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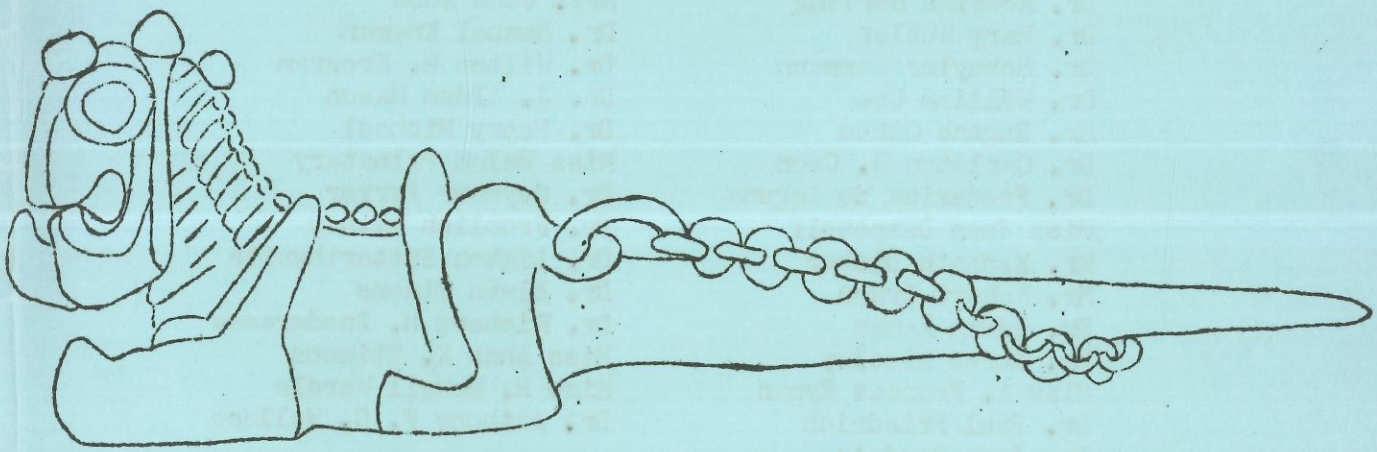

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PHILADELPHIA ANTHROPOLOGICAL SOCIETY BULLETIN

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Contents

EDITORIAL

This issue of The Bulletin presents a continued effort to balance aesthetic wants with pecuniary needs. As part of a long-range program started last year, we are still exploring various formats. Present information suggests something along the lines of a Yearbook. This idea will be expanded more fully in the next issue.

We are still dissatisfied with the pace at which our work proceeds. Most of our energies are expended in soliciting articles and in the actual labor of printing each issue. Countless hours are lost over minutia, impossible to prepare for in advance. However, until such time as we can stipulate how much it will cost to support a professional journal, we will have to continue with the current "Rube Goldberg" operation.

In order that our readers may better understand what it is we are attempting to do, we refer you to last year's editorials. Complete sets of Volume XIII are available. Suggestions and comments are welcomed and may be offered to any of the personnel listed on the masthead. Or, you may reach us by correspondence.

Articles and other material should be submitted to the Philadelphia Anthropological Society Bulletin, Box 14, Bennett Hall, Philadelphia 4, Pennsylvania. Contributions should be typed or legibly written, carefully edited, and no longer than 1000 words.

TECHNIQUES PROGRAM OF THE UNIVERSITY MUSEUM

Froelich Rainey

A grant from the National Science Foundation has now made it possible for the Museum to begin serious research with new archaeological techniques stemming from recent developments in atomic physics, electronics and chemistry. Mr. Richard Linington, a physicist from Oxford, has joined the staff to work with Elizabeth Ralph, Henry Michaels, and Eric Parkinson. Mr. Linington brings two years of experience with the archaeological laboratories at Oxford and also field research in England and in France utilizing resistivity equipment and the Proton magnetometer. He was also trained in the RAF on radar operation and design.

