its existence so that it can be master of its own destiny. Algiers, 12 November 1963 at the ceremony when René Maheu was awarded the degree of Doctor honoris causa of the University of Algiers.

Towards a new humanism

We need to evolve a new form of humanism which will strike a balance between science and culture, between science and technology, and—within the confines of science itself—between the natural and human sciences. In an age when man's domination of realms once unheard-of, such as atoms or the stars, is continually being extended, he needs to keep a tight grip on himself and his perceptions, not only because he is the measure of all things, but much more because he chooses the path of his own history and is the sum of all his endeavours. Man's existence only has meaning as a total concept.

At the present time there is no task more urgent than to provide modern man with a new meaning embracing the whole range of his ideals. I believe universities are the best place for working out this humanist synthesis with all the necessary freedom and discipline of thought.

Cracow, 31 January 1964. Address at the Jagiellonian University of Cracow (Poland).

The nature and meaning of science

"Knowledge is power", said Francis Bacon. True enough the whole of our technological civilization is based on this fact. But knowledge implies, first and foremost, thinking—conceiving naure in a certain way. Knowledge is scientific only by and through the mind that produces it and which alone gives it meaning for man and relevance to things.

Science is not just a collection of facts and formulae which can confer power on man without more ado. To think along these lines is to regard knowledge as magic. But science is the opposite of magic. Scientific knowledge is simply the crystallization of certain acts of the mind. It is above all this mind—this scientific spirit—without which knowledge could not bear fruit or even have meaning, that must be implanted and developed at every level of intelligence and activity.

Geneva, 4 February 1963. Opening of U.N. Conference on the Applications of Science and Technology for the Benefit of the Less Developed Areas.

Science and intellectual liberation

The acquiring of knowledge, especially practical knowledge, takes far too great a precedence over the acquiring of the scientific spirit. This spirit is inadequately instilled into the minds of middle and lower grade officials, who usually concentrate on remembering the facts and formulae of science which they then apply mechanically.

Teaching of this sort, where memorizing is given priority over the fostering of intelligence, has more to do with training than with education in the true sense. It leads right away from science, which is essentially a principle of intellectual liberation and the mastery of nature. It also leads right away from what developing countries most need if they are to regain control of their history.

There is much discussion of stresses and lack of balance caused by the opposition between an imported scientific and technological civilization and traditional national cultures in developing countries. Of course this problem does exist, just as in every case where a society is subjected to a process of rapid evolution under the influence of external factors. But this opposition and the resulting stresses really occur because the countries concerned are not presented with the true face of science.

For science constitutes a civilization—or rather it is the only potentially universal civilization. But to these countries it seems more like a sort of magic from abroad which gives them sudden power. And if this civilizing factor is not apparent to



Continuing its major international campaign launched ten years ago for the preservation of Venice, Unesco organized a World Week in the city in September 1976. The participation of internationally famous artists (musicians, actors, dancers, singers and comedians) from different parts of the world gave the gala week a brilliance appropriate to the renowned city of the Doges. Left, detail of the colossal bronze horses on the facade of St Mark's Cathedral in Venice.

Unesco's humanist mission

It has often been said—but it cannot be said too often—that Unesco is an organization concerned with man and his destiny.

All its undertakings are based on a particular conception of mankind which it is continually trying to promote and put into effect on a universal scale. In all Unesco's work, however technical or specialized it may be, there is always a purpose, a meaning, a dimension which bring out the totality of man that is in each of us and the oneness of humanity that is in all of us.

Unesco is thus, by its very nature, committed to the spirit of synthesis, and we must make sure that neither the lure of erudition, nor any demand for efficiency, draws it so far into specialization that it loses sight of the humanistic vocation which is inseparable from its ethical mission. Unesco, Paris, 13 December 1965. Symposium on Science and Synthesis.

The spirit of justice and tolerance

Unesco is founded on the belief that in the long run it is the freedom of man which decides the path of history, and in particular which makes the choice between war and peace—"wars are born in the minds of men"—so that there can only be true peace as long as the mind abides by an order which it respects.

