

# THE STATE OF RESEARCH IN ROCK ART

## A WORLD REPORT PRESENTED TO UNESCO

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## I. INTRODUCTION

The painted caves of Lascaux in France and Altamira in Spain are well known to the public because of their geographic location and their inclusion in art history textbooks. What is less known is that these sites represent only a small fraction of the world's heritage of rock art. Recent discoveries show that in many parts of the world early man chose to depict and engrave on rock surfaces. Although exploration has by no means been exhaustive, rock art is reported from thousands of sites. Scientific evidence such as Carbon-14 dating, paleo-climatic data and archaeological analysis indicates that the oldest rock art known today was executed ca. 40,000 years ago.

This art reveals the human capacities of abstraction, synthesis and idealization; it describes economic and social activities, ideas, beliefs and practices, and provides unique insight into the intellectual life and cultural patterns of man. Rock art contains the most ancient testimony of human imaginative and artistic creativity, long before the invention of writing, and constitutes one of the most significant aspects of the common heritage of humanity.

This endowment is rapidly deteriorating due to such processes as deforestation, pollution, urban growth and the spread of roads and development areas; vandalism and other human actions are by far the major cause of degradation. Most of this heritage has not yet been recorded or studied, and humanity risks losing it forever. It has become urgent to operate on an international scale for the recording, inventory and salvage of whatever may still be preserved for future generations.

## II. DIMENSIONS OF THE LEGACY

### A. Preliminary Survey

A preliminary survey of rock art, based on existing documentation in the archives of the CCSP (Centro Camuno di Studi Preistorici, Italy) and on the reports received so far, has enabled us to locate some 780 areas of rock art in the world, including thousands of sites.

It became necessary to define what constitutes an "area" and a "site". Definitions were provided by different researchers, but a formal and final definition is still to come. On the whole, there seems to be general agreement on two points:

1. A rock art *site* is any place where there is rock art. Its boundaries are traced 500 m. beyond the last decorated rock in every direction. Two clusters of figures which are separated by a figureless distance of over 500 m. are considered two different sites. Over 20,000 sites are documented around the world.
2. A rock art *area* may include several sites. It is defined primarily by its cultural and typological characteristics. Rock art areas coincide with geographical features such as valleys, plateaus, mountain ranges, etc. In order to be distinct from one another and form different *areas*, two assemblages of rock art should be at a distance of at least 20 km. from each other, which is the distance that requires about one day's walking. As mentioned already, some 780 *areas* have been located, but this figure depends primarily on the information that has been made available to date.

### B. Major Areas

A selection of areas was attempted in order to identify *major areas*. A *major area* is one which provides an outstanding contribution to the knowledge of the intellectual identity of early man. Most of the major areas have

over 10,000 figures in a zone of less than 1,000 sq. km., but this is not a prerequisite.

Surprisingly such areas are quite evenly distributed: in no continent are there less than 10 major areas, or more than 40. Over 140 major areas have been identified so far, and are distributed as follows:

Africa:	24 Countries	31 Areas
Asia:	12 "	32 "
The Americas:	13 "	39 "
Europe:	14 "	31 "
Oceania:	6 "	15 "

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World:            69 Countries    148 Areas

Rock art appears indeed to be a world-wide phenomenon.

### *C. Size of the Artistic Production*

Some of these major areas of rock art have an enormous quantity of figures. The Drakensberg range in Lesotho and South Africa includes over 1,000 sites with an estimate of over 1,000,000 figures. Arnhem Land, in Australia, has over 1,000,000 figures. The Tassili' n'Ajjer, in Algeria, has over 400 sites, with at least 400,000 figures. The Negev and Sinai, in Israel and Egypt, include 17 areas, with over 300 sites and at least 350,000 figures. The Alpine range in France, Italy, Switzerland and Austria, numbers 16 areas. Just one of them, Valcamonica (Italy), includes 26 sites with over 180,000 figures recorded and with an estimated total of over 300,000 figures. Various areas in Arabia, India, the Soviet Union, Brazil and Argentina may contain as many figures, though precise surveys are not yet available.

The world production of rock art documented so far numbers over 20,000,000 figures, but we may safely estimate that the total number of rock art figures still preserved should be well over 50,000,000. This constitutes an extraordinary documentation of man's intellectual adventures, and an outstanding world heritage and source for historical reconstruction.

## **III. HISTORY OF RESEARCH**

### *A. The Beginning of Research*

Since 1627, when the first tracings of prehistoric rock art were made in Bohuslaan (Sweden) by a Norwegian school teacher, Peder Alfsson, the study of rock art has gradually developed to interest both scholars and laymen.

In the last century the number of publications concerning the subject has steadily increased. Even so, the study of rock art is still a relatively young and undeveloped field of archaeological research. Today the subject is awakening an ever-growing interest among researchers, although well-tested recording systems and fully assimilated patterns of aims and purposes are still lacking in many regions of the world.

Sporadic reports on rock art appeared throughout the 18th and 19th centuries; however, major studies were not undertaken until the end of the last century. In America an invaluable book by G. Mallery, *Picture-writing of the American Indians*, was published by the Smithsonian Institution in 1893. From the beginning of this century there have been significant reports and data collection on rock art in South Africa, the Sahara and Australia. In Sweden, rock art studies were pioneered by O. Almgren and in the Alps by the English clergyman Clarence Bicknell.

After the discovery of Altamira, about one hundred years ago, a wealth of Palaeolithic cave art in France and Spain was brought back to light. Beginning in the early 1900s, recording and description of rock art sites were conducted primarily by the Abbé Henri Breuil and by Hugo Obermaier. These two scholars, followed by Teilhard de Chardin, created a challenging school of thought that contributed to a new cultural approach in rock art studies. "Research" at that time consisted of a combination of descriptions and theories. Scholars attempted to establish dating for prehistoric paintings and to explain their meaning, relating them to tales and habits of present-day tribes. There were many more or less factual accounts, yet little analysis and no synthesis in these preliminary studies; however, they provided an astounding intellectual base that raised curiosity and stimulated further research.

### *B. The Development of Research Methods*

Methods of recording and analysis have been, and still are, continually being refined. There is no doubt that they will further evolve through the progress of science. The growth of research itself generates ever deeper aspects of study, with a consequent need for new systems of documentation and of analysis.

Methods must be adapted for each project to ensure that the basic data required for analysis can be obtained: that is, analysis must be planned according to the specific questions which the project addresses. Recording paintings requires different techniques from recording engravings; where both occupy the same surface, still other considerations must be made. In addition, the dimensions of figures and decorated surfaces, their state of preservation, the type of rock, the presence or lack of various techniques of execution and stratigraphic superimpositions, irregularities in the rock surfaces, and differences in patination (that is, the colour of the naturally oxidized rock surface that changes hue with age) demand, in each case, specific approaches of study and research. Today the methods of recording developed in Italy by the CCSP have been adapted for use at several major rock art sites in Europe, the Near East and Africa, yet there is still no recording method which is universally applicable.

Recording also requires a concern with superimpositions and stratigraphy, quantitative analyses of subject matter, evaluation of stylistic patterns, the study of the raw materials and the tools used by the artists, and numerous other items that enable an in-depth understanding.

Differences obviously exist in the methods used by researchers due to variations in approach and training. Nevertheless it is imperative to develop and establish a conventional, universal system which will enable researchers to understand each other, to compare results and to identify common elements and particularities in each area.

Once an area is accurately recorded, the main question that arises is what should be done with the collected data: in other words, what are the aims and purposes of rock art study? As with the methods of recording, the goals of research are also developing. In the last few years wider scopes and new implications have emerged within this field.

Matters changed when it was understood that rock art, like writing, is a very important source for historical reconstruction. Because of this consideration research in rock art has grown both in dimension and in outlook. In the last generation it has ceased to be just a descriptive subject and has become a research discipline.

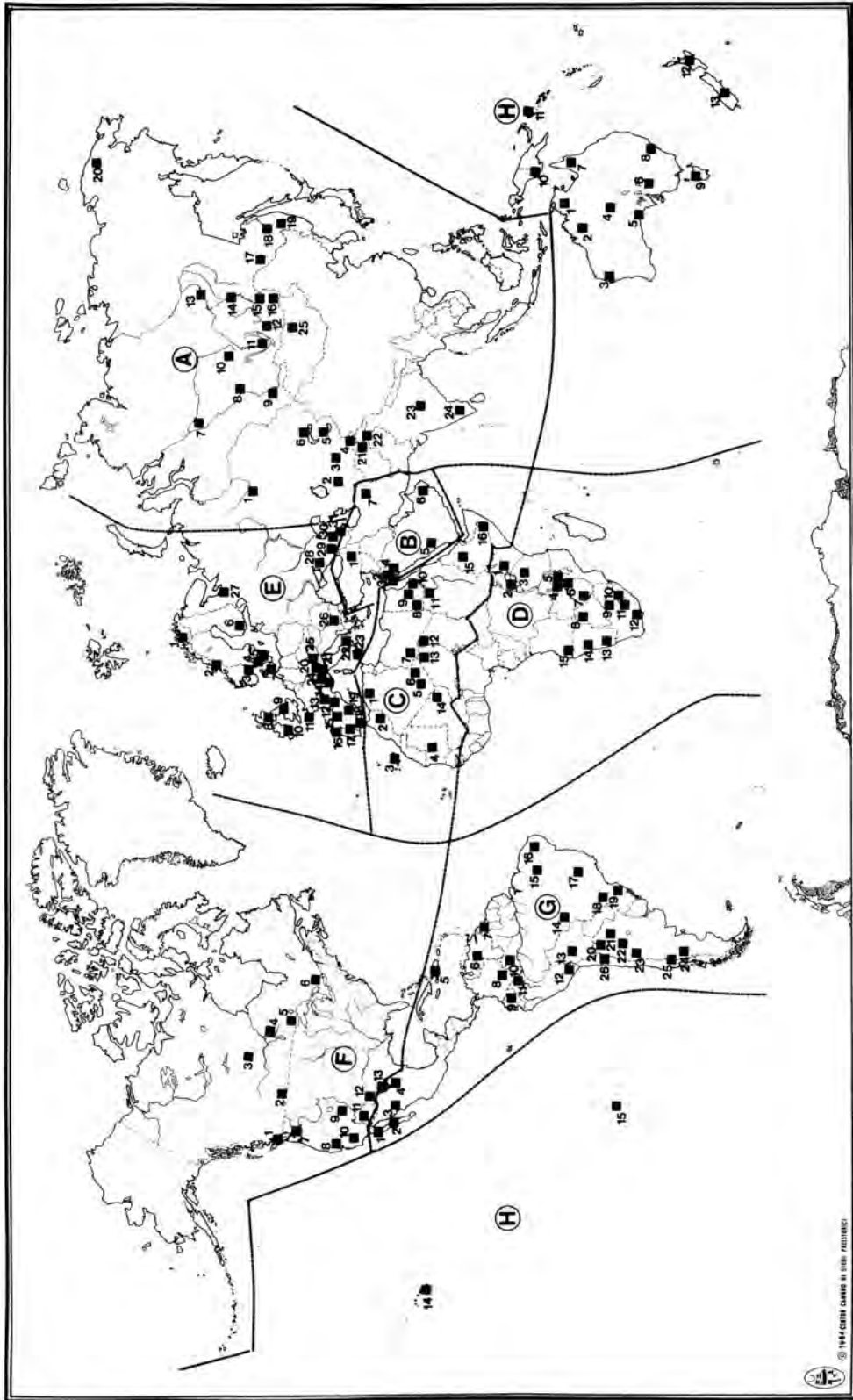


Fig. 4  
World Distribution: Major Areas of Rock Art.