There can be little doubt that Willard Libby's application of radio carbon to archaeological dating has had more effect upon the whole field of archaeology than any other discovery in recent years. Moreover, this application of atomic physics has opened a whole new field for precise dating in the fields of archaeology, paleontology, geology. Many of us are optimistic that other radioactive methods will be developed to cover the whole range of prehistoric archaeology. But one of the most significant results of this application has been to encourage the exploration of other new techniques in physics, chemistry, and electronics, which can be utilized in archaeology, both for dating and other uses.

Essentially, research now being undertaken by the Museum falls under three major headings.

Dating Techniques.

The radio carbon laboratory, operated by the Physics Department and the University Museum during the past eight years, has now expanded its program to include a study of suspected fluctuations in cosmic ray intensity which is important to nuclear physics in general as well as to the radio carbon method in archaeology. This study involves an attempt to extend our knowledge of absolute dates by the tree-ring method into the age of the early dynasties in Egypt and thus make it possible to check radio carbon dates for this period and the degree of fluctuation in cosmic radiation. At present archaeological dates for the early dynasties in Egypt fail to correspond with radio carbon dates. The difference amounts to some five or six hundred years. There are good indications that Lebanon cedar wood, in Egypt, can be utilized to build up a tree-ring record, which can be either linked with living trees or with Egyptian archaeological remains dating later than 1850 B. C. where we have a firm correlation with our own calendar. This dendrochronological research we expect can also be extended to Anatolia where we have numerous wooden beams from the tombs at Gordion. At the present time successful dendrochronology is essentially limited to southwestern United States and the Arctic. The ultimate objective in this research is the improvement of the radio carbon method. Archaeologists are now becoming aware that there are many technical problems connected with the C-14 dating method and that many of our published dates so far are erroneous.

Elizabeth Ralph is also working with the thermoluminescence method for dating pottery and other fired objects. Traces of uranium and thorium are present in clays and the alpha particles emitted by these radioactive elements bombard the other constituents of the clays and raise electrons to metastable levels. When the clays are fired these electrons return to their original states with the emission of photons. This is then the starting point of excited electron accumulation. When a fragment of pottery is reheated in testing, photons are detected, and the longer ago the original firing, the greater the light intensity. With an alpha detector the rate of bombardment can also be measured and with both known, we believe it is possible to work out a time scale for dating pottery. Work on this method is also continuing at the Universities of Wisconsin and California. So far experiments here confirm that both the photons and the alphas in 5000 year old pottery are detectable.

Other dating methods having to do with neutron bombardment and measurements of thermo remanent magnetism are being explored in England and in France so that for the time being we in Philadelphia do not expect to proceed with direct research in these fields. The Potassium-Argon method for dating crystalline rocks up to one million years of age is also being developed in other laboratories and it is not a part of our program. However, Mr. Linington and Miss Ralph are compiling all the available information on such research on dating methods so that this will be available for students of archaeology in the University of Pennsylvania.

Underground Exploration.

Archaeological laboratories in England and in Italy have been working for some years with resistivity equipment, originally used by geologists for geophysical prospecting. This is a method of measuring electrical conductivity of soils with the purpose of discovering anomalies below the surface of the ground which may indicate archaeological remains of some sort. For example, in our recent experiments carried out in the region of Vera Cruz, Mexico, we were able to locate buried stone monuments, distinct culture-bearing strata, and burial urns. The method relies upon the fact that differing densities of soil, differing soil humidity, burned areas beneath the surface, and other peculiarities in sub-soil can be detected by measuring the conductivity of soil at different depths.

Today there are many types of resistivity apparatus manufactured for commercial uses, such as charting the sub surface strata along the right away for new highways. The Museum now has an instrument manufactured in England, another manufactured in the United States, and a third and more simple instrument on order from Germany. All three instruments will be tested at Tikal during the winter months.

The most satisfactory results with this type of underground explorer have been attained by British archaeologists at sites in England and in France, and by Mr. C. M. Lerici at Etruscan sites in Italy. By measuring sub soil electrical conductivity, in a grid pattern at prehistoric sites in England it has been possible to lay out without excavation ancient walls, moats, house pits and other archaeological remains. In Italy Lerici

has now located hundreds of Etruscan tombs by this method and he is now expanding his experiments to other types of archaeological sites in the Peninsula. From our own experience with this equipment we conclude that it is often misleading and too slow for large scale underground exploration. However, Linington is considering a new system of utilizing the equipment which may speed up exploration and we may also find that the new German instrument is more efficient.

