The Rock Art of Africa

Carleton S. Coon

Of no other continent are the prehistoric population movements more obscure than in Africa. Students of the racial and cultural history of African peoples clutch at every bit of evidence, including their art, which of course is more widely studied simply for its esthetics. Africa uniquely contains tens of thousands of paintings and engravings on the surfaces of rocks, mostly granite and sandstone.

The sites of these pictures range from the northern fringe of the Sahara to the Cape of Good Hope, skipping over the stoneless upper Nile valley and circling past the forested lowlands. They show animals, hunting scenes, men wearing what look like space helmets, animal-headed men, men in chariots driving horses, men riding horses and camels or driving herds of cattle, somber burial scenes, sky-gods watering the earth, and geometric figures, some of which look like illiterate attempts to produce the Arabic name of God. They show us people of three races, Bushman, Caucasoid, and Negro, doing dimly understood things singly and to each other. They date from a possible 8000 B.C. until recent times, and exhibit a continuity of art styles from one end of the continent to the other. Four books, two written by Leo Frobenius and one each edited by Roger Summers and Hans-Georg Bandi, concentrate on the description and interpretation of these rock pictures. The books are **Madsimu Dsangara, Südafrikanische Felsbilderchronik**, by Leo Frobenius, with a summary by H. L. Prager [Akademische Druck, Graz, Austria, 1962 (first published in 1932). 79 pp. Illus. Plates. $28.50]; **Ekade Ektab, Die Felsbilder Fezzans**, by Leo Frobenius [Akademische Druck, Graz, Austria, 1963 (first published in 1937). 104 pp. Illus. Plates]; **The Art of the Stone Age**, edited by Hans-Georg Bandi and translated by Ann E. Keep [Crown, New York, 1961. 241 pp. Illus. $6.95]; and **Prehistoric Rock Art of the Federation of Rhodesia and Nyasaland**, edited by Roger Summers [National Publications Trust, Rhodesia and Nyasaland, 1959; Humanities Press, New York, 1961. 287 pp. Illus. $28.50].

The Bandi volume also includes articles on western European and aboriginal Australian art. The Frobenius volumes are reprints of the second and third of the author's three monumental works—*Hadschara Maktuba, Ekade Ektab*, and *Madsimu Dsangara.*

During the years between 1912 and 1935, Leo Frobenius, a pioneer in this field, worked with teams of helpers from North to South Africa, pursuing the idea that the styles of these paintings and engravings stemmed from two outside sources: the Paleolithic arts of Europe, passing through Northwest Africa, and ancient western Asiatic art forms, moving through Egypt and the Red Sea coast into the northwestern Sahara. According to his idea the combination was carried down the East African corridor to South Africa.

In Western Europe two styles of prehistoric rock art are recognized: (i) the *Franco-Cantabrian*, which includes the famous cave paintings of Southern France and Northern Spain, a subject that is more fully covered in my review of Graziosi's *Paleolithic Art* [*Science* **133**, 74 (1960)], and (ii) the *Levantine* of Eastern Spain, which are monochromes on out-of-door rock walls. Although Frobenius considered the two styles contemporary, we know that the Franco-Cantabrian was the older, and that the Levantine was mostly, if not entirely, post-Pleistocene; indeed, some of the Levantine may have been Neolithic. In the Bandi volume, Breuil and Berger-Kirchner ("Franco-Cantabrian rock art," pp. 14 to 71) describe the former, and Bandi ("The rock art of the Spanish Levant," pp. 72 to 98) the latter style.

Franco-Cantabrian rock art is limited to the Dordogne center, the French Pyrennes, and North Spain, with a few isolated examples in Sicily and Andalusia. This art requires limestone, and for paintings, breathless chambers of perennially even temperature. Breuil divides the paintings into two major periods, the Aurignacian-Perigordian, and the Solutrian-Magdalenian. The first begins with the depiction of hands on walls and "macaroni" or jumbles of lines perhaps drawn with all five fingers at once, after which artists used burins to make simple outlines of single animals; later on these artists, working in polychrome, represented animals with their bodies in profile but with their heads in full face (twisted perspective) and also made geometrical drawings hopefully called tectiforms.