What is this order? It is that of the dignity of man, which finds its expression as specified in the various human rights; whose authority in society is called justice; and whose prevalence in people's hearts is called love, or at least tolerance.

This is the reason why the founders of Unesco stated that "it is in the minds of men that the defences of peace must be constructed".

Education, science and culture are the great disciplines which shape and inspire the mind; and Unesco's mission, its ultimate reason for existing, is to use these disciplines—and I stress the word use—in order to instil

those who only extract from science its practical technological advantages, this is mainly because science teaching is neglecting the vital point, namely, the scientific spirit and the methodology of science.

Geneva, & February 1963. Address to the U.N. Conference on the Applications of Science and Technology.

A universal cultural heritage

The notion of a universal cultural heritage, which belongs to mankind as a whole and must be preserved in the interests of the world community, is a characteristic feature of our age. It is quite different from the purely national, not to say nationalist, concept of culture, which in the past often gave rise to incomprehension or even contempt towards other civilizations...

... The works which are today described as monuments differ widely in their character and appearance, but they have one thing in common; they

form an integral part of the environment which man has created in which to live, devised by him with regard both for spiritual values and for the material needs of his life. Hence beneath their purely decorative aspect, these monuments express what is most primal and most meaningful in man's being, namely his roots in history. Monuments are that history turned to stone.

They may be the humble remains of prehistoric dwellings or sumptuous palaces from the great classic ages, temples once devoted to religions which are now dead or holy places to which worshippers still flock, complex edifices which we owe to the subtle skill of great artists or unpretentious examples of traditional architectural craftsmanship. But each of them bears witness to a particular way of life and expresses the aspirations, tastes and beliefs of the men who built it.

Unesco, Paris, 2 June 1964. Opening of the International Campaign for Monuments. as deeply as possible in the consciences of people and nations this desire for justice and tolerance which I mentioned earlier and which in the last analysis decides between freedom and slavery, life and death.

Geneva, 7 July 1966. Address to the U.N. Economic and Social Council for Unesco's 20th anniversary.

Human rights, justice and peace

It is Human Rights, as defined in the Universal Declaration of 1948, which inspire the whole of Unesco's work, and give it its meaning; its work for the establishment of standards, the aid it furnishes to development, its promotion of intellectual effort, in fact all its activities are designed to facilitate the advent of a civilization of the universal.

Peace itself has no value and, strictly speaking, no reality for Unesco unless it is founded on justice, which is nothing other than human rights in action. Peace, for Unesco, is not the illusory security or transient stability represented by the dominance of one power or even a balance of power, the goal pursued so desperately in an armaments race that is as vain as it is exhausting.

Peace is justice acknowledged and this, we know full well, can be attained only by radical changes in the structure of societies and the organization of the world. From Unesco's point of view, in which the static has no place, the cause of peace and the cause of progress coincide.

The unity of mankind

... Beyond the relative effectiveness of its work, Unesco's greatest triumph is that it—perhaps more than any other organization—has enabled the men and women of today, despite the diversity of their cultures, interests and regimes, to show, at least potentially, the universality of their conviction that mankind is one, sharing a common nature and ideal. And it is in this way, paradoxically, that Unesco is coming to represent a force with which the political realists will have to reckon.

"Serving the Mind as a Force in History"— Part 5 of "In the Minds of Men", a work published by Unesco for its 25th anniversary, Unesco 1972.

Towards human brotherhood

International co-operation is both a necessity and an ideal.

It is a necessity for modern civilization, because the opportunities for development which this civilization offers can only be exploited, the problems of development which it presents can only be resolved, by orga-



AGAINST RACISM AND APARTHEID. During a quarter of a century Unesco has sought to combat the injustices and iniquities for which racism and the policy of apartheid are responsible in the world. "We shall have to struggle for many more years, "declared René Maheu, at Unesco's H.Q., in 1963, "before education at every level and in all subjects can free the rising generations from the distorting influence of stereotypes and prejudices."

nizing the communication of knowledge, the confrontation of ideas, the pooling of resources and the conjunction of efforts within increasingly extensive and complex systems which transcend the boundaries of nations, however vast and powerful these may be.