Twenty years ago there were very few specialists in rock art, concentrated in a few countries. Today there are over 200 specialists in nearly 100 countries throughout the world; thousands of laymen make "pilgrimages" to rock art sites. In Valcamonica alone over 300,000 people visited the rock art in 1983, whereas in 1964 visitors numbered less than 10,000. In 20 years the number of visitors has multiplied 30 times! Rock art is being discovered by the public at large, and yet scholars have still to define the broader aims and purposes of their research.

### *C. International Cooperation*

The CCSP, a non-profit and non-governmental institution, was established in 1964. Its purpose is to study prehistoric and tribal art and related subjects that concern the economic, social and intellectual life of prehistoric and tribal man. In 20 years it has hosted participants from over 60 countries and has undertaken research throughout the world. In 1968 it organized an International Symposium on Rock Art under the auspices of the UISPP (International Union of Prehistoric Protohistoric Sciences). This event gathered over 100 rock art specialists from 26 countries, and began a new stage in world cooperation for rock art studies. Since then three major international symposia and numerous conferences and seminars have been held at the CCSP.

In November 1979, ICOMOS (International Council on Monuments and Sites) created the "International Committee on Rock Art" which now has over 150 members. The committee disseminates relevant information through its members, thus contributing to expanding communication in the field; it also contributes to the world data bank.

A Training Seminar and International Consultation of Specialists on Rock Art was held by UNESCO at the CCSP in September 1981, with the participation of ICOMOS, ICOM (International Council of Museums), ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), and representatives from 24 countries of five continents.

The purposes of the Seminar were:

- to provide professional training in research, documentation and conservation of rock art;
- to promote cooperation and to develop standard procedures in the above-mentioned items;
- to lay the foundations for a world strategy to safeguard, evaluate and promote knowledge and information in the field of rock art.

During the Seminar, the UNESCO Consultation of Specialists agreed upon a series of recommendations which provided basic orientations for international action and cooperation.

The aims emerging from the Recommendations are:

- to realize a world inventory and data bank of rock art;
- to prepare and circulate an International Gazette of Specialists in rock art studies (*Who's Who in Rock Art*);
- to develop a World Journal of Rock Art Studies for the advancement of research, promotion of the cultural heritage, and the updating of conservation techniques; and to publish an annual report as a forum for these issues;
- to examine and provide advice on problems of legislation concerning the protection of rock art sites, and to make comparative information available to the concerned specialists and governments;

- to provide specialists where required, especially for urgent salvage projects;
- to hold international seminars and symposia for the interchange of ideas and comparison of information, and for professional training in the field.

#### **D. Current Action**

Efforts are presently being concentrated in three fields:

1. DOCUMENTATION: producing a World Inventory and Data Bank on rock art. In a joint effort of ICOMOS and the CCSP, a draft Standard Rock Art "Site File" (as agreed upon by the participants of the 1981 International Seminar) has been circulated for further comments and approval in order to be adopted on a world basis. Sample files have been used at sites in Italy, Israel, India, Mexico and Tanzania, where they proved efficient and quite easy to use. The file takes into consideration various existing forms currently in use in the USA, Canada, Lesotho, Sweden, Italy, France and Spain, and attempts to unify the system and adapt it for world use. This standard "Site File" form provides a minimal amount of essential data. This information is in the initial stage of being collated, computerized and made available for the study of individual sites. The CCSP's archives already contain the largest documentation of rock art in the world and include: data from some 100 countries, over 500,000 photographs and slides, and numerous tracings and reproductions.

Together with the cartography and field reports of research expeditions these make up the initial core of the World Inventory and Data Bank.

2. PUBLICATIONS: several projects are currently in progress:

- publishing the Proceedings of the International Seminar and Consultation held in September 1981, which has recently been edited;
- adapting the *BCSP* (*Bollettino del Centro Camuno di Studi Preistorici*) to fulfill the recommendation of becoming a *World Journal of Rock Art Studies*. Volume 21 already incorporates these new aims;
- producing a *Who's Who in Rock Art*. A form has been mailed to scholars and specialists for this purpose. The first edition is nearly ready for the printer;
- setting up a "World Inventory" to be published and distributed. The first stage would include short entries concerning the *major areas*.

Broad international cooperation, including the support of sponsors, is necessary for this publication programme.

3. EDUCATION: current programmes include developing an educational structure to provide training programmes for professionals, and for international symposia and seminars on rock art, and disseminating information to specialists and to the public at large. The actions taken so far are modest because of financial limitations. Symposia/seminars should be planned every two years, following the 1981 seminar.

#### **E. Research Projects in Progress**

Research projects concerning rock art are being carried out all over the world. In the last few years a significant increase in field surveys and rock art studies has been noted. In 1982-83, several reports were received by the CCSP which provide a great deal of new information. The response has not been consistent, however, and it is doubtful whether the reports received so far accurately reflect the actual world-wide distribution of rock art presently under investigation. Information collected from publications and from sources other than research projects serves to round out the yet incomplete



*Fig. 5*  
*Tracing Epi-Paleolithic rock engravings in*  
*Valcamonica.*

view of the current world situation. A general appraisal of the state of research in the world and in each continent is presented in subsequent chapters.

New waves of activity in rock art research appear to be particularly strong in Africa and South America, while a consistent increase may also be noted in Asia, Australia, Europe and North America.

Reports continue to arrive, and it is certain that additional ones will become available in the near future. Furthermore, there must still be researchers who have not been contacted yet, while several of those who were, may not yet have answered. But already from the reports received, we can recognize the extensive efforts currently being made throughout the world in the field of rock art.

#### **IV. AN EVALUATION OF ROCK ART**

##### ***A. Historical Reconstruction***

The appearance of *Homo Sapiens* on Earth marks the emergence of a new species: one able to communicate through a complex assemblage of vocalizations that we call language. This species spread across the earth, and we are its issue. Early vocalizations, gestures and other communicative expressions, either oral or visual, were not preserved. But their graphic messages did reach us. While some art objects have been unearthed in early archaeological sites, the bulk of prehistoric creative expressions is preserved in the form of rock art. Its study and evaluation provides unique insight into man's intellectual life during the last 40,000 years, and reveals his imagination and conceptual adventures. The consistency of subjects and figures exhibited in rock art throughout the world testifies to the common origin of the human intellect.





*Fig. 6*  
*Tracing Bronze Age rock engravings in*  
*Bobuslaan, Sweden.*



*Figgs. 7-8*

*Rock art survey in the Sinai peninsula,*

*Fig. 9*

*Tracing rock engravings at Stonehenge, G.B.*



In every territory which has been inhabited by human beings, rich concentrations of rock art provide new perspectives into the history of mankind, from Palaeolithic hunter-gatherers to contemporary collectors, fishermen and pastoral societies. As a result of the information gleaned from these creative registers, we have gained a greater historical awareness of the remote past in many countries of Asia, Africa, the Americas, Europe and Oceania.

Because it falls well before the advent of writing, rock art constitutes a major testimony of early man's expression of himself and of his world view. While even the most ancient script is just over 5,000 years old, rock art provides a record of the way man lived many thousands of years earlier. Yet despite its value as a source of cultural, social and historical information, in most regions of the world this expression of human creativity has been sorely neglected. For one reason or another much of the knowledge of regional scholars does not become available to the rest of the world. In order to establish a more cooperative and receptive forum for thought, it is vital that researchers share their conclusions on the state of rock art with the international community.

Technical aspects of culture progress in a more or less coherent evolution. New inventions and innovations constitute the basis of each step in the evolutionary sequence, and result from experiences which motivate subsequent progress. It is questionable, however, whether such logical evolution occurs in the artistic aspect of culture as well. Current cultural standards influence the evaluation and appreciation of art and creativity. Aesthetics change from person to person and from culture to culture according to fluctuations in style and taste. This concern should be kept in mind when rock art styles are described as realistic, descriptive, abstract or symbolic, for such terms reflect our own degree of comprehension and our own cultural criteria which are the result of complex, dialectical and individual capacities.

The artist did not represent everything he saw or knew, but instead made specific choices. Although the subject matter varies consistently from one

age to another, it is always rather circumscribed within each age; thus the frequency and assemblage of subjects allow us to construct a rudimentary hierarchy of the artist's values. The gamut of subject matter is always well-defined and consistent within specific cultural and tribal patterns. There have always been defined impulses to paint, draw or engrave in a certain way, and both subject matter and style are reflections of deep motivations.

Rock art may help in defining such patterns of culture. When assemblages can be identified chronologically, each one represents a different stage in the cultural sequence; hence, through subject matter associations, rock art can divulge many aspects of human life. The depiction of the species of animal hunted and of the food gathered tells us much about the ecosystem in which man lived. The depiction of weapons, tools and other objects reveal his technical abilities. The illustration of his myths and beliefs bring back to our consciousness essential aspects of our intellectual roots, and displays the existential relationship between Man, Nature and the "Supernatural".

Comparative studies help to identify similar kinds of societies around the world. Certain kinds of hunting societies, for example, tend to depict animals in a particular style and to use a consistent assemblage of symbols the world over. Pastoral societies from different regions have stylistic characteristics in common and focus their representations on the animals they breed. The art of fishermen or of pastoral populations which may be quite distant from one another may show similar traits of style. No doubt, daily concerns and specific patterns of activities have had parallel impacts on peoples with similar activities and backgrounds, resulting in similar trends of figurative output. It seems, therefore, that patterns of style and subject matter indicate specific horizons of mentality and hence enable us to detect stages of culture. Thus it already seems possible to define the meaning of style in a very general way; of course the details of each figure may still reveal much more about the individual artist's state of mind, preoccupations and motivations within his cultural horizon. Rock art studies may have a tremendous impact in the near future in reconstructing the history of mankind and of specific ethnic and cultural entities. Such studies today are at an incipient stage and a fast development is expected in the next few years.

### ***B. World Distribution***

While today it seems that we live in a world where the arts have an ever-decreasing role in day-to-day living, early man apparently viewed art as an integral and essential part of his daily life. In every part of the world separate human groups painted and engraved rock art. Indeed, rock appears to have been the first canvas used by man, in every part of the world.

As mentioned already, major concentrations of rock art are found more or less evenly distributed on earth's inhabited land. We shall start our survey in southern Africa which, according to present reports, has the greatest concentration of rock art in the world. There are major concentrations in Angola, Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. In northern Africa there are also major concentrations, located in Algeria, Chad, Egypt, Ethiopia, Libya, Mali, Mauritania, Morocco, Niger, Somalia and the Sudan.

In Asia, major concentrations in the Near East are known in Iran, Israel, Jordan, Oman, Saudi Arabia, Sinai (Egypt) and Anatolia (Turkey). In central Asia and the Far East significant concentrations are found in Af-

ghanistan, India, Mongolia, Pakistan and in several republics of the USSR.

Major rock art sites in North America are located both in Canada and the USA. In Latin America they are known in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru, the Dominican Republic and Venezuela.

In Europe, major concentrations are found in Austria, Bulgaria, Denmark, Finland, France, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the URSS.

In Oceania, by far the major concentrations known are in Australia, including Tasmania; others are found in Easter Island (Chile), Hawaii (USA), New Guinea, New Zealand and the Solomon Islands.

Recent research indicates that the beginning of rock art on every continent goes back much farther in time than was believed a few years ago. In Africa the oldest art dated so far is from the Apollo 11 Cave in Namibia, where painted animal figures on stone slabs were found at an archaeological level defined by W.E. Wendt as "Middle Stone Age", dated by three C-14 tests to 28,400 - 26,700 and 26,300 B.P. In Tanzania, the earliest rock art is from the Kondoa and Singida districts, and may be even older; however, no C-14 dates are available so far. A sequence of different styles of Early Hunters' rock paintings (recorded during a UNESCO consultation in 1981) is likely to have started earlier than any other rock art dated so far and, as stated in a subsequent chapter, may well be over 40,000 years old. In northern Africa, the earliest dates available so far for the beginning of rock art are much later than in southern Africa; they refer to Early Hunters' art from the Acacus range in Libya, going back to the late Pleistocene, and date according to F. Mori to ca. 12,000 B.P. Similar stylistic assemblages are known from the Tassili'n'Ajjer in Algeria and from the Ennedi in Chad.