There are no certain Solutrian paintings. The Magdalenian art leaps out without antecedent and goes through its private cycle, beginning with thin black outlines, which then widen and are filled in with polychrome. Having reached its peak at Lascaux, it degenerates, by the end of the Pleistocene, into schematic line figures.

The Spanish Levantine paintings, preserved in the open by the dryness of the air, may have begun about the time the Magdalenian ended and lasted until after 5000 B.C. Red, black, or brown pigments were applied to rock surfaces with a sticky medium like blood, honey, or sap. The artist drew an outline and then filled it in, sometimes with stripes.

The animals are small and accurately rendered. The human figures fall into four styles which are also seen in Africa: *alpera* (figures that are realistic); *cestosomatic* (with long bodies, round heads, triangular chests, narrow hips, and fairly thick legs); *pachypodous* (with short bodies, large heads in profile, short, slender torsos, and long, thick legs); and *nematomorphous* (figures that consist of highly stylized thin lines). No time sequence for these four styles has been determined, because they occur separately in different regions and do not overlap.

These Levantine paintings and compositions, depicting hunts, battles, executions, honey gathering, women dancing, and animal-headed men. They show elaborate headdresses, bows and arrows, skin and basketry containers, ropes and straps for climbing, and dogs. But the dog is the only domestic animal shown and there are no boats. The men are mostly naked, but one is wearing breeches, another a cape, and several

The reviewer was, until recently, curator of ethnology and professor of anthropology at the University of Pennsylvania and is the author of several books, of which the most recent is *Origin of Races* (Knopf, New York, 1962).

others loin cloths. Caps with earflaps, kneebands, and arm bands are shown; some men wear their hair short, others to the shoulders, some have beards or mustaches. The women wear bell-shaped skirts with the upper body bare, armlets and armbands for decoration, and leave their hair hanging loosely.

Frobenius saw African connections in both styles, for the twisted perspective is also found in the earliest African rock art and the Levantine style has parallels in many parts of Africa. If one did not give rise to the other, they may have come from a common source. This subject needs fresh review since rock art has also been recently discovered in the Arabian Peninsula, Southeast Iran, and the Ural Mountains. A recent paper by Henry Field, "Pictographs from Khashm Dalqan, Saudi Arabia" [*Man*, No. 144, 88 (1962)], contains a bibliography of Arabian sites, to which may be added a personal communication from Gordon H. Browne on Yemen pictographs. V. Chienova [*The Current Digest of the Soviet Press* **13**, No. 39, 17 (1961); mentioned in *The Interamerican* **8**, No. 1, 1 (1961)] reported the Ural paintings. All are undated, but styles comparable to both Spanish and African art may be recognized in the newly found, very old Neolithic of Turkey.

Frobenius wrote too soon to have known that Caucasoid invaders, the Mouillians, settled North Africa at the end of the Pleistocene, and that another wave of the same race, the Capsians, followed them a few millennia later. While the Mouillians could conceivably have come from either Europe or West Asia, the Capsians certainly were Asiatic. Nor did he know that two skulls, which I believe are proto-Bushman, would be found (in 1961 and 1962) in a barium mine in Morocco [Emile Ennouchi, "Un crâne d'Homme ancien au Jebel Irhoud (Maroc)," in *CRAS* **154**, 4330 (1962); "Un Néanderthalien: l'Homme du Jebel Irhoud (Maroc)," in *L'Anthropologie* **66**, No. 3-4, 279 (1962). I found the second skull on 23 December 1962. Both specimens are being studied in the laboratory of the Institut de Paleontologie Humaine, Paris.] And Frobenius probably did not know that the South African Bushmen's stone tool industry, the Wilton, was simply a derivative of the Capsian, which had come from Asia.