It is also an ideal—and by that I do not mean a dream, but a moral imperative—for men are coming to realize more and more that they are morally as well as physically interdependent.

Each of us is increasingly aware that he cannot be completely happy if others are destitute or live under bondage, that he cannot be really at peace with himself if others are waging war against one another—in short, that he cannot attain his full stature as a man if injustice and want are preventing other men—all of them—from attaining that stature, like him and with him. I say all of them, for, once we admit in our thoughts or in our deeds, that some shall be excluded from humanity's family, we lose a part of our own individual humanity.

Such is the twofold justification for international co-operation, which institutions like Unesco are designed to serve, and I call upon you to dedicate yourselves to it from now onwards, with all the enthusiasm and generosity of your youth.

For, although international co-operation needs sound organization and technique if it is to be effective, it

cannot be achieved by those means alone. Even more, it needs a certain openness of mind, a certain warmth of heart, in short a readiness to serve, which itself implies a conversion to human brotherhood.

It is to this great cause that I call upon you to dedicate yourselves.

Please do not misunderstand me. I do not ask you to abandon those tasks which you are to undertake within the context of your family, your career, your country. I only ask you to remember, when carrying out these tasks, that you also belong to a larger family, a broader life and a vaster community, which is mankind.

I ask you to realize that the meaning and value of your existence go beyond the immediate confines of your own personal destiny and that you are taking part in the same splendid adventure as the rest of mankind, an adventure which calls for understanding and effort from all. Lastly I ask you to regard every man you meet as a brother, that is, as your equal in dignity, with the same needs and the same hopes, regardless of his race, country, language, social status or beliefs.

You are growing up in a period of technological miracles. Your generation will reach the stars, but it is Man that I should like you, above all, to reach, to respect and cherish, in yourselves and in others.

New Year's message to the young people of the world. 31 December 1964.

The texts published here are taken from speeches and writings by René Maheu, published in French in an anthology entitled La Civilisation de l'Universel, Inventaire de l'Avenir, in 1966, by Editions Laffont, Paris and Gonthier, Geneva.

AN INTERNATIONAL **CULTURAL** CENTRE IN THE HILLS OF BURGUNDY

by Philippe Ouannès

N January 1975, the people of the French town of Avallon, on the edge of the Morvan hills, the gateway to Burgundy, witnessed the arrival of a number of earth-moving machines which set about levelling off the top of a small mound close to the town centre. Some months later they were intrigued to see taking shape a weird piece of futuristic architecture with roofs which also served as porches and with doors set into the roofs.

This was the International Documentation and Cultural Activities Centre (Centre International de Documentation et d'Animation Culturelle) which opened in June 1975. It got into its stride almost at once by holding, in turn, an exhibition of "One hundred drawings by Japanese children" and a Unesco philatelic exhibition and by hosting in October a travelling exhibition on the art of Oceania, organized by Unesco.

However, events such as these are

The International Documentation and Cultural Activities Centre in Avallon is designed on avant garde lines. Inside the buildings mobile partitions enable rooms to be adapted for different uses.

including exhibitions, conferences and film shows.



The section of Avallon lying between the Clock Tower and the Square of St. Lazare is one of the most ancient parts of this small town in Burgundy. The house at the corner of the square dates from the 15th century.

PHILIPPE S. OUANNES, of Iran, is Assistant Editor of the French-language edition of the "Unesco Courier".

only part of the many activities undertaken by the Centre, which was designed to cater for the varied and complementary requirements of its sponsors: the French National Commission for Unesco, the municipal authorities of Avallon and the Association Culturelle de l'Avallonnais, a regional cultural association of international scope.

Their aims were of two kinds: firstly to provide the French public with information about Unesco's ideals and programme and also about the activities of organizations in the United Nations family, and secondly to arrange meetings, symposia and various other events embodying these ideals and enabling Avallon to play a full part as a host town and a meeting place.