More rapid underground exploration is achieved with the Proton-Magnetometer, a device which measures the intensity of the magnetic field at an archaeological site making it possible to detect archaeological features in the soil. There is a concern in Oxford, England, which is now manufacturing light, portable Proton-Magnetometers specifically for archaeological use. One of these should be delivered to us in January and this also will be tested at Tikal during the winter. The disadvantage of this instrument is that its cost ($2000) is several times as much as that of the resistance meter. The new German resistance apparatus sells for under $100.

We all believe that the whole method of underground exploration with electronic instruments is in its infancy and that much more efficient instruments can be developed, particularly since innumerable electronic research laboratories are now operating all over the western world. We seem to be on the threshold of startling breakthroughs in electronics. With this in mind, we have been discussing the whole field of underground exploration for archaeology with engineers of the Sun Oil Company and the Texas Instruments Company. We learn that there are various methods for oil prospecting already in being which might be adapted to archaeology and there are other techniques not yet developed commercially, but in the offing. Our problem here is to initiate a working relationship between the commercial electronic laboratories and our own center for research in these techniques. Fortunately, the Texas Instruments Company, which is largely responsible for the invention of geophysical instruments used around the world has agreed to proceed with the development of a new instrument for archaeological purposes. At the moment, it looks as if they will begin with some seismic system adapted to our peculiar uses, but where this research will lead during this winter we can now only guess. Our ultimate goal is a small, portable instrument which can be carried by a single individual and which can detect various anomalies in sub surface soils without the tedious process of setting a series of pins in the ground each time you make a reading.

During this first year of operations under the National Science Foundation grant we realize that a very considerable experimentation in the field is necessary. We expect to be testing certain instruments in the southwestern part of the United States with the engineers of the Texas Instruments Company. Also, Mr. Linington will undertake a systematic survey of a certain section of the Tikal site some time in February. By early summer we expect to join up with Mr. Lerici and his staff in Italy to experiment with different instruments at Etruscan sites, north of Rome, and possibly with other sites in the south of Italy. This summer's research will combine the experience of the British, Italian and American

investigators. At the present time it is obvious that the British and Italians are much more advanced than we are in this country.

Identification and Preservation Techniques.

In most of the excavations of the University Museum there are serious problems involved in preserving perishable materials, such as ancient wooden objects, disintegrating metals, fabrics, paints and so forth. There are many recent advances in the chemical field, which are applicable. Synthetic resins are being used as protective coverings, or adhesives. Methacrylates are used as imbedding media for exhibition purposes and for consolidating archaeological materials found in situ. Ion-exchange resins are being used to remove corrosion from metals. Epoxy resins are used as bonding agents and as structural material in architectural preservation. There are other chemicals used in conjunction with freeze drying in treating water-logged wood, a relatively new technique. There are also microchemical methods for identifying pigments and the remains of metal.

In the laboratory for techniques, Mr. Linington is now experimenting with a back-scattering device, utilizing radioactive isotopes, which may make it possible to identify certain pottery slips and thereby recognize the similarity or the direct connection between pottery found at widely separated sites. We have also recently installed a high frequency sonic device for cleaning fragile objects from excavations. In the future we will attempt to run down and record various new techniques in chemistry and physics which may be applied in the identification and preservation of materials found in our excavations. All of this information, of course, will be available to other archaeological institutions and museums. Again the basic objective is to discover what is happening in industrial or commercial fields and to apply this specifically to archaeology.

Although there is much concern among archaeologists with methods and techniques in archaeology at the present time, we believe that there is too much concern with simple field techniques and too little knowledge of what physical scientists are doing these days. A case in point is radio carbon. Too few archaeologists really understand the complications and limitations of the radio carbon dating technique. Because of this many erroneous dates are now in the archaeological literature. In like manner, we diggers are too often prone to accept scientific data applied to archaeology without knowledgeable scepticism. This is an age of startling new techniques in atomic physics, chemistry and electronics. The possible applications to archaeology are unlimited, but I am sure that most diggers must understand the possibilities and limitations of these techniques before they become standard operating procedure in archaeology. The new laboratory at the Museum is intended both to experiment and to teach. We hope that within another couple of years we shall be in a position here to instruct University of Pennsylvania students in a new kind of scientific archaeology which will make it possible to arrive at more reasonable interpretations of the past.