In *Ekade Ektab* Frobenius stated that in Africa successive cultures do not simply replace one another, but push each other aside until the older and weaker ones end up in the corners of the continent, where they continue to coexist in time with their successors in space. He thus explained the fact that only a little more than a century ago the Bushmen were painting the same kind of pictures created in the Sahara millennia earlier. He also expressed the opinion that art is a finer key to the essence of a culture than the stone tools of those who made it or their skeletons.

Frobenius identified two principal styles comparable, in a sense, to the Franco-Cantabrian and Spanish Levantine. The first and oldest is the Bubalus style, characteristically depicting an extinct buffalo drawn in profile with only one of each pair of legs shown, and head and tail twisted around full face and full tail. Other animals shown are mostly elephants and rhinos. This style is centered in the northern Sahara of southern Oran Province and neighboring southeastern Morocco, just south of the Atlas Mountains. The second is his Domestic Animal style, centered in the Fezzan and Tibesti of southern Libya and the northern part of the Republic of Chad. This style he attributes to influences from Egypt and Western Asia.

Frobenius' main job in *Ekade Ektab* was to document his own work in the five galleries of the western Murzuk Plateau of Libya—in Tel Issaghen I and II, and in Habeter I, II, and III, massive blocks of sandstone and marl, 150 to 300 feet high, looking from afar like skyscrapers. They stand at the foot of once well-watered mountains, and at the edge of an ancient lake, prime country for both hunting and grazing as the Sahara began to dry out. Both hunting and grazing are dramatically depicted on these titanic walls, particularly in concavities that are relatively sheltered from wind and blown sand.

The older pictures were made by pecking outlines, then grinding the stone between the pecked holes into U-shaped grooves, and then modeling the surface inside the outline by polishing or, where found in very sheltered spots, by modeling the surface with clay. The final step was painting, most of which has weathered off. In the later pictures the grooves are triangular rather than U-shaped, and the surface to be painted merely smoothed by polishing rather than modeled.

The older pictures, which occupy the best places in the galleries, represent single animals boldly but not always carefully drawn. The later ones, in places that are less favorable for viewing, are smaller, more accurately drawn, and form intricate compositions, with animal and human figures set in landscapes which show rocks and water holes. In a picture of a herd of cattle, only the lead cow is drawn in full detail, and parts of the others stick out behind it. One bull has a circular figure that represents either a solar disc or a hunting net between its horns; this is a familiar Egyptian and Libyan motif.

Human beings are shown either as small, pecked, crude figures, or as large well-drawn ones; the latter go with the Domestical Animal style only. Some of the men are "steering" cattle by holding their tails, others are carrying bundles on their heads and backs, and in one picture six men are carrying a long bundle that looks like either a boat or a corpse wrapped in skins.

Many pictures show people dancing, with the men holding bows and arrows at arms length, and their legs stretched in the flying leap position familiar in the Spanish Levantine art and elsewhere. Other people are shown copulating in positions unfamiliar to most Europeans but not to field anthropologists. In some pictures long lines connect the genitals of men and women, as if to depict a family tree. Some of the men in these pictures wear animal masks, with ass and jackal heads commonest. Some resemble the Egyptian cat-god Bes, with a curled tail and genitalia reaching the ground.

Frobenius considered the Fezzan-Tibesti region the cultural nucleus of the post-Pleistocene Saharan region, and he drew many parallels between its art and the styles of other regions. Although he was vague about chronology, his feeling for the importance of these works of art in the cultures of those who created them and in the history of Africa and the lands beyond was both intuitive and on the whole correct.

In his 53 pages of the Bandi volume ("The rock art of the Maghreb and Sahara," pp. 99 to 152), Lhote reviews the history of the discovery of Saharan rock art, and divides all the pictures into four periods: (i) The Bubalus period as in *Ekade Ektab*; (ii) the Domestic Cattle period, which includes also pictures of elephants, rhinos, and ostrich, but with no Bubalus; (iii) the Domestic Horse period, subdivided into depictions of men driving chariots and carts drawn by horses and cattle, and then those of mounted riders; and (iv)

the Camel period. Elephants were still shown in the Horse period, although other animals, including the rhino, hippo, and roan antelope, were not, and only the modern desert fauna were shown in the Camel period.