But there was also another aim, namely to create, somewhere other than in a capital city or large town, an international centre for documentation and cultural life and bring information closer to those for whom it is intended. In this respect the Centre is an outstanding example of its kind. As an attempt at decentralization it has proved a big success.

The "weird building" was to become a hive of activity and between June 1975, when it opened, and June 1976, it was visited by almost 10,000 persons. School groups, cultural societies and passing visitors were thus enabled to attend various events such as exhibitions (for example an exhibition of African art, accompanied by film shows) audio-visual montages (such as one organized to mark International Women's Year, using material supplied by Unesco) and so on.

Not only is the Centre a focal point of regional activities but it has also become widely used for meetings and receptions. Seminars and training courses on integrated environmental planning have also been held there for specialists from Algeria, Benin, Brazil, Canada, Ivory Coast, Japan, Laos, Lebanon, Madagascar and Venezuela.

In March 1976, the Centre was visited, at the invitation of the French National Commission for Unesco, by the Secretaries-General and repre-

sentatives of the National Commissions for Unesco of Algeria, the Central African Republic, Chad, the Arab Republic of Egypt, Iran, Lebanon, Morocco, Nigeria, Switzerland, Tunisia and Zaire.

Among the topics discussed by the Secretaries-General at one of their working sessions was the role of the National Commissions with regard to information and liaison between National Commissions, and between the Commissions and Unesco.

One of the principal responsibilities of these Commissions is to make Unesco's projects more widely known and to set them more firmly into the cultural context of each of the Organization's Member States. This is also one of the objectives of the Documentation and Cultural Activities Centre. As Mr. Yves Brunsvick, Secretary-General of the French National Commission, pointed out, "What is needed is to draw on the fund of ideas in Unesco and put them into wide circulation through the agency of the National Commissions."

In addition, the Centre arranges visits and study sessions for prominent figures from abroad who are in France under the auspices of Unesco. The co-operation and hospitality of various sectors of the local community and the municipal authorities have enabled all these guests to find out about the everyday life and attractions of a French town of some 10,000 inhabitants with a rich historical and artistic past, situated in one of the most beautiful regions of France.

The location of the building and its low profile were dictated by a specific concern to respect the urban environment. Indeed, only a few hundred yards away, as the crow flies, is the clock tower, one of the town's most ancient monuments. Stretching away from the tower is the "Terreaux", a terraced walk providing a vantage point from which one can see a panorama of the town and its surroundings, the magnificent Burgundian valleys steeped in a singularly intense light.

The Centre is built in a fold in the ground so that it in no way obstructs

or spoils the view of the surrounding countryside in which the golden corn alternates with "the lush green pasture in which herds of sleek white cattle peacefully graze", and in which the ochre tiled roofs typical of Burgundy and steeples and turrets faced with slates nestle among clumps of trees.

The Centre thus fulfils several functions both nationally and internationally. The building also had to be sufficiently versatile to fulfil a number of functions with rooms of various sizes tailored to meet different requirements: exhibition and projection rooms, working and meeting rooms, space for filing and storing documentation, reproduction and information material as well as audio-visual equipment (magnetic tapes, films, slides, etc.).

For in addition to Unesco documents, the Centre also distributes material produced by the United Nations and its principal specialized agencies including the World Health Organization, the International Labour Office and the Food and Agriculture Organization.

Two figures alone are enough to illustrate this intensive flow of information in all the fields in which international organizations are involved. In 1968 more than 7,500 documents concerning the United Nations were circulated (periodicals, brochures, audio-visual material, etc.) as against more than 75,000 in 1975. Growth on this scale speaks for itself. And one might add that the periodical most in demand at the Centre is... the "Unesco Courier".

Finally, the Centre is also a permanent focus for local cultural activities. The mass of Unesco documentation and audio-visual material available for on-the-spot use by the people of Avallon, as well as the opportunities to exchange views and make personal contacts, provide a basis for continuous activity, unique of its kind, to promote international understanding and co-operation. The expression coined in Avallon itself, "Unesco in the community" has now become a firm reality.