GEOPHYSICAL PROSPECTING IN SOUTH AMERICAN ARCHAEOLOGY

Alfred Kidder II

For certain areas in South America devices for sub-surface archaeological prospecting hold considerable promise. Probably the best results will be produced by an apparatus that measures variations in density, rather than resistivity to electric current, although I believe that the resistivity measuring machine currently available would serve quite well in some places where local variations in underground moisture might be expected. Such conditions could apply in the case of shaft graves, of the kind found in Colombia, and perhaps graves containing tremendous amounts of pottery such as those found at Coclé in Panama.

The most interesting application of any suitable techniques that can be developed, however, lies in the areas of the more complex civilizations of the Andes.

In Peru and Bolivia there are thousands of sites of very considerable size. Many of them are located in the highlands, where construction was basically stone. Very little controlled excavation has been done in the highland basins of this most important region, and nearly all digging has been on a relatively small scale.

Two sites with which I am personally well acquainted serve as excellent examples of the potential of devices that could accurately delineate sub-surface structures.

At Tiahuanaco, in highland Bolivia, the site has been so robbed of stone for church construction and railroad ballast that little remains to be seen on the surface. Excavation, until lately limited to relatively small pits, has shown that there is still a great deal of stone work still under ground. A survey by means of a prospecting device would undoubtedly reveal a network of drainage channels, foundations, stone floors, buried monoliths and other features, giving us a picture of the whole layout of this still quite puzzling site. Intelligent, planned excavation would then be much easier and less costly.

The same is true of a number of other sites in the Titicaca Basin, in which very little stone is visible on the surface, but in which there is reason to believe that the walls of rather complex buildings are to be found at no great depth.

At Chiripa, also in Bolivia, near Lake Titicaca, a circle of 15 stone and adobe houses surrounds a central court. This village can only be mapped very approximately without a major campaign of excavation, but an accurate plan should be possible with a prospecting apparatus.

The highlands seem to offer, therefore, the best conditions for the use of devices now in use or under development. On the coast, with its

thousands of sites almost entirely constructed of adobe, there is usually less of a problem in mapping, since preservation is good, and late to sometimes quite early villages and towns can often be well recorded by conventional means. Many early sites, or early parts of sites, however, are undoubtedly not to be seen, and a number of mounds, such as those of the Gallinago period in Viru Valley probably contain complexes of rooms in what appear as feature-less piles of earth. With experimentation in sites like Gallinago, where controlled excavation has been done, it should not take long to learn the capacity of the different types of prospecting apparatus for revealing sub-surface adobe structures. Cemeteries might well be located in the same manner.

In summary, the Andean area, both coast and highland, by reason of the permanent buildings used by the Indians, offers the most fruitful field for geophysical prospecting in South America. This is not to say that such methods would be useless in the Tropical Forest or the lowlands further south, but it is safe to say that in their present state of development they would be of considerably less assistance to the archaeologist than in those areas maintained above where controls are immediately available.

TO NIGERIA !

A. Irving Hallowell

It came as a complete surprise to me when, on October 24th, I received a cable from the Secretary to the Prime Minister of the Federation of Nigeria (Alhaji Sir Abubakar Tafawa Balewa; see Time, Dec. 5, 1960) inviting me to attend the installation of Dr. Nnamdi Azikiwe (pronounced A-zik-way) as Governor-General and Commander-in-Chief on November 16th. I soon discovered that President Harnwell and Dr. William Fontaine of the Department of Philosophy also had been invited as guests of the Government. The link between Dr. Azikiwe and Pennsylvania dates back more than a quarter of a century. In 1933 he received a Masters Degree in Anthropology. In fact, as a young man, he spent nine years in the United States, graduating from Lincoln University before entering our Graduate School. He and Dr. Fontaine were classmates at Lincoln and began graduate work at Pennsylvania at the same time. Even at this early date "Zik" was interested in Political Science. He taught this subject at Lincoln (1931-34) and had published scholarly articles in the Journal of Negro History before receiving his Masters Degree in Anthropology. (Later he received honorary doctors degrees from Lincoln, Storer College, Howard University and Michigan State University.) Returning to Africa, he became an active proponent of Nigerian nationalism which, eventually, with the support of the British Government, led to the smooth transition to independence which occurred on October 1, 1960, and membership in the Commonwealth. A nation of 36 million people, occupying an area as large as the United Kingdom plus the whole of France and half of Italy, the Federation of Nigeria has been characterized as the colossus of Africa, the biggest Negro country in the world.

President Harnwell had other commitments which made it impossible for him to go to Lagos, so Dr. Fontaine and I represented the University. We carried with us a hand-lettered scroll, signed by the President and Secretary, saluating His Excellency the new Governor-General. It was formally presented on November 20th and read in part--"Your contribution to the cause of freedom--justly hailed throughout the world--is a matter of special joy and pride to the Faculties, Officers and Alumni of the institution founded by Benjamin Franklin which happily counts you among its most illustrious graduates." The accommodations provided those of us who stayed at the thoroughly modern and newly completed Federal Palace Hotel, where air-conditioned rooms off-set the tropical climate, where posh indeed. And besides, we were provided with a green State care and a driver.

Lagos, ceded to the British only a century ago, is a port and the federal capital of Nigeria. It is a cosmopolitan city of 350,000 inhabitants which occupies the islands of Lagos, Iddo, and Victoria and adjoining areas of the mainland. New buildings, including a school which my neighbors' children exclaimed was better than theirs when they saw a

picture of it, now give the city a modern appearance since, at the same time, some of the once notorious slum areas have been eliminated. But traditional markets in which everything from charcoal and snails to cloth and jewelry are sold and long-established street-side traders persist. I found wandering in the markets to be a fascinating diversion and I could have spent many hours there. It was possible to talk to almost everyone in English and everyone seemed glad to talk. Some naked children came up to me, not for pennies, but just to squeeze my hand. Bicycles jostle automobiles for space on the roads and all day and even into the night there are people walking everywhere. Women particularly carrying cloth, gourds of palm oil or firewood on their heads, and often with infants straddling the small of their backs, stride along erect with swaying hips. And no demographic survey is needed to demonstrate the immense density of population along this part of the Guinea coast, geographically a part of the equatorial forest zone, with a mean rainfall in Lagos of 72 in. and once part of the region which was known as the White Mans' Grave.

His Excellency invited many of his old American friends to Lagos for the celebration including Dr. Ralph Bunche who likewise represented the United Nations, and Langston Hughes, the well-known poet and writer. Dr. Fontaine knew them all and it was a pleasure for me to meet them as well as Nigerians. Dr. W. E. B. DuBois, now 92 years old and the father of Pan-Africanism was there. It was he who authored the first book on the Negro in Philadelphia, published in 1895 and still to be found on reading lists in Sociology. Among other events, there was a Testimonial Luncheon to their Excellencies, given under the auspices of the Lincoln University Alumni Association, attended by several hundred guests, which was addressed by the Prime Minister, the Leader of the House of Parliament, the Premiers of Eastern and Western Nigeria, the Presidents of Lincoln and Howard University and His Excellency. Dr. Ozuomba Mbadiwe, Minister of Commerce and Industries, and a Lincoln graduate who, in the past has been one of those who fostered scholarship schemes designed to send Nigerian students to America, was Toastmaster. Never have I listened to speeches on any formal occasion which were less dull. The insistent mixture on the part of the speakers of humor and high seriousness I found very attractive. A laugh every other minute is only a slight exaggeration, (cf. Ulli Beier, "Transition Without Tears," Encounter, Oct., 1960, where the role of the traditional Egungun Masqueraders in election campaigns in Western Nigeria is discussed, "Even this most awe-inspiring cult," personifying sacrosant ancesters, "has its light-heartedness," he says.)

Formalities began with the inaugural ceremonies on the morning of November 16th. They were held outdoors at what was formerly a race track and were attended by 100,000 people seated in surrounding grandstands. Nigerian men in their toga-like costumes including some potentates under ceremonial umbreallas and women dressed in cloth and turbans of the most varied and stunning patterns, with Yoruba blue providing the prevailing ground tone, made a colorful scene. They represented a country in which there are 250 ethnic groups and where, in Northern Nigeria, 70% of the population is Muslim and most of the rest pagan. Christians are

almost entirely confined to the two southern provinces. Representatives from other African countries were there too and a few British officials. Tom Mboya, with his well known red, white and blue pill box hat, sat next to Dr. and Mrs. DuBois in front of my, Martin Luther King was not far away, while on my right was E. Washington Rhodes, the owner and editor of the Philadelphia Tribune. His Excellency took as his topic "Respect for Human Dignity" and he closed his address with a quotation from a poem by his old friend Langston Hughes. In the late afternoon there was a large Garden Party on the grounds of the 28 room State House, the Governor-Generals residence, beautifully located on the Marina overlooking the Lagoon. In the evening Dr. Fontaine and I were invited to a small dinner party there which, in addition to their Excellencies and son included the Principal (and his wife) of the newly opened University of Nigeria, the presidents of Howard and Lincoln, Dr. Ralph Bunche, and Langston Hughes. The talk centered on the University of Nigeria, promoted by Dr. Azikiwe and which, located in Eastern Nigeria, not far from the capital, Enugu, differs from University College, Ibadan (founded in 1948 and affiliated with the University of London) in being patterned on American land grant colleges. It opened this year with 300 students but aims to teach agriculture, engineering, science and education to 6,000 students in 10 years. On another evening, a reception was held at the Nigerian National Museum where one found on display a representative collection of Nigerian tribal art, selected pieces from Benin and Ife, and some of the most striking terra cotta figures from Nok, the ancient culture being excavated in the North, which had just been installed by Bernard Fagg, Director of Antiquities. Later the same evening the Honorable Joseph Palmer, the American Ambassador, held open house for the American visitors to Lagos. The following day there was a large State Luncheon in high style and, in the evening, a fine display of National Traditional Dances at the Race Course. These included an exhibition of stilt walking and other acrobatics, but none better than a dancer I saw at a night club who carried a glass of water on a saucer nicely perched on his head. After dropping a handkerchief on the floor, he recovered it with his teeth by stretching himself at full length, then continued his dance without spilling a drop of the water. The special style of dancing at all the night clubs I shall not attempt to describe. It must be seen (but scarcely in the United States) to be fully appreciated!

I did my night clubbing with Dr. and Mrs. John A. Noon. John Noon is his student days a contemporary of Dr. Azikiwe is now in charge of the U.S. Information Service in Lagos and is one of the three Ph.D.'s turned out by our Department who, under the influence of Dr. Heinz Wieschhoff (now at the United Nations) became interested in Africa many years ago. (The others are Dr. William Schwab and Dr. Linvill Watson. The latter, using Ibo informants in this country, since many of them followed the pattern set by "Zik," analyzed certain aspects of the native system of social stratification as influenced by acculturation. At present he is working on a Nigerian handbook for the Department of the Army.) I spent two most enjoyable evenings at the home of Dr. Noon where I met several American Negroes associated with the Information Service, as well as Nigerians. The latter included members of the

contemporary intellectual elite: the novelist Cyprian Ekwensi; Akin Euba, pianist and composer; Ben Enwonwu, sculptor and painter. Anyone interested in contemporary Nigerian art can now consult the recently published Art in Nigeria 1960 by Ulli Beier and read the two fine novels of Chinua Achebe and those by Amos Tutuola as well as Ekwensis' People of the City.

Although I had high hopes at first of seeing more of the country than proved practical, before I left I did make a trip of 400 miles by car through Western Nigeria, visiting Ibadan, the provincial capital (the largest Negro city in Africa with a population of 500,000), Ife and Oshogbo. University College at Ibadan has a beautiful campus, brightened by hibiscus hedges, a fine library of 100,000 volumes housed in a building of modern design, 1,100 students, and a first rate bookstore