The round-headed figures that look like space men are found only in the Tassili. Lhote dates them at just before the Domestic Cattle period, or in its earliest stages. Because round heads are sometimes seen in Negro art, he thinks that they were Negroes.

On the basis of degrees of patination and the more or less reliable association of stone implements, Lhote sets the beginning of the Bubalus style at about 7000 B.C., and he quotes otherwise unidentified carbon-14 dates of 3550 B.C. and 2450 B.C. for the Domestic Cattle period, which he thinks began about 4000 B.C. This, he says, lasted until about 1200 B.C. when, according to Lhote, horses and chariots introduced by the Hyksos took over. Herodotus later described the Libyan chariots, and Libyan charioteers even served in Hannibal's army, but before that time horses had already begun to be ridden in the Sahara. Camels followed, after having been brought to Egypt by the Persians in the 5th century B.C.

The Bubalus style, as Frobenius said, resembles the Franco-Cantabrian in showing large, isolated animals in twisted perspective, and the Domestic Animal and Horse styles resemble the Spanish Levantine in showing lively compositions, people with single or double wedge-shaped bodies, flying leaps, and in some, details of dress and ornamentation, but Lhote, supported by his chronology, derives at least some of these traits from Minoan influence along the Libyan coast.

Lhote's work suffers from a little translation trouble. *Marrakech* is used for *Morocco, tame* for *domestic* dog, *equine antelope* for *roan antelope*, and the word *crucible*, possibly meaning *mortar*, is used in a Neolithic context. Lhote tantalizingly refers to Neolithic Negro skeletons from South Hoggar, Tanezrouft, and Tenéré, without quoting references. Although he disparages Frobenius' work on chronological grounds (Frobenius "was . . . attempting to juggle with two packs of cards at once," p. 113), he falls into a trap which Frobenius adroitly avoided, that of making unwarranted racial identifications from tenuous inferential evidence. In addition to the Tassili interpretation he feels that the persistence of some of the Saharan rock-art motifs in modern Negro art means that the Saharan art as a whole was of Negro workmanship and inspiration, and indeed that it sired the art of Ancient Egypt.

Six hundred miles southeast of the Tibesti stand the Ennedi highlands, with more rock art of both kinds (Peter Fuchs, *Die Völker der Südost-Sahara*, Braumüller, Vienna, 1962), and an equal distance to the east of this plateau rises the Ethiopian mountain wall, where and beyond which there are more (J. Desmond Clark, *The Prehistoric Cultures on the Horn of Africa*, Cambridge University Press, Cambridge, England, 1954). From the Horn of Africa southwestward to the shores of Lake Rudolf the rock-art line continues, in a trickle, to Tanganyika, and thence to Northern Rhodesia and Nyasaland and onward to the pictorially rich regions of Southern Rhodesia and South Africa. As Desmond Clark points out in "The rock paintings of Northern Rhodesia and Nyasaland" (in the Summers volume, pp. 163 to 220), the relative abundance of this art is a function of the availability of suitable rock surfaces and of the extent to which the various regions have been searched for this purpose.

The rock art of the two states that he surveys includes not only animal and human figures, in previously described styles, but also many geometric designs of unknown origin and significance, in the form of the letter U, singly and in series, grids, and checkerboards reminiscent of the magic squares in Arabic amulets.

In Level III of Natchikufu Cave he found an exfoliated piece of painted granite dated by associated objects at the 16th century, the time the rock fell off, not when it was painted. He believes that painting may have begun there as early as 4000 B.C. but that no surviving art object is older than the first millenium A.D. Two Natchikufu III skeletons are said to be part Bushman [L. H. Wells, "Late Stone Age human types in Central Africa," in *Proceedings, 3rd Panafrican Congress on Prehistory*, Chatto and Windus, London (1957), pp. 183 to 185], and according to the local inhabitants, the paintings were made by the Bakafula, small-statured hunters and honey collectors, who used poisoned arrows, and survived as late as A.D. 1800.