■ Philippe Ouannès



On the ancient ramparts of Avallon, the Chapter Tower looks out over the wooded hills close to this part of the town.

Letters to the editor

THE CELTS

Sir,

May I congratulate you on the number devoted to the Celts (December 1975) which is the most beautifully produced "Unesco Courier" that I have yet seen.

> Brendan Parsons United Nations Development Programme Ramna, Dacca, Bangladesh

OUR SPLIT BRAIN

Sir.

May I enthuse loud and long about the magnificent "Courier" issue on the "Split Brain" (January 1976). I have heard its praises sung by neurologists, psychologists, psychiatrists and humble educators like myself. It most certainly is one of the very best pieces of "popularization" of scientific material ever published anywhere. In this issue you have really excelled yourselves.

H.W.S. Philip Professor of Education Macquarle University New South Wales, Australia

ETHICALLY INDIFFERENT BRAIN RESEARCH?

Sir,

The "Unesco Courier" issue on brain research (January 1976) is fascinating, but only to the point where it becomes frightening. Our century has already witnessed chemists who have discovered the most dreadful poison gases; physicists who could not prevent others from using their inventions for the production of nuclear bombs; genetic experts with ambitions to correct defective hereditary traits.

And now neurophysiologists, psychiatrists, brain researchers, biologists and others initiate us into the very free research which they do coolly and impartially. They not only treat rats, birds, dolphins, bulls, goats, cats, monkeys, but also premature babies and patients with paranoic or other behaviour disorders, by means of drugs, injections, electric shocks, cranial probes, two-way radio transmissions, evaluation by computers, are

And all this, of course, for the greater honour of science (or of scientists?) in the best interests of the patients and for the benefit of animals and human beings. (Who, by the way, has invested us humans with the right to implant metal probes into the cranium of a gibbon?)

Distinguished by his "cool resear-cher's mentality" and unafraid of any consequences of his work is Prof J.M.R. Delgado, of Spain, (author of one of your articles).

It is sad that an uncounted number of persons have to suffer from the results of such research. They are systematically ill-treated, tortured and abused in the name of research.

How can people trust scientists such as these researchers into the human brain who fail to devote even one paragraph to the ethical or social considerations of their work?

Ingo Knaup Wettingen, Switzerland

Editor's Note - Professor J.M.R. Delgado has sent us the following reply:

Ethical issues in brain research are of paramount importance, and most investigators are deeply concerned about them. In my own book ("Physical Control of the Mind: Toward a Psychocivilized Society," Harper & Row, 1969), a full chapter (No. 21) is devoted to "Ethical Considerations," and another two deal with related subjects: "Social Dependence and Individual Freedom" (No. 24) and "Natural Causality and Intelligent Planning in the Organization of Human Behavior" (No. 25). Literature on ethical awareness of scientists involved in brain research is abundant (see bibliography in "Experimentation with Human Belngs," by J. Katz, Russell Sage Foundation, New York 1972).

It is well known that as a result of recent developments in brain research, thousands of patients suffering from brain tumors and other disorders have been operated on and saved. Discoveries in the new field of neuropharmacology have made it possible to release hundreds of thousands of mental patients from psychiatric hospitals and return them to community life.

Science should not be blamed for the misuse of knowledge. The destructive application of atomic energy demonstrated the functional inadequacy of the human brain which has not yet learned to solve behavioral conflicts reasonably.

Instead of resorting to emotional phraseology to criticize brain research, revealing personal fears and prejudices, it would be preferable to present facts and offer intelligent solutions to the problems facing humanity which deeply preoccupy neurophysiological investiga-

> José M.R. Delgado, Madrld, Spain

EARTHQUAKES AND NUCLEAR UNDERGROUND EXPLOSIONS

Sir.

I wonder why your issue on earthquakes (May 1976) failed to mention that underground nuclear explosions can be a possible cause of earthquakes.

Michei Ziller Liverdun, France

Sir,

Reading in your issue on earthquakes that on several occasions dam construction has accidentally triggered off earthquakes, I wonder if it is also a fact that underground nuclear explosions may have been the cause of certain seismic events.