In the Near East the earliest clues for dating are from central Arabia (Dahthami Wells), and are likely to belong to the Pleistocene epoch, between 14,000 and 10,000 B.C. In central Asia and the Far East the data so far are more limited than elsewhere. Mobiliary art from Malta in the Baikal region of central Siberia has been dated to ca. 18,000 B.C. By comparison, A.P. Okladnikov has proposed a Pleistocene date for ancient rock art sites of similar styles in various parts of central Siberia.

In India, in Madhya Pradesh at Bhimbetka, V.S. Wakankar detected a series of rock paintings from the Stone Age which he located in the Pleistocene, while decorated ostrich eggshells from the same area have been dated by C-14 to 25,000 B.P. This figure may constitute an approximate date for the origin of rock art in India, and possibly in some parts of Soviet Siberia; thus far this site contains the earliest dated art yet discovered in Asia.

In Europe the earliest evidence of cave art goes back to the Aurignacian period, sometime between 33,000 and 25,000 B.P. Some graphic markings have been attributed to the Mousterian period and are considered a "pre-figurative" stage in graphism. This hypothesis is controversial, but should it prove to be correct, the earliest graphic markings in Europe would turn out to be older than 40,000 B.P. So far, no figurative images have been demonstrated to exist at that stage.

In the Americas the earliest art dated so far comes from the southern continent where in Piaui State, Brazil, anthropic layers, connected with rock art and including fragments of painted rock surface, have been dated by C-14 to ca. 17,000 B.P. In the far south of Argentina at Rio Pinturas, in the province of Santa Cruz, C-14 datings have again enabled researchers to locate early

representational assemblages as far back as 12,000 B.P. Nothing as early has been dated so far in northern and central America, although stylistically the Early Hunters' rock art assemblages in Baja California, Mexico, and in the states of California and Washington, USA, may well turn out to be of a comparable early date.

In Australia and Oceania the earliest evidence of art so far is provided by graphic markings at Koonalda Cave near the south-western edge of South Australia, west of Adelaide, dated by C-14 to ca. 20,000 B.P.

This brief summary of the earliest dates of rock art available so far seems to indicate that the earliest rock art we know of may have come into existence more or less in the same time periods, that is, between 40,000 and 30,000 B.P., both in western Europe and in southern Africa. In two more continents, Asia and Oceania, rock art was already present before 20,000 B.P. There is evidence of rock art in Latin America dated around 17,000 B.P., although future research may prove that it appeared on the American continent even earlier.

On the whole, rock art appears to be a characteristic of Homo Sapiens, forming a significant element of man's culture.

### *C. Ecological Setting of Rock Art*

A large percentage of the 148 major areas of rock art detected so far is located in currently desert or semi-desert areas. We may define these areas as peripheral and/or isolated zones in the present ecological situation. This general pattern recurs, from the Dahthami Wells in central Arabia to Tromso in arctic Norway; from the Acacus in the Libyan Sahara to Panaramitee Hill in South Australia; from the Kalahari Desert in southern Africa to San Ignazio in Baja California, Mexico; from Valcamonica in the Italian Alps to the Middle Yenisei River in Siberia; and from Rio Chubut in Argentinian Patagonia to Har Karkom in the Israeli Negev desert. On the other hand, the data available so far indicate that the less dense areas of rock art are confined to the regions covered today by large tropical forests. We find very little evidence of rock art in Brazilian Amazonia, in the Congo and in other west-central African countries, and in south-eastern Asia.

The major concentrations of Palaeolithic cave art of Europe are located in the dead end area which faces the Atlantic Ocean. In the Franco-Cantabrian region in fact man is likely to have moved about much less than in eastern Europe, the Balkans or the Mediterranean areas, where later civilizations flourished. In Australia this phenomenon repeats itself; although man must have arrived to the continent from the north, populating that area before expanding southward, the earliest instances of rock art occur in the south, in a dead end facing the Southern Ocean, at Koonalda Cave.

In Africa, once again, the major concentrations of the earliest art horizons come from Tanzania and Namibia, which are both rather marginal areas in late Pleistocene human movements. The same may be said of places such as Rio Pinturas in southern Patagonia, or of the peninsula of Baja California in Mexico. Such recurrent ecological and topographic environments for early rock art still demand an explanation. There is no doubt, however, that man arrived to these areas with the intellectual capacities for producing art, and found in them settings which were particularly favorable to artistic creation.



*Fig. 10*  
*Engraved monolith near Novosibirsk, Siberia, U.S.S.R. Several phases are overlapped and represent different periods.*

## V. REGIONAL DISTRIBUTION

### A. Differences in Evaluation

From one area to another scholars reveal different concerns and varying degrees of knowledge about sites. It is not only the lack of adequate training which limits data-collecting and prevents sharing information with others. There are also differences in professionalism, and in the willingness to communicate knowledge to others. Frequently, the less people know, the more they want to keep their "secrets"; this pattern may also reflect local habits. While in some regions there is an eagerness to communicate knowledge and to obtain information from other areas, other regions of the world are still reticent in sharing their cultural patrimony and in learning about what is found elsewhere. Furthermore, some researchers tend to focus their interest on local details, disregarding basic concerns which are necessary for comparative studies.

An additional problem arises when attempting to compile a world view of rock art. there are different methods of evaluation in different areas which condition the information received. Data considered significant by one researcher may not be considered so by another. To one, the most important aspect of a site might be its monumentality; to another, its age; to another still, the quantity of findings or their degree of visibility, the holiness of the place, or its impact on local cultural and historical awareness. In order to complete a world view of rock art distribution, it would be useful to rely to a larger extent on first-hand information and on-the-spot visits. Several of the areas mentioned have not been visited as yet by the author. The present report is therefore by no means conclusive. It shall provide short outlines of chronological successions of the rock art in a few main areas of the world which constitute essential examples for understanding regional sequences.

*Fig. 11*  
*A large engraved rock at Peterborough,*  
*Ontario, Canada.*





For the future it would be advisable to focus interest on different geographical areas each year, so that at least some areas can be sufficiently covered. This would both stimulate local researchers to cooperate more and help bring basic information to a world forum, as well as allow the acquisition of deeper understanding of regional problems.

### *B. Africa*

The African continent may be divided into two major regions, as far as rock art is concerned, which roughly represent the north and the south. In the south, major concentrations follow the general geographical area of the Rift Valley from Kenya and Tanzania, down to Johannesburg in South Africa. In addition, there is a still broader distribution in southern Africa, where major sites have been found in Zambia, Zimbabwe, Mozambique, Namibia, Botswana, South Africa and Lesotho. Malawi, the Katanga province of Congo and southern Angola have yielded preliminary reports of sites which may result to be of considerable importance.

In northern Africa most major concentrations are located in the central Sahara region. Some are well known and publicized, such as the Tassili'n' Ajjer in Algeria, and the Fezzan and the Acacus in Libya. Others, no less significant, in the Tibesti and Ennedi in Chad, in Niger's Tenere and in the Adrar range of Mali, are yet to be adequately explored. Other major sites are found in the Moroccan and Algerian Atlas range, along the Nile valley, both in Egypt and in the Sudan, and in the Canary Islands.

A distinction must be made, as far as southern Africa is concerned, among four assemblages which appear to reflect four major historical eras. From the oldest to the latest they illustrate human practices: 1. early hunters of big game, who did not know the use of the bow; 2. evolved hunting, with the use of bow-and-arrow; 3. pastoralism; 4. mixed economies.

Rock art reflecting a *mixed economy* appears to be primarily connected with Bantu-speaking peoples. It is widespread in south-eastern Africa, including vast areas of Kenya, Tanzania, Mozambique, Uganda, Malawi, Zambia and Zimbabwe. Most of these sites appear to be connected with initiation practices and ancestral worship. They comprise schematic designs principally in white, and cover most of the past 2,000 years.

*Pastoral* rock art is mainly concentrated in Kenya and Tanzania, with isolated occurrences in other countries. Domestic oxen, some humped, are the main subject matter, while the typiced colours used are black, white and brown. Most of this art is chronologically parallel to the early phases of the *mixed economies* stage, although the earliest phases of *pastoral* rock art are older; some may go back as far as the second millennium B.C. Another series of local styles, still to be defined, is present in the area during the last two millennia B.C.; it seems to illustrate a variety of living patterns.

*Late Hunters'* art includes scenes of mythology, hunting, and other daily activities. Numerous anecdotal depictions are present. Stylized and dynamic human figures with bows-and-arrows constitute the most widespread pattern in the area, and are particularly well-represented in Zimbabwe, South Africa and Lesotho. The Matopos Hills in Zimbabwe and the Drakensberg in Lesotho and Natal each number well over 200,000 figures of this style. The total number of figures is estimated at over 2,000,000. Artistic production reached a high peak of creativity with polychrome depictions of exceptionally well-conceived, elegant and harmonious assemblages. The origins of this type of rock art may go back more than 10,000 years, as implied by recent

findings of painted tablets from excavated funerary caves in the Cape Province (South Africa). In some areas this style was still practiced by San tribes as recently as the last century.

The earliest stage, that of the *Early Hunters*, is frequently overlapped by later figures. Unfortunately, because it is sometimes faded and hardly visible, it has been consistently neglected. The only area where the art of early hunter-gatherers is known to be well represented and can be studied thoroughly, appears to be the Central Highlands of Tanzania in the districts of Kondoa and Singida. Here a UNESCO consultation in 1981 allowed us to identify a consistent series of overlapping styles which may well contain the earliest rock art examples known so far in the world. The *Early Hunters* style consists primarily of large animal figures, and includes a limited typology of recurrent symbols. At least eight stylistic phases have been detected; one of the later ones shows depictions similar to those represented in the slabs of Apollo 11 Cave in Namibia which, as mentioned already, have been dated by C-14 to 28,000 - 26,000 B.P. At some rock art sites, strata with material culture have been excavated with sequences covering all of the Late Stone Age and part of the Middle Stone Age, for a time range of over 40,000 years.

Somalia and Ethiopia have revealed a mostly *pastoral* art so far, with the exception of one site in Ethiopia (Porck Epic) which may include some figures from the Late Hunters horizon. This area is clearly connected stylistically and conceptually with the Sudan, as well as with southern Arabia. It appears to be a region of transition with little stylistic autonomy, as far as known sites are concerned. This region, however, is largely unexplored, and future research may modify this view.

In northern Africa, as mentioned already, the most important rock art sites are located in the mountain ranges of the central Sahara, in territories belonging to Chad, Libya, Niger and Algeria. Here the earliest rock art appears to belong to a final phase of the *Early Hunters*, and to have been made in the late Pleistocene, before or around 12,000 B.P. It consists of engravings of large animals. Elephants, giraffes, and wild oxen are profusely represented in what is now a desert area. It is followed by a widely diffused and extremely peculiar horizon which some researchers define as "*Round-Heads*" because of this specific feature in the anthropomorphic depictions. Most of the figures are painted in monochrome or bichrome, but in a large variety of colours. They illustrate a wealth of mythologies created by people who relied principally on a gathering economy, living in a sort of "paradise on earth", when the central Sahara mountain plateaus must have been very fertile gardens, with lakes and forests, and with a flora similar to that which characterizes the tropical forest.