With about 1000 paintings and 17 engravings, Southern Rhodesia has ten times as many as Northern Rhodesia, and compares well with the much larger area of South Africa, which has 1600 recorded paintings and 350 engravings. The relative abundance seen as one moves southward reflects not only the number of available rock surfaces but also the fact that the farther south one goes the later the paintings were made, and the fewer lost by weathering and exfoliation.

In her "Rock paintings of Mashonaland" (in the Summers volume, pp. 3 to 111), Elizabeth Goodall covers the paintings of the hills southeast of Salisbury, where the superposition of from 3 to 15 layers helps establish the sequence of styles. Oldest are pictures of single large animals in outline—elephants, both black and white rhinos, buffalo, and large antelope. Painted over them are mostly scenes showing compositions of many smaller pictures of mammals, birds, reptiles, rocks, trees, edible roots, representations of water, and people.

The earliest animals are wild, representing the living fauna, except for a "mythical" beast looking surprisingly like a combination between an elephant and a stegosaurus, with an arched back topped by a crenellated crest, a long neck, long snout, a tasseled tail, and protuberances hanging from the belly which Goodall calls "mutilated legs" (only two legs are shown) but which might be called axillary udders, and genitals. Some of the later pictures show cattle. The human figures seem to represent three races—Bushman, Caucasoid, and Negro.

Some of the scenes show various techniques of hunting, including stalking with baboon masks and driving an antelope into a pile of rocks where his legs get caught in cracks. Also there are many wounded animals with darts dangling, dead ones on their backs, and butchering scenes. Some men are wearing crocodile and other masks, and there are many burial scenes. Rain is shown by white dots, rain or lightning by single lines. A sky god urinates on people below, and there is a giant water-snake with two heads. Men and women are tied together with lines between their genitals, as in the Sahara. The people herding cattle are long legged and tall, yet with Bushman-like buttocks. The pictures of the Negroes seem to be late.

C. K. Cooke, in "The rock art of Matabeleland" (in the Summers volume, pp. 112 to 162), describe a similar art from the great granite boulders near Bulawayo. He finds five successive styles, the first four he equates with

three stages of the Wilton stone tool industry. The fourth of these is historic, from the time of the Bantu invasions of the period between A.D. 1450 and A.D. 1650; they show battle scenes. The fifth style, which is decadent, dates from about 1820 until the present and consists of clumsy copies, mostly by Bantu herdsmen, of earlier works.

For the rock art of South Africa itself we return to Frobenius in his *Madsimu Dzangara* (Pictures of the Forgotten Ones). Working without chronology and disregarding artifacts, Frobenius concentrated on styles. He finds two, the so-called Wedge style of the Transvaal and adjacent parts of Southern Rhodesia and the South African style proper, which extends to the Cape.

The Wedge style, also noted by Goodall and Cooke, is an elegant and delicate one reminiscent of some of the finer work of the Domestic Animal period of the Sahara. The name *wedge* is used because the torsos of the human figures are triangular. The artist filled in the wedge by applying thin stripes of red next to each other, working from right to left, adding the outline last. In some cases white dots or stipples were added over the stripes, and such dots were also used separately, apparently to indicate rain. The torso is shown front on, the heads and faces in profile, as in Ancient Egypt. Features are conventional, limbs spindly. Human heads show wigs, animal masks, or headdresses, or they are only dots, and sometimes limbs are missing. Animals are few and lifeless; most animals shown in these pictures were painted over them later. These wedge-style pictures are mostly landscapes, with granite boulders, plants, trees, and lakes.

The principal theme of these compositions is death and funeral rites. Bodies are wrapped in skins, with masks, ornaments, funeral gifts, sacrificial animals, rocks of the burial place, and a tree from which embalming oil is drawn. According to Frobenius' interpretation, which is based on local mythology, some show the holy lake, the source of all life and of the afterworld. Others show the brother and sister who married and became the first rulers, and the brother walking in the holy lake. In a rain ceremony a princess is buried under a tree in time of drought, the tree grows to the sky, and a weather snake comes out of the leaves to transform himself into clouds and rain.