Dora Tim Minugio, Switzerland

Editor's note: E.M. Fournier d'Albe, who is in charge of Unesco's programme in

geophysics related to natural disasters and their prevention, replies:

In several cases underground nuclear explosions have been followed by small earthquakes in the vicinity of the explosion. Such earthquake activity is limited to an area within 100 or 200 km. of the explosion site and earthquakes which have followed such explosions are of magnitude (energy) less than the explosion itself. There is no evidence so far that underground nuclear explosions trigger distant or destructive earthquakes.

A ROCK-FORTRESS IN THE CAUCASUS

Sir,

Readers may be interested to know about a discovery made by an expedition of the North Ossetian Museum of Local Lore, History and Economy, in the U.S.S.R. Founded in 1893, our museum is the oldest institution of its kind in the Caucasus.

Recently, an expedition looking for ancient rock-carvings came across a hitherto unknown castle near the village of Zadalesk, 2,000 metres above sea level.

We had to use mountaineering equipment to climb the 60-metre rock to reach the castle. There was no path and its builders and defenders must have used rope ladders or chains. The former occupants had hewed out a patio for the castle, and 20 metres above it in a cavelike niche we found a medieval kitchen.

Over the main entrance we discovered a rock carving and the imprints of human hands. It is difficult to tell what the mysterious lines and forms of the carvings could mean. Perhaps they were the mark of the builders.

M. M. Bliyev, a professor at the North Ossetian State University who took part in the expedition, has commented: "The castle in the rock of Zadalesk is a unique medieval structure. It is different from any other military fortifications in the region. Its architecture, its masonry of local stone and its finish are superb for the Middle Ages."

G.I. Kusov Deputy Director for Science, North Ossetian Museum of Local Lore, History and Economy, Ordzhonikidze, U.S.S.R.

NEW ENGLAND'S FIRST FOUR STATES

Sir,

May I point out an error in the colour illustration caption on page 22 of your American Bicentennial issue (July 1976). New England at the time of the American Revolution had only four of the 13 English colonies (not six as stated). The four were New Hampshire, Massachusetts Bay (today Massachusetts) Rhode Island, and Connecticut. Vermont was separated from New Hampshire and became the 14th state in 1791. Maine was separated from Massachusetts and became the 23rd state in 1820.

Charles Colvin Lorgues, France

BOOKSHELF

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- The Unesco: IBE Education Thesaurus. A faceted list of terms for indexing and retrieving documents and data in the field of education with French equivalents. 1975, 278 pp. (32 F).
- Foundations of Language Development. A multidisciplinary approach. Edited by Erich H. Lenneberg and Elizabeth Lenneberg. Copublished with the Academic Press Inc., New York. (The co-publisher has exclusive sales rights: orders from Academic Press, Inc., 111 Fifth Avenue, New York, N.Y. 10003, U.S.A.). In 2 volumes, 1975, Vol. 1, 350 pp.; vol. 2, 403 pp.
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BRAZIL

■ Yayá Garcia, by Machado de Assis. Translated from the Portuguese by R.L. Scott-Buccleuch. Peter Owen Ltd., London, 1976. 220 pp.

UNESGO [

U.N. seeks more women for technical aid jobs

The United Nations wants to appoint more women to jobs in technical assistance programmes in developing countries. Until now relatively few women have applied for the jobs to which the U.N. appoints some 1,000 technical specialists each year for work in over 100 countries. Women—and men—seeking further information on jobs in this field should write to: The Technical Assistance Recruitment Service, United Nations, New York, N.Y. 10017, U.S.A.

The world of Unesco —on film

"The World of Unesco", a 30-minute, 16 mm. colour film, shows Unesco at work in various parts of the globe. Restoration of the Buddhist shrine of Borobudur in Indonesia, teaching children by television in an Ivory Coast village, oceanographic studies off the coast of Mexico, safeguarding the environment in Nepal—these are some Unesco activities shown in the film which was shot in nine countries. For further information contact Radio and Visual Information Division, Unesco, Place de Fontenoy, 75700 Paris.