The human groups of this cultural horizon appear to have lasted until approximately 8,000 B.P., after five or six thousands years of survival, after which the earliest pastoral peoples reached the area with domesticated oxen. For nearly 4,000 years the central Sahara was a land of semi-nomadic pastoral peoples who originated elsewhere. They produced a very sophisticated rock art, both painted and engraved, primarily characterized by depictions of large herds of cows and by detailed descriptions of family and social life.

The second millenium B.C. saw another change with the introduction of the horse; the rock art of the Horse Period reflects intensive trading and warfare. Shortly thereafter the camel arrived with nomadic peoples, whose descendants may still survive in the area. The rock art reveals the drastic changes that took place in the ecological conditions and in human life in the

Sahara, where populations succeeded each other over the ages with different traditions and using different resources.

### C. Asia

For the purpose of the rock art world inventory, Asia has been divided into two regions of unequal size. One, from the Bosphorus to the Hindu Kush range, roughly corresponds to the Near East. The other, much larger in size, includes the rest of Asia: central Asia, Siberia and the Far East.

In the Near East, rock art is widespread in the Arabian peninsula, Sinai (Egypt), the Negev desert (Israel), Jordan and Anatolia (Turkey). Isolated yet significant concentrations have been reported also from Syria, Iraq, Iran and Afghanistan. The most complete sequence found so far in central Arabia. A study of the documentation collected by the Ryckmans-Lippens-Philby expedition has enabled us to recognize over thirty-five consecutive stylistic horizons of rock engravings which fall into four major chronological groups: 1. *Early Hunters*; 2. *Hunting-Pastoral*; 3. *Literate*; and 4. *Islamic*. The *Islamic style*, starting after the Hegira in the 7th-8th century A.D., is mostly schematic with numerous tribal signs (wassum) and Arabic scripts. The *Literate period* illustrates a way of life based on trade and pastoralism. Figures are accompanied by a variety of Semitic writings. Thamudic, Lihyanite and Sabaeen inscriptions were produced by these tribes through most of the first millenium B.C. Hunting, pastoral and ritualistic scenes include figures of domestic camels and goats. In the second half of the first millenium B.C. this style developed further, showing Nabataean and Hellenistic influences; in the first half of the first millenium A.D. clear stylized contributions are evident from the Roman and Byzantine worlds. The presence of the domestic horse is well documented in this period.

The *Hunting-Pastoral period* lasted for at least 4 millennia until the second millenium B.C.; the camel was introduced as a domestic animal toward its end. The *Hunting-Pastoral* is by far the most complex and diversified age of Arabian history, as reflected in the rock art which ranges from the 6th to the 2nd millennium B.C. and contains a very rich sequence of cultural episodes. The rock art created in this period by a broad variety of ethnic groups testifies to their diverse racial make-up and differentiated cultural background of the inhabitants, and occasionally reveals connections with Mesopotamia, Syria, Palestine, Egypt and Ethiopia. Domestic cattle are the main subject represented; goats and sheep are less common, and only towards the end of this period are camels depicted. A variety of assemblages describe hunting scenes, pastoralism, and daily activities. Cult scenes and mythology are also frequently depicted and reveal an intense and very rich intellectual life during the *Hunting-Pastoral period*.

The earliest horizons are grouped as *Early Hunters*, and reflect a way of life of hunting-gathering bands who relied primarily on ibex and wild oxen as basic sources of food. Both animal and stylized anthropomorphic figures are common in these horizons. A few elephants and hippopotami are occasionally represented. It has been hypothesized that the earliest rock art known in the Arabian peninsula may go back to ca. 14,000 B.P., but this date is supported so far by the sole consideration that the rock art figures reflect a fauna of Pleistocene type.

In the Negev and Sinai another important sequence has been detected. Seven major stylistic periods have been defined as: I. *Early Hunters*; II. *Realistic Dynamic Hunters*; III. *Hunters and Pastoralists*; IV. *Pastoralists-traders*; V. *Roman-Byzantine*; VI. *Early Islamic*; VII. *Recent*. This sequence is

parallel to that detected in Arabia, though less diversified, and is likely to cover the last 10,000 years up to the present.

Central Asia and the Far East may be divided into two sub-groups, one in India and the other in central Soviet Asia, Siberia, and Mongolia. Very little information is presently available from other countries of the Far East. Despite substantial stylistic differences, both sub-groups appear to follow a parallel evolution, much like in the Near East, starting from *Early Hunters* expressions which can be safely attributed to the Pleistocene epoch, occurring before 12,000 B.P. Then follow *Hunting and Pastoral* groups, and finally there appear art expressions of populations with a complex mixed economy. Quite substantial concentrations of rock art are found both in the Indian subcontinent and in Soviet and Mongolian territories. Some areas are immense in extent and in quantity of figures, though detailed reports are not yet available.

The largest site known so far in India is Bhimbetka, in the state of Madhya Pradesh not far from Bhopal, which contains over 1,000 decorated rock shelters and caves within a few square kilometres. Bhimbetka is significant for its exceptional sequence of some twenty different styles of paintings covering the Upper Palaeolithic, the Mesolithic and the Chalcolithic periods. Later scenes of religious and mythological character illustrate the introduction and early developments of Hinduism and Buddhism. Over 20,000 years of Indian history are described on the walls of these caves. Excavations in the decorated rock shelters have brought to light layers with artifacts including decorated ostrich egg-shells, and have provided a sequence of C-14 dates starting from 25,000 B.P.

In the Soviet Union, the major concentrations known so far are scattered primarily along river valleys: the Amur and Usuri on the south-eastern borders with China, in the Chiukotka, in the valleys of the Lena, the Yenisei and the Angara, around Lake Baykal, in the upper Ob river, in numerous sites of Kazakstan, Uzbekistan and Tadjikstan, and in the Ural range.

At the Kapovaya Cave, in the southern end of the Urals, there are the only Palaeolithic paintings of Franco-Cantabrian style known so far in Asia. Along the Lena, the Yenisei and the Angara rivers, the earliest phases of rock engravings in open-air sites have been attributed to the Pleistocene epoch, before 12,000 B.P. They illustrate a stylistic approach which is different from the Franco-Cantabrian, and which already indicates the trend developed by later rock art assemblages in the same areas.

A thorough stylistic and chronological sequence of the rock art in these Siberian valleys is still to be elaborated. Nevertheless, the art of the hunting tribes seems to have persisted until quite late, probably until after the Amur and Usuri peoples had already developed agricultural patterns with a complex mythological world reflected in the rock art of the fifth millennium B.C. Kazakstan has revealed an extremely varied conceptual rock art, with engravings focusing on imaginary beings and on scenes of sun worship, which is likely to have reached its peak of creativity in the third millennium B.C.

Both in Mongolia and in the Soviet republics, a great quantity of rock art sites reveals the persistence of this traditional method of recording well into literate periods and into the Middle Ages. Records of caravans, trade, warfare and the cult of various religions, including Buddhism, Christianity and Islam, are widely represented.

Interestingly enough, outside India and the Soviet Union, other countries of the Far East have yielded very little information on rock art. Only spo-

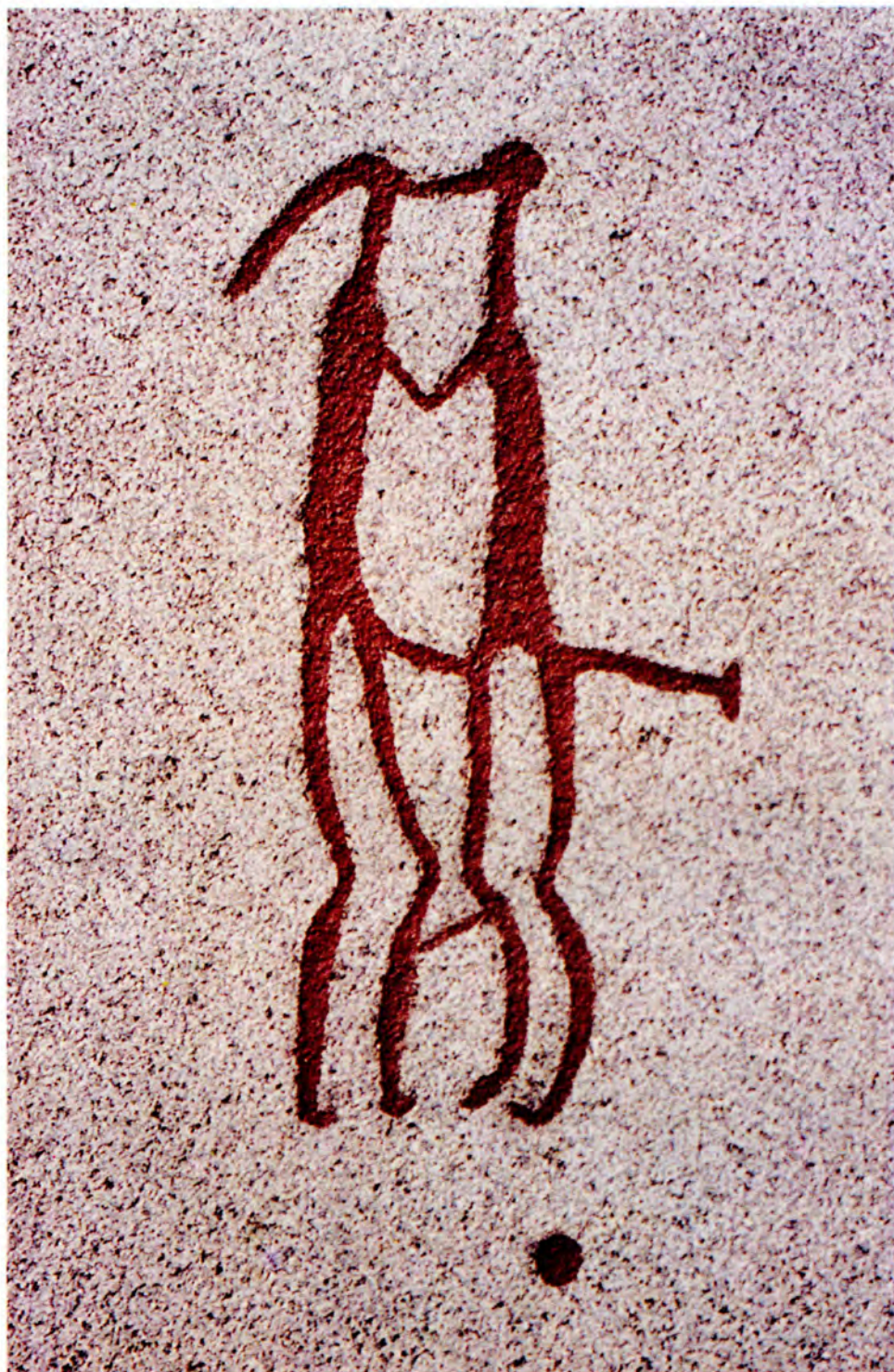


Fig. 12  
*Bronze Age couple from the rock engravings  
of Bobuslaan, Sweden.*

radic and fragmentary data are available on prehistoric rock art sites in Pakistan, Korea, Hong Kong, Indonesia, Timor, and Sri Lanka, while no information is available so far from Japan, the Philippines, Burma, Thailand, Cambodia, Laos or Vietnam. Reports from China, Nepal and Burma concern primarily Buddhist and later rock sites, although it is not unlikely that major concentrations of prehistoric rock art exist in these territories.

#### *D. Europe*

In Europe the rock art sequence is conventionally divided into two chronological cycles: the earliest cycle, known as Franco-Cantabrian, is the art of the hunters; the later cycle comprises art produced by peoples with complex economies. This stylistic division appears to be stricter in Europe than elsewhere.

The art of the *Hunters* is found primarily in caves, and its origins go back earlier than 30,000 B.P. The major concentrations are in the Franco-Cantabrian region in the southwest of France and in northern Spain. There are also sites elsewhere in France and Spain, as well as in Italy, Romania, Portugal, and as far east as the Kapovaya Cave in the Soviet Urals. In all, some 150 decorated deep caves and rock shelters from the Palaeolithic period are known in Europe, of which nearly 100 are in France and ca. 30 in Spain. Both engravings and paintings are present in virtually all of these sites. The subject matter consists primarily of associations of animals and symbols; in the advanced stage which is identified with the Magdalenian period (16,000-10,000 B.P.), the polychrome paintings are of a very sophisticated craftsmanship.

European Palaeolithic cave art has been studied quite intensively in this century, and is far better known and published than many other assemblages in the world. Nearly half the rock art specialists in the world today focus their major efforts on the study of this group, which in fact has become an elementary part of Western culture. No doubt it provides precious insight into the very roots of European civilization. Some masterpieces of Franco-Cantabrian art show an exceptional sense of harmony and conceptual refinement. In a world view, however, it must be kept in mind that there are other significant assemblages contemporary to the Franco-Cantabrian sites which may provide equally valuable contributions to world history and to the understanding of the early intellectual adventures of *Homo Sapiens*.

A rather schematic stage of rock art of *Late Hunters and Gatherers* containing many symbolic images, is detected in the final Palaeolithic, Epi-Palaeolithic and Mesolithic ages in the western Mediterranean region. Several local styles focus on mazes, patterns of lines, dots and other marks which seem to have numerical values. This stage is represented primarily between 11,000 and 8,000 B.P. It includes so-called Romanellian rock art in Italy and La Cocina-style rock engravings in Spain and southern France. Similar figures are found along the Mediterranean coast in Turkey, Israel, Morocco and Algeria. This artistic horizon has been related to actual living sites and material culture, and thus can be specifically dated by comparison with archaeological evidence.

Later hunters persisted in the Scandinavian countries, and have left open-air rock engravings all the way up to the Arctic Circle, in the Tromsø province of northern Norway.

The second cycle is the expression of peoples living on mixed economies, and seems to have already appeared while the Franco-Cantabrian was in its

last phase; it is characterized by open-air rock engravings found widely spread in numerous countries of Europe: Portugal, Spain, France, Ireland, Scotland, Bulgaria, Switzerland, Italy, Austria, Yugoslavia and Greece. The earliest phase is defined "Epi-Palaeolithic", and reflects the persistence of the Franco-Cantabrian range of subject matter in a decadent Palaeolithic style. It constitutes the early stage of a sequence of rock engraving styles and periods found in Spanish Galicia, Italian Valcamonica and Austrian Totes Gebirge, and of rock paintings in Spanish Levant. The beginning of animal domestication and of incipient agriculture is recorded in the subsequent phase, when human beings become the main subject matter. From then on, a parallel stylistic evolution with specific local characteristics may be followed both in Mediterranean Europe and in the northern countries. Almost everywhere in Europe rock art became virtually extinct with the advent of the Roman Empire, although in some areas this tradition persisted, or was renewed, in the Middle Ages.

Major concentrations of prehistoric rock art in Europe are found in the Iberian peninsula (Spain and Portugal), southern France, the Alpine range (including France, Switzerland, Italy and Austria), in southern Italy, in the Scandinavian countries (Sweden, Norway, Denmark and Finland), and in Soviet Karelia. More recently, substantial rock art sites have been reported from Yugoslavia, Bulgaria, Albania and Greece.

Special cases are those of Magoura Cave near Belogradchik, Bulgaria, and of Badisco Cave near Lecce, Italy, where Neolithic and Chalcolithic sanctuary caves with numerous paintings of a cosmological and religious character from the 5th and 4th millennia B.C. have been brought to light. Such painted sanctuary caves are a characteristic of the Palaeolithic era and are very rare in later periods. In the European Soviet Union major rock art sites have been recorded in Karelia, on the shores of Lake Onega and Lake Ladoga, and along the shores of the White Sea, in the valley of the river Volga, as well as in Georgia, Armenia and Azerbaijan in the Caucasus. In Gobustan, near the south-western shores of the Caspian Sea, an exceptional succession of styles recently studied by I.M. Djafarsade has revealed an evolution ranging almost uninterruptedly from the eighth millennium B.C. to the Middle Ages. Such a sequence of Post-Palaeolithic rock art in Europe is equalled so far only in Valcamonica, Italy.

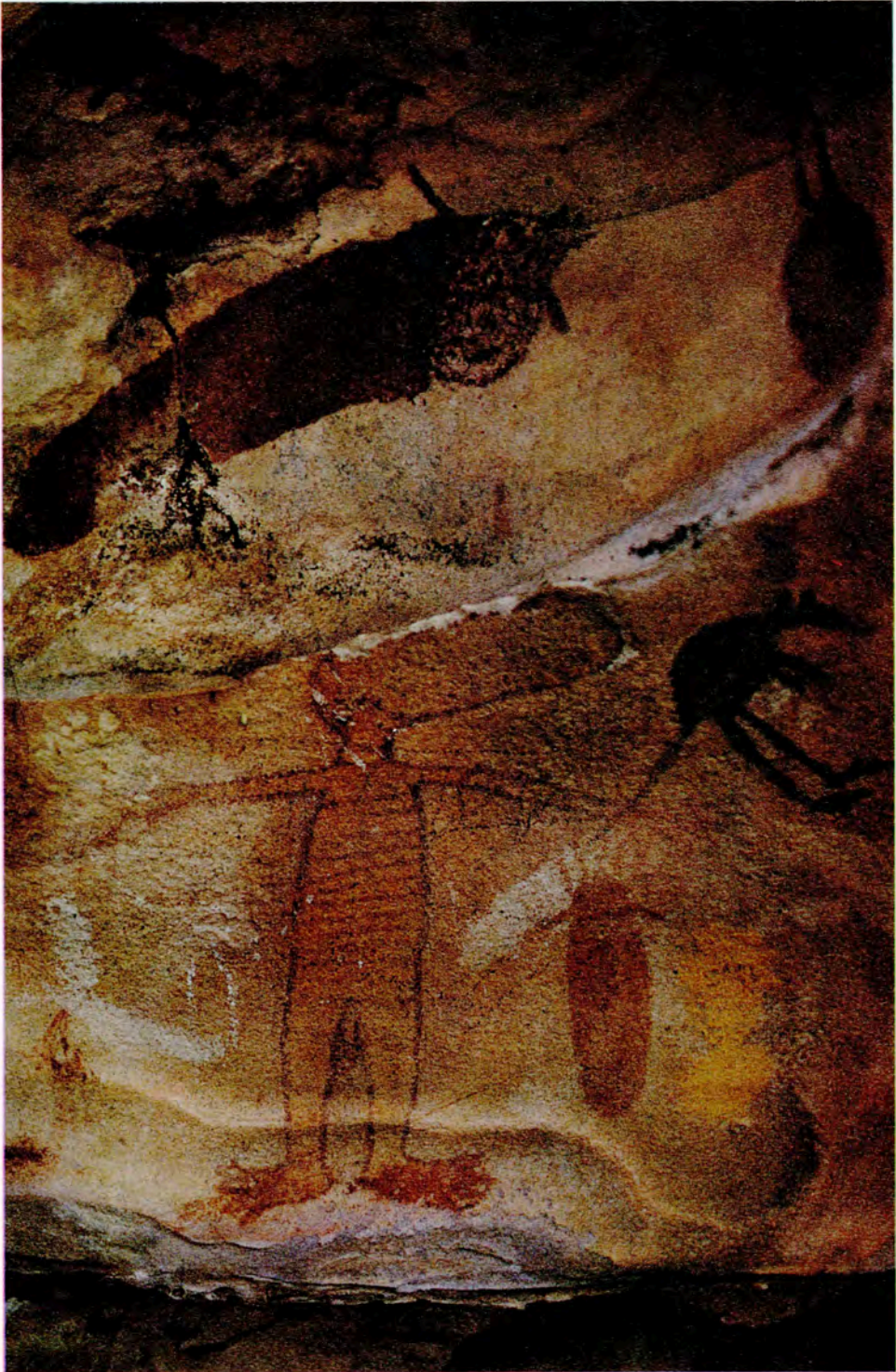
Valcamonica at the moment is the richest area of rock art in Europe, both quantitatively and in terms of age and range of successive styles. So far, over 200,000 figures have been recorded. A series of six major styles range through a time span of some 10,000 years, covering the entire Holocene epoch. This valley provides a complete stylistic sequence, from the earliest hunting clans that reached the Alpine area immediately after the melting of the Ice Age glaciers, up to the advent of the Roman Empire and later, with secondary persistencies until the Middle Ages. The sequence begins with the Proto-Camunian style which belongs to the Epi-Palaeolithic period. Valcamonica Styles I and II are Neolithic, dating back to the 6th through 4th millennium B.C. Style III-A is from the Chalcolithic or Copper Age, covering the 3rd millennium B.C. Styles III-B to D occur during the Bronze Age and cover the 2nd millennium B.C. Style IV starts in the final Bronze Age and continues through the entire Iron Age (1st millennium B.C.). Finally, the Post-Camunian style ranges from Roman times to the Middle Age.

### *E. Oceania*

In Oceania, by far the most significant concentrations of rock art are found







*Figgs. 13-14-15  
Rock paintings at Laura, York peninsula,  
Australia.*

in Australia, while minor assemblages of rock art have been detected all over the Pacific and as far east as Easter Island. In several cases this tradition appears to have reached the islands with the first populations. In Australia, as mentioned already, the earliest graphic signs in Koonalda Cave are over 20,000 years old. Complex figurative assemblages in Laura on the Cape York peninsula and at Panaramitee Hill in South Australia may be 14,000 years old or more. C-14 datings obtained in 1982 from Laura confirm such an early date. Also, samples of C-14 from layers covering engravings have yielded several dates, from ca. 13,200 B.P. to 15,450 1,500 B.P. In Australia, New Guinea, the Bismark archipelago, and Timor, rock art was still being produced as recently as the last generation, thus allowing ethnologists to make records of the contexts in which this custom occurred.

Rock art has recently been recorded in various areas of the Pacific, primarily in the Hawaiian and Easter islands, in both major islands of New Zealand, and in southern New Guinea. The most important concentrations known so far from the Pacific, outside Australia, consist of rock engravings in Hawaii. In New Zealand there are several caves, rock shelters and open-air sites which contain finely preserved and elaborate paintings and engravings made by Maori tribes during the last few hundred years. On Easter Island, deeply engraved images and figures in relief appear to belong to the same age as the monumental statues.

Recent extensive fieldwork carried out in the Sydney area, the Cape York peninsula, Arnhem Land, the Kimberley and Dampier regions and the territory of South Australia, have revealed the range of Australian rock art which includes several areas containing over 1,000,000 figures each. Recent research in Tasmania indicates that the custom of creating rock art was probably introduced there as a consequence of migration from Australia or contact with Australians, before the rise of the ocean, ca. 10,000 B.P.; before then Tasmania must still have been connected to the mainland. The Tasmanians are in fact "early Australians" who remained isolated from the mainland around 8,000 B.C. The so-called "pre-dingo" phase, which appears to have evolved on the Australian mainland before 8,000 B.P., may have persisted much longer in Tasmania.

Numerous local styles have been identified throughout Australia, creating serious difficulties in tracing a general evolution of Australian rock art styles. Actually, every style in Australian rock art may be safely attributed to hunting societies, as the overwhelming majority of aboriginal groups still constituted hunting societies at the time of contact.

In very broad lines, however, six major stages may be distinguished:

1. The *Koonalda Cave Marks* style is found today mainly in southern Australia and in Victoria. It consists of simple parallel engraved markings, some of which may have a numerical value. This style, as mentioned previously, has been dated to ca. 20,000 B.P. Its duration, however, cannot be established yet.

2. The *Murray River Pattern Marking* style is known from several sites, from Cape York in northern Queensland to the Murray River valley in southern Australia, and in Tasmania. At Laura it has been related to archaeological layers dated by C-14 methods to between 13,200 and 15,450 B.P. Its presence in Tasmania would also imply a rather early date. Recurring patterns, such as horseshoe-like forms, rectangles, circles with dots and series of parallel lines are among the most common motifs which are engraved again and again.

3. The *Panaramitee Symbolic-Figurative* style has been recorded in South

Australia, New South Wales, Queensland and the Northern Territory. It still belongs to the pre-dingo sequence and is likely to be at least 8,000 years old. It consists of engravings representing elements such as hand prints and footprints, animal tracks, dots (which are believed to represent eggs and are sometimes enclosed in ovals resembling nests), boomerang-like patterns, schematic animal figures, and human-like schematic faces.

4. The *Sydney Generalized Figurative* style has been recorded in New South Wales, Victoria and Queensland. It is mainly concentrated in the east and is likely to have lasted a long time; specific dates are presently not available. In Western Australia, near Dampier, similar engravings are likely to be much more recent. This style consists of large-sized outlined figures of both humans and animals. Humans are frequently represented in couples, and animals appear with their offspring or eggs. Scenes of erotic character and images of mythological beings are common.

5. The *Laura Classic Figurative* style has been recorded in Queensland, the Northern Territory and Western Australia, and appears to have a predominantly northern distribution. At Laura it has revealed a series of over twenty phases of paintings, sometimes bichrome and patterned, which overlap earlier engravings in the *Murray River* and *Panaramitee* styles. In Queensland and in the Northern Territory it is found superimposed in its turn by figures of the subsequent *Arnhem Complex Figurative* style. It consists of rather static yet beautiful paintings representing humans, spirits, animals, hand stencils, symbols and other objects, and contains a much greater variety of subject matter than any previous style, an innovative imagination, and a highly developed aesthetic sense. Composition seems to be considered within a new and more complex perspective. This style has different local patterns in Laura, Arnhem Land, Kimberley and Dampier, and includes both paintings and engravings.

6. The *Arnhem Complex Figurative* style generally corresponds in distribution to the *Laura Classic*, but is most dense in Arnhem Land and the Kimberley region; lesser concentrations are found in Queensland and Western Australia. As in the previous style, local patterns can be distinguished. It consists primarily of complex depictions of a large variety of subjects, and includes mythological and magical scenes. Anecdotal descriptions show a wonderful imagination and a wealth of colours and details. It is the only extensive polychrome style in Australia, and is by far the most complex. It is still being executed in some areas, both on rock surfaces and as bark paintings.

This sequence of styles, though oversimplified, illustrates six major stages in the history of the Australians for a period of over 20,000 years. The earliest art known on this continent is located in the south, which is also the area of earliest development. In the north, the two most recent styles seem to represent cultural levels that were never reached in regions of central and southern Australia. Rock art research is developing fast in Australia on sound ground, and is likely to bring very important contributions to the understanding of cultural evolution in the region.

## F. The Americas

As mentioned already, the earliest dated rock art sites in the Americas so far are in Brazil and Argentina. The earliest date is provided by C-14 analyses of a level which goes back 17,000 B.P. and contains rock fragments with traces of red ochre, in the state of Piauí, Brazil. In southern Patagonia, Argentina, rock art has been found at Rio Pinturas related to archaeological levels dated to 9,300 B.P. (hand stencils and hunting scenes). Another site



Fig. 16  
Chumash sacred cave paintings from California, USA.

Fig. 17  
Huge cave paintings at Santa Borjita, Baja

California, Mexico.

Fig. 18  
Hand stencils from southern Patagonia, province of Chubut, Argentina.





in the Province of Santa Cruz, Cueva de los Toldes, contains levels connected with paintings (hand stencils and non-figurative signs) dated between 11,000 and 8,800 B.P. They are connected with a hunters' culture with bifacial points. Similar paintings are known at Alero de las Manos Peritadas, in Chubut. North American rock art has not been sufficiently studied yet, but it is not unlikely that similar dates will be obtained in the West Coast states, where some of the major clusters of rock art on the American continent are concentrated.

From records available so far it seems that rock engravings are more widespread in northern America, whereas rock paintings are more widespread in Latin America. California and New Mexico seem to be the transitional areas where both types are equally common; however, both paintings and rock engravings are found from central Canada to southern Patagonia.

It seems premature at present to generalize the succession of styles in the Americas; local sequences recorded in Baja California, Mexico, and in Patagonia, Argentina, may provide guidelines for recognizing more diffused patterns. Both in the north and in Latin America, an early sequence of hunting and gathering rock art appears to have preceded later styles which include Late Hunters, Gatherers, and more complex economic groups. In parts of the Americas, hunters' rock art is the only type present, while elsewhere, in British Columbia, along the US West Coast, in Mexico, Peru, Brazil and in the northern provinces of Argentina and Chile, rock art styles reflecting incipient food-producing and mixed economies are also found. An early fishermen style may be present in British Columbia.

A thorough stratigraphic analysis has been conducted in Argentinian Patagonia at Rio Chubut, where a series of four subsequent styles belonging to hunting-gathering cultures may cover a sequence of 12,000 years. Hand stencils and abstract marks were depicted here for ages, while human and animal figures (camelides) were added at various later periods.

In Peru and northern Chile the rock art sequence culminates in a phase of monumental hill figures, consisting of huge forms delineated by stones and boulders on the hill slopes. Similar examples of "boulder figures" appear in central Canada and in the western states of the USA.



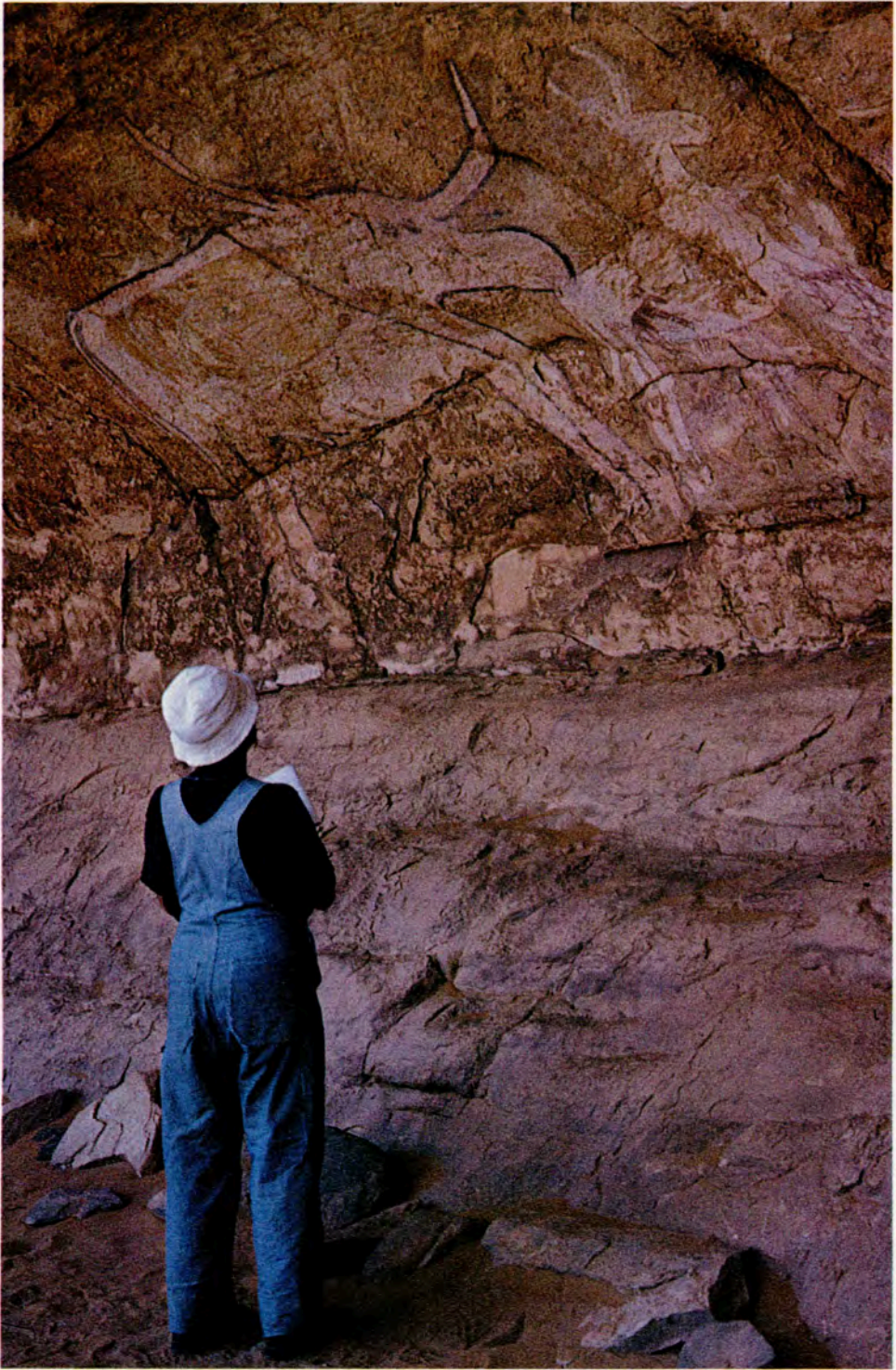
Fig. 19-20  
 Rock paintings of Minas Gerais, Region of  
 Lagoa Santa, Brazil.

Northern Arizona, Chile, Peru and Bolivia have revealed a rich sequence of styles, both engraved and painted which is yet to be fully analysed, but which has already contributed a wealth of information on the cultural evolution and the succession of life patterns in the area.

A very important sequence has been detected in Baja California, Mexico. This area is characterized by a large number of styles, ranging through several periods, which often occur in the same caves and rock shelters. This exceptionally valuable stratigraphy may prove very useful in the elaboration of an American sequence. No dates are available so far from Baja California, but the succession of styles indicates a rather long duration of rock art traditions. Both paintings and engravings are present. The sequence starts in the Early Hunters' horizon and ends after the Spanish conquest. The four major eras are defined as Early Hunters, Late Hunters, Hunters-Fishermen, and Mixed Complex Economy.

*Early Hunters* stylistic assemblages are characterized by large-size figures of animals, hand stencils, symbols and signs. Instead, anthropomorphic beings are the main subject matter of the *Late Hunters* style, with spirits and monsters revealing a very rich imaginative world. The *Hunters-Fishermen* style has a wealth of engravings, in addition to many refined paintings. Fish and sea monsters are prominently depicted even at sites quite distant from the sea or lakes. Whales and other large sea animals are commonly represented at sites at two to three days' distance from the coast. The last style reveals a *Mixed Complex Economy* and is mainly made of symbols, hand-prints and geometric patterns, repeating motifs found on pottery and objects from late pre-Colonial times. Connections with assemblages further north in the south-western states of the USA seem to indicate that certain phases reflect widespread cultural patterns.

Both in the USA and in Canada, the recording of rock art began during the last century. Very large concentrations of sites have been reported in all the western states, from Texas, Arizona and California to Washington. A richly diversified sequence of styles has been reported in Utah, while sites of



*Fig. 21-22-23  
Painted rock shelters in the Central Sahara,  
Tassili n'Ajjer, Algeria.*





varying significance are known in several central states as well. Maps and descriptions are available, yet analytical works and chronological studies have still to be developed. A sequence of styles has not yet been clearly established, and a working chronology is still in the process of being elaborated.

In Canada, the province of British Columbia contains by far the most significant concentrations and richest assemblages of rock art, Vancouver Island being one of the major centres. Sites are also found sporadically in Alberta, Manitoba and Ontario. British Columbia may have some rather early rock engravings of a hunting-fishing human group. More recent mythological figures of monsters, sea animals, and imaginary beings may be associated with figures which persisted until recently on totem poles, decorations of houses and other objects. An early stage of this stylistic horizon seems to have far-reaching parallels, primarily in the Amur-Usuri Soviet Far East.

The Americas contain a very rich variety of rock art which illustrate at least 17,000 years of cultural records, illustrating man's intellectual adventures and imagination. Information is widely scattered and not yet adequately assimilated. The existing raw material justifies broader and more incisive analyses than have so far been achieved.

### *G. Summary*

The present survey is mainly compiled from reports produced by researchers around the world and from the documentation existing at the CCSP. It should by no means be considered exhaustive. Indeed, indirect reports have informed us of large and important rock art sites in such countries as China, Nepal, Vietnam, Korea, Japan, Indonesia, Cuba and Costa Rica, for which there is not sufficient documentation available at present. However, this preliminary survey illustrates how rock art appears to have been the most widespread artistic expression of prehistoric times in the world, and indicates the role that rock art could have, both internationally and locally, for culture and for historical reconstruction.

## **VI. INVENTORY, PRESERVATION AND CULTURAL USES**

### *A. Inventory and Study*

One of the major problems being faced today in the inventory and study of rock art is caused by the variation in data available from one area to another. In order to facilitate the compilation and dissemination of information and knowledge, we should develop and adhere to a universal terminology and method of recording and analysis. Research teams operating in different parts of the world are compiling an inventory which will benefit archaeologists immensely and contribute to a new cultural approach to early human history. However, as a result of the lack of a universal system, some researchers actually failed to accurately record the location of sites under their investigation. In addition, there is a lack of graphic documentation such as photographs and tracings, which leads to the already-mentioned difficulties in the exchange of knowledge and cooperation.

### *B. Preservation and Conservation*

Preservation and conservation efforts are being undertaken both by governmental and non-governmental agencies in a number of countries, including Algeria, Argentina, Australia, Canada, Egypt, France, Italy, Lesotho, Norway, South Africa, Spain, Sweden, Tanzania and Zimbabwe. Despite the

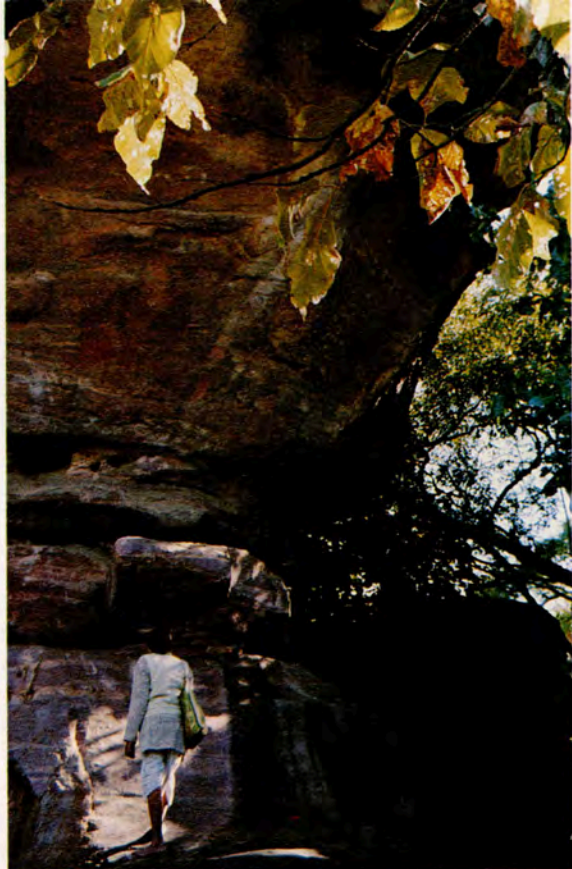
differences in environment, ecology and climate, similar causes of deterioration have been detected everywhere. Natural deterioration results from geophysical, chemical and bio-chemical causes, as well as from those produced by flora and fauna. By far the greatest harm, however, is done by man. It can be involuntary, as the consequence of development or other re-use of the sites, or it can be the result of neglect and vandalism. The negative effects of man should and can be stopped, both by educational methods and by local and international activities aimed at preserving a common patrimony. Preservation being a common problem to many countries, the proposals for a solution should be elaborated at an international level. For this purpose it is important that every nation which has rock art in its territory develop a serious concern for its protection and a willingness for international cooperation.

The preservation and conservation of documentation is no less important. Records, photographs, tracings and topographic maps made by expeditions, individual researchers and government agencies should be used for research and for culture. Copies should be made available for present study, and also preserved for future generations. In fact, it must be kept in mind that every kind of documentation is vulnerable to deterioration. The most efficient way to preserve documentation is to have it published and disseminated. In this view, the functions of archives, which tend to be used solely as storage places, should be amplified. By elaborating as well as collecting data for publication, archives can serve to disseminate information more efficiently and to protect documentation in a more enduring way for the future.

The opening of rock art sites to the public is being considered in many countries. Parks have already been created in Italy, Sweden, Algeria, Canada and the USA. They are currently being planned in Tanzania, Lesotho, South Africa, Namibia, Zimbabwe, the USSR, India and Australia. It is vital, however, that certain initial steps be taken. Study, inventory and rigorous graphic documentation, followed by conservation and preservation, must be conducted before the sites can be made accessible to the public. Unfortunately, this sequence of priorities is not always maintained. Parks are planned and opened to the public without the necessary preliminary studies which would ensure that the legacy of rock art cannot be harmed by the public. At sites such as Valcamonica, in Italy, there are over 300,000 annual visitors, while in Tanum, Bohuslaan, Sweden and at Mount Bego in the French Maritime Alps, tens of thousands of people visit the rocks annually. Because of this natural curiosity on the part of the public, proper actions for preventing damage should be seriously considered.

Exhibitions on rock art have been planned for display in various countries. Two large exhibitions have been recently organized by the CCSP. One is on the rock art of the Negev and Sinai. Over 300,000 people came to the exhibition, which was first displayed for three months, in the National Museum of Jerusalem (Israel), and then in the National Library of Rome (Italy) for another two months. The second exhibition, on Camunian rock art, was displayed at the Triennale in Milan (Italy), and in seven months attracted over one million visitors. Some years ago an exhibition on rock art from Tassili'n'Ajjer (Algeria) was extremely successful in Paris (France). Other exhibitions have been organized and displayed at the Musée de l'Homme, Paris, in Canada at the Victoria Provincial Museum, B.C., and in Oman, at the National Museum, as well as in Australia, Libya, and Sweden. In other countries rock art is occasionally displayed in archaeological exhibitions. Such displays are most valuable in disseminating information, and do not cause any harm to the sites. Efforts to circulate such exhibitions and to

*Figg. 24a-24b-25-26*  
*Rock paintings at Bhimbetka,*  
*Madhya Pradesh, India.*





stimulate new ones should be encouraged.

### ***C. Cultural Promotion***

Two main aspects are considered here: 1. the training of specialists, and 2. educational promotion both at schools and in the public at large. Undoubtedly it is of little use to study rock art if research does not contribute to knowledge as part of general culture. By allowing the public to benefit from the actual investigations, a broader dialogue can develop between scholars and laymen. In addition to the above-mentioned parks and exhibitions, television and radio programmes have been produced by various museums and research bodies in Italy, France and Spain. Monographs have been published in several countries as well as international organizations such as UNESCO and ICOMOS are beginning to take an active part in the dissemination of this special form of cultural information.

Still, not enough has been done so far. The constant demand for training courses and seminars should be satisfied. First of all, the training of specialists should be aimed at the formation of the necessary staff for the inventory, study, and preservation of rock art, and for the promotion of public awareness. Specialists should be informed and kept up to date on the progress of rock art research within a broad, international perspective. Thus, while countries and regional organizations should promote local courses and seminars, international organizations should instead be primarily concerned with the training of specialists at the international level.

Special cultural programmes for schools and for the general public should be organized, particularly in those areas where rock art is present and is in danger of destruction or vandalism. Public awareness would inspire a feeling of identity for the local populations and can be the best way to safeguard the rock art sites.

For countries that lack the technical and financial means to develop parks, careful planning is necessary and international support should be favoured when requested. The results of scientific research at the service of culture must take into account the social, psychological and spiritual needs of each particular population, and develop means by which to convey meanings and messages to the greatest number of people. One way to achieve this goal is to prepare displays used for travelling exhibitions, documentary films, radio and TV programmes, and, of course, to produce and disseminate publications.

## **VII. CONCLUSION**

In concluding this world report of rock art studies it is important not to lose sight of our ultimate goals. They are threefold: 1. to obtain comparative historical information on human cultural horizons through universally accepted research methods; 2. to make the results of investigation accessible to current culture; and 3. to preserve the world's heritage of rock art for the study and enjoyment of future generations.

We have already emphasized the need for international cooperation in the unification of research methods. If further progress in research is desired a world view seems necessary in order to understand this world-wide phenomenon. This topic merits further consideration if we are to realize such a goal. First, in order to develop and promote rock art studies world-wide, we must establish an interdisciplinary central data bank, which would receive from, and provide to, researchers and research centres the needed comparative data. This central archive would contain reports, published and un-

published studies, and distribution maps of rock art, as well as graphic and photographic documentation and a standard rock art file providing locations and essential descriptions of every rock art site in the world. Such a file is currently being developed, and will constitute a research tool of unprecedented implications.

Secondly, it is strongly recommended that universal standards of collecting and recording data, as well as general criteria of analysis, be established. With a standardized method, it will become possible to compare data and to determine which information is most significant, in order to present it in the most coherent manner possible. In addition, the CCSP, in conjunction with UNESCO and ICOMOS, is in the process of developing an international terminology list which will allow for a universal glossary of rock art terms, and help to avoid confusion in definitions across languages. Accurate documentation will provide the raw material for analysis and interpretation.

Furthermore, it is essential to bear in mind that while scholars must be allowed to retain sufficient independence in conducting their research, yet the interaction of creative ideas remains the primary way to stimulate the growth of knowledge. In order to better understand the initial motivations, functions, and roles of these primordial artistic creations, we must pool our efforts by comparing and discussing, and learning from each other's ideas.

Too often scholars, purportedly working toward the progress of science and culture, operate in isolation, unaware of the developments in other areas of the world within their own field. Such a lack of communications can only inhibit the dissemination of knowledge and limit the progress of the messages inherent in rock art. Without a world data bank, the scopes of local research are bound to be circumscribed to a provincial level. Rarely in such circumstances can a study, even of local patterns, make significant contributions in cultural and historical terms. This is a serious cause of dissatisfaction among scholars. It is vital therefore to create a necessary tool for information and communication on a world basis, such as the proposed data bank.

The second goal, to make the fruits of research accessible to culture, is no less important. The scientific data, however carefully documented, will never be converted into culture if they do not belong to part of a common educational heritage and are not shared with society as a whole; this, after all, is one of the most important goals of research. We have already evaluated the methods by which we can make rock art accessible to the greatest number of people, through publications, cultural programmes, museums, parks and travelling exhibitions. Yet in addition we must strive to allow each independent area to preserve its cultural autonomy.

Each country must have the right to safeguard and develop its own cultural heritage, while at the same time maintaining a cooperative attitude on an international level. This will require effort and goodwill on both international and local levels. Researchers should publish their findings for the benefit of other researchers and the public at large. The publication of the *World Journal of Rock Art Studies* will make the results of research and the current state of rock art available to both scholars and laymen alike.

The third goal, to preserve the rock art heritage for future generations, is closely interrelated with the previous ones. Indeed, if we can realize the second goal and successfully cultivate cultural awareness, we shall be well on our way to efficient preservation and conservation, as local interest in rock art will inspire a keen desire to preserve the area and build a sense of actual concern. One can hardly make serious efforts to preserve what one does not value and does not understand.



*Figg. 27-28  
Rock engravings at the Tago River, Portugal.*





*Fig. 29-30  
Guano paintings at Magoura Cave, Biograd-  
cbik, Bulgaria.*

To study rock art is to investigate the early chapters in the intellectual history of our species. Rock art has been found in over 100 countries throughout the world; a great many queries still remain unanswered in this emerging discipline. We recognize our common cultural origins from the pervasiveness of rock art around the world; in order to promote the study of this heritage we must continue to stimulate and improve truly international cooperation.

As we have seen, rock art is in its infancy as a field of study, even though the first descriptions go back more than three hundred years. In fact, we must design a universal platform for research, while rock art research is still a young science, which can be used in this generation and which future students in rock art can build upon.

Rock art appears to have served a variety of purposes and reflects human social, psychological and conceptual needs. In this sense much can be said about the rock art of recent tribal groups such as the San people of South Africa, the Algonkians of Canada, the Bedouins of the Near East, or the Aranta of central Australia, whose direct testimony is still available. Much relevant information can be gleaned from comparisons between contemporary peoples and early human groups. But the "reading" of rock art goes beyond mere analogies: numerous assemblages appear to represent systems which approach what we would call "ideographic writing". In some sites, as at Valcamonica in the Italian Alps, their decoding is well under way. Thus new perspectives emerge from an old subject.

Rock art represents successive chapters in the history of our species, from the early hunters to contemporary hunting-gathering and pastoral societies. Hence a truly international approach, with respect to the comprehensive study and safeguarding of outstanding treasures of rock art, has become an urgent necessity. The same types of emotions and motivations that still today are at the roots of many of our feelings and behavior are found in rock art. Its study brings to our consciousness those archetypal elements that been repressed by modern education, but that have always been hidden within ourselves. Rock art can be a tremendous means not just for cultural, aesthetic and historical evaluation, but also for awakening an awareness of our identity and the capacity to understand the deep roots of our being.

A distinguishing aspect of rock art is that it reflects what is inside man in a mirror-like fashion. It reveals intimate aspects of its creators, and thus is a unique source of information about the emotional, ethical and conceptual components of early man's nature. Rock art provides evidence of human creativity, abstract thought and imagination, as well as of man's constant search for harmony and balance with fellow men and other animals, the environment, nature and the "supernatural".

Through rock art, its composition and choice of subjects and colours, consciously or unconsciously, man has expressed his artistic sense. He has also expressed his intellectual abilities: thought processes are visible in the subject matter depicted, whether figures, ideograms or psychograms. These indirectly reflect man's awareness of himself and of his surroundings: different psychological stimuli, patterns of cultural background, economic conditions and social situations are revealed by graphic or artistic expressions. With a perspective across millennia, a broader understanding of human behavior can unite us with our early ancestors.

Before the beginning of writing, rock art contained the intellectual expressions of man, his emotional and personal way of interpreting the environment and its phenomena and of facing the challenge of contact between the

inside and the outside. Whereas writing provides historical records over the last five thousand years at best, we have only a few, indirect indications of how man behaved, what his motivations were, or what his religious and conceptual life was like before ca. 3,000 B.C. When thoroughly analyzed in a broad cultural context, rock art can expand historical records with details of subtle and deep human feelings, beliefs and attitudes over the last forty thousand years, and this on every continent, even in areas of the world where written history is only a few hundred years old.

Rock art becomes a tool in the hands of man: a tool for acquiring knowledge of a new dimension of the past and for rediscovering himself and his own roots.

*NOTE: The illustrations are from the World Inventory and Data Bank of rock art, Centro Camuno di Studi Preistorici.*

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### REGISTER OF "MAJOR SITES" ACCORDING TO AREAS AND COUNTRIES (As of December 1983)

#### Area A: ASIA

- 1 - AFGHANISTAN (n. 21)
- 2 - INDIA (n. 23-24)
- 3 - MONGOLIA (n. 25)
- 4 - PAKISTAN (n. 22)
- 5 - USSR (n. 1-20)

#### Area B: MIDDLE EAST

- 1 - IRAN (n. 7)
- 2 - ISRAEL (n. 2)
- 3 - JORDAN (n. 4)
- 4 - OMAN (n. 6)
- 5 - SAUDI ARABIA (n. 5)
- 6 - SINAI, EGYPT (n. 3)
- 7 - TURKEY (n. 1)

#### Area C: NORTHERN AFRICA

- 1 - ALGERIA (n. 1-5/6)
- 2 - CANARY ISL., SPAIN (n. 3)
- 3 - CHAD (n. 12)
- 4 - EGYPT (n. 8-10)
- 5 - ETHIOPIA (n. 15)
- 6 - LIBYA (n. 7)
- 7 - MALI (n. 14)
- 8 - MAURITANIA (n. 4)
- 9 - MOROCCO (n. 2)
- 10 - NIGER (n. 13)
- 11 - SOMALIA (n. 16)
- 12 - SUDAN (n. 11)

#### Area D: SOUTHERN AFRICA

- 1 - ANGOLA (n. 15)
- 2 - BOTSWANA (n. 8)
- 3 - KENYA (n. 1)
- 4 - LESOTHO (n. 11)
- 5 - MALAWI (n. 5)
- 6 - MOZAMBIQUE (n. 6)
- 7 - NAMIBIA (n. 13/14)
- 8 - SOUTH AFRICA (n. 9/10-12)
- 9 - TANZANIA (n. 3)
- 10 - UGANDA (n. 2)
- 11 - ZAMBIA (n. 4)
- 12 - ZIMBABWE (n. 7)

#### Area E: EUROPE

- 1 - AUSTRIA (n. 25)
- 2 - BULGARIA (n. 26)
- 3 - DENMARK (n. 7)
- 4 - FINLAND (n. 6)
- 5 - FRANCE (n. 11/14)
- 6 - IRELAND (n. 10)
- 7 - ITALY (n. 20/23)
- 8 - NORWAY (n. 1/3)
- 9 - PORTUGAL (n. 17)
- 10 - SPAIN (n. 15/16-18/19)
- 11 - SWEDEN (n. 4-5)
- 12 - SWITZERLAND (n. 24)
- 13 - UK (n. 8-9)
- 14 - USSR (n. 27-31)

#### Area F: NORTHERN AMERICA

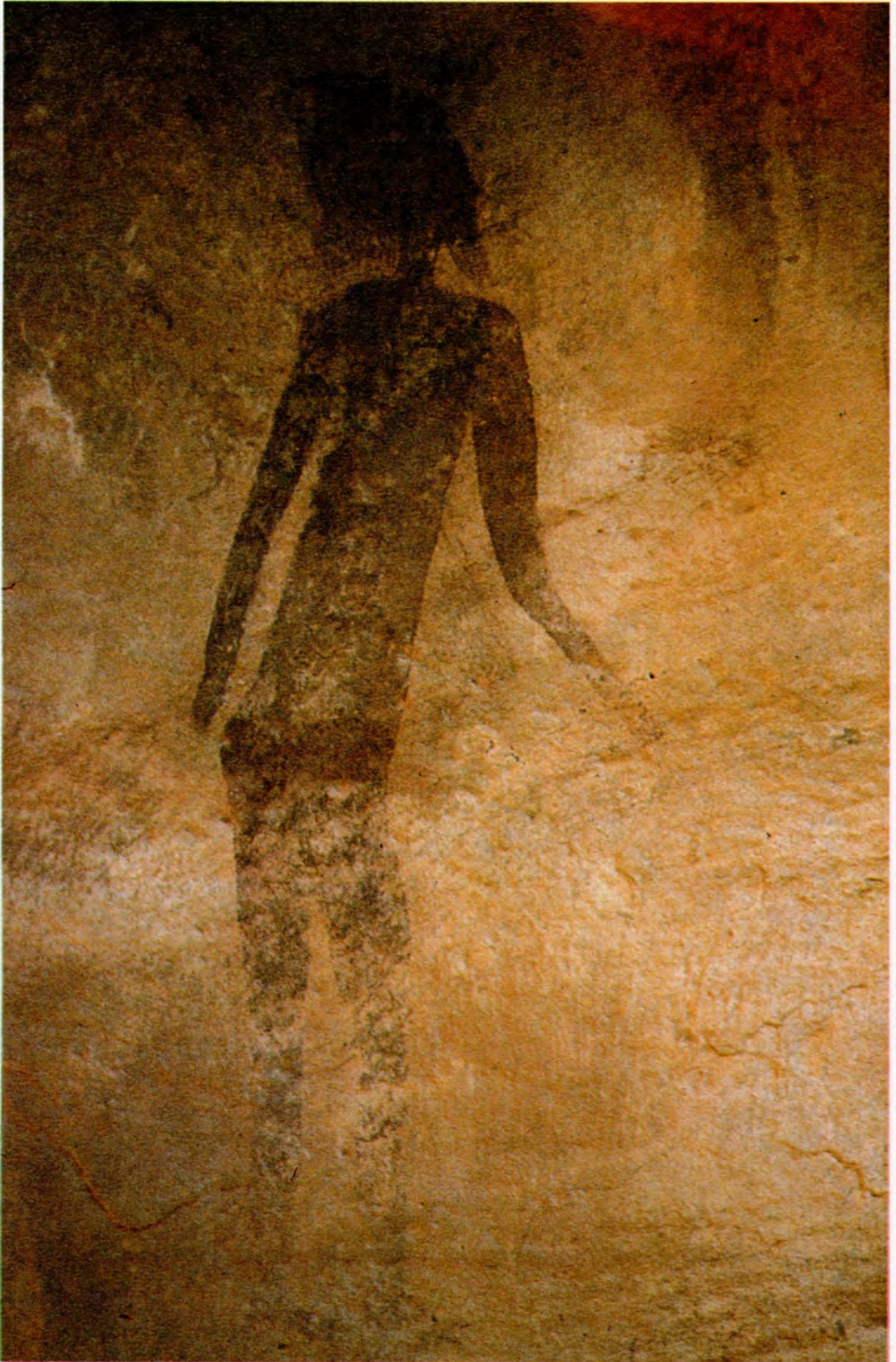
- 1 - CANADA (n. 1-6)
- 2 - USA (n. 7-13)

#### Area G: CENTRAL AND SOUTHERN AMERICA

- 1 - ARGENTINA (n. 20-24)
- 2 - BOLIVIA (n. 13)
- 3 - BRAZIL (n. 10-14/19)
- 4 - CHILE (n. 25/26)
- 5 - COLOMBIA (n. 8)
- 6 - ECUADOR (n. 9)
- 7 - GUYANA (n. 7)
- 8 - MEXICO (n. 1/4)
- 9 - PERU (n. 11/12)
- 10 - DOMINICAN REP. (n. 5)
- 11 - VENEZUELA (n. 6)

#### Area H: OCEANIA

- 1 - AUSTRALIA (n. 1-9)
- 2 - EASTER ISLAND, CHILE (n. 15)
- 3 - HAWAII, USA (n. 14)
- 4 - NEW GUINEA (n. 10)
- 5 - NEW ZEALAND (n. 12/13)
- 6 - SOLOMON ISLANDS (n. 10)



*Fig. 31*  
*Large human figure painted in the Central*  
*Sabara, Tassili'n'Ajjer, Algeria.*