Frobenius traces the origin of these pictures to the Monomotapa Empire of the 16th century, and beyond it to the legendary and greater empire of the Moon Kings, through the legends of the Mwutesi, their supposed descendants. He traces their culture back to Egyptian and Western Asiatic influences by way of the "Southern Erythryote" culture first seen by the Portugese.

The South African style resembles the Domestic Animal style without the domestic animals. It employs many techniques from simple silhouettes to shaded, foreshortened polychromes. The animals are lively and realistic, the people engaged in hunting and in processions. Some of the human figures are painted in stripes, like those of the Wedge style, but the stripes go from left to right. This is proper Bushman art, which was abandoned when the Bushmen were forced onto the rockless desert.

In "The rock art of South Africa" (in the Bandi volume, pp. 153 to 203), Erik Holm supplies the mythological interpretation of the South African art which Frobenius did not. He sees in the paintings the Bushman's creator, Mantis, depicted either as an insect or an eland; the sky; and the stars which are dead animals and people awaiting reincarnation. Short legs on an animal show the waxing moon, and when the moon is full the legs are long. He sees the representation of a legend in which the rhinoceros bursts the spleen of another animal with his horn and scatters the bile. This same scene he also identifies in a Lascaux painting. Foreshortening, he says, is done not as an art effect but to illustrate a myth. Rain myths are shown in the form of an elephant, who becomes a great black cloud, and water falls from him, just as he squirts it from his trunk.

These pictures, says Holm, are not totems for the Bushmen have none. Nor were they painted for the material purpose of getting game (comparable to commercial art), at least in a conscious sense, but they show instead the essential unity of man and animals in the universe and their interchangeability. They were drawn to express the artist's emotion in terms of myths as vehicles. The Bushmen painted them over and over, "killed" them, and renewed them. The animal headed figures are neither shamans nor sorcerers, they are gods. Plump women were not drawn for fertility but through sheer exuberance at the blessings of life, for fat means food. "Idyllic animal scenes," he remarks, "suggest an Elysian existence in the midst of nature . . . ," and in this Holm makes wonderful sense.

Andreas Lommel's "Rock art of Australia" (in the Bandi volume, pp. 235 to 301) deserves a review of itself apart from this African symposium. In it he supports Erik Holm's interpretations through the knowledge of what actually happens when a hunting people create rock paintings. They represent their ideas of creation; of man's relationship to the landscape, to other animals, and to the endlessness of time and the permanence of timeless events. They paint over their rock faces again and again, seeking to reestablish and renew man's wholeness with the universe and stand as monuments to the lost wisdom of the ancient hunters.

Biostratigraphy

Principles of Zoological Micropalaeontology. vol. 1. Vladimír Porkorný. Translated from the German edition (Berlin, 1958) by K. A. Allen. John W. Neale, Ed. Pergamon, London; Macmillan, New York, 1963. xvi + 652 pp. Illus. $17.50.

The translation of the 1954 edition of *Základy Zoologické Mikropaleontologie* into an expanded two-volume German edition in 1958 was acclaimed the world over as a major contribution to the field of biostratigraphy. Now comes the English version of the first volume of the Pokorný texts, but unfortunately only minor alterations were made in translating the German revision into English.

Discussion of the Foraminifera, those protozoans so helpful in dating and correlating sedimentary formations, still comprises a considerable portion (308 pages) of the new publication; however, it is regrettable that the author failed to include references to several important large and small genera and an up-to-date bibliography of the order. As in previous editions, it is puzzling to note that no mention is made of the classifications of Cushman, Galloway, and Glaessner, whose arrangements have been compared and contrasted by most systematists. Likewise, inclusion of recent studies on other groups of fossils which are described in the Czechoslovakian and German editions, particularly the Radiolaria, Thecamoebea, Tintinnina, Chitinozoa, and Hystrichospheres, would have enhanced immensely the