International Fair Play awards

Emil Zatopek, the well-known Czechoslovak long distance runner, Bob Mathias,
American decathlon specialist, and Victor
Niederhoffer, American amateur squash
champion were this year's winners of the
Pierre de Courbertin Fair Play Trophies.
Niederhoffer's award was for an act of outstanding sportsmanship when his opponent in last year's North American Open
Squash Championship was injured, and
Zatopek and Mathias were selected for
the awards as a tribute to exceptional
careers consistently marked by their high
sporting spirit. The prizes were presented
by Mr. Amadou Mahtar M'Bow, Unesco's
Director-General, at Unesco headquarters
in Paris.

Israeli device for probing water pollution

A remote sensing method capable not only of locating pollutants in water, but also of determining their concentration and origin—industrial, agricultural or domestic—has been developed by Israel's Institute of Technology. Using photo equipment coupled with sophisticated optical and electronic devices, it is based on the principle that a measurable relationship exists between colour as recorded on film and the quality of the water being photographed.

Prehistoric Indus Valley town unearthed

A well-planned town laid out on a grid pattern and resembling Moenjodaro, one of the major sites of the ancient Indus Valley civilization, has been unearthed at Banawali, in the north Indian State of Haryana. Excavations at Banawali have revealed pottery, bangles, flint blades and beads typical of the Indus Valley culture that flourished some 5,000 years ago. Unesco is conducting an international campaign to conserve Moenjodaro (in Pakistan) and a commemorative medal is available in gold, silver or bronze, from the Philatelic Service, Unesco, Place de Fontenoy, 75700 Paris. Proceeds from the sale of the medal go to the Moenjodaro fund.

In praise of traditional building

"Habitat", a new Unesco series of 48 colour slides, Illustrates the beauty and practicality of traditional buildings around the world, which are rich in diversity and are the work not of architects but of the people living in them. The "Habitat" series is available at 40 Fr francs a set from the Photographical Service of Unesco, Place de Fontenoy, 75700 Paris.

'Operation Tiger'

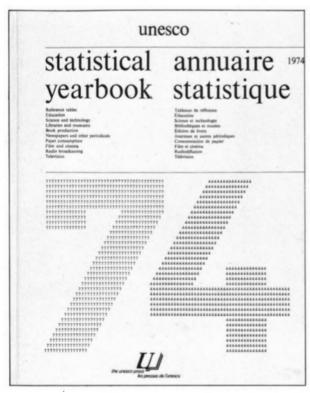
The Soviet Union is to undertake a count of all its tigers, starting in the Far East of the country, home of one of the largest species, the Ussuri tiger. Tigers are also found in southern Turkmenia, along the River Amu-Darya and in Transcaucasia. The census is part of "Operation Tiger", a country-by-country survey to discover the tiger's chances of survival, sponsored by the International Union for the Conservation of Nature and Natural Resources.

U.N. conference on encroaching deserts

The United Nations Conference on Desertification, scheduled for autumn 1977, will probably be held in Nairobi (Kenya). In 1974 the U.N. General Assembly called for international co-operation in trying to stop desertification of arable and pasture land. One ninth of the earth's surface is affected by this "march of the deserts". Unesco, in collaboration with the Food and Agriculture Organization (FAO) and the World Meteorological Organization (WMO) is preparing global maps showing areas vulnerable to desertification.

Flashes...

- Surinam became Unesco's 137th Member State on 16 July 1976.
- Australia is to return to Papua-New Guinea some important art works from that country now held in Australian collections, it was reported at a recent Unesco seminar on Asian museums, in Tokyo and Kyoto (Japan).
- Unesco is now printing publications on recycled paper as part of a raw materials conservation campaign. The books and documents carry a distinctive symbol.
- This year's World Medical Assembly, meeting in Sao Paulo (Brazil) from 24 to 30 October, is making a special study of environmental pollution.
- The British Broadcasting Corporation has begun a series of Sunday television programmes aimed at helping two million British people—6% of the adult population—who are illiterate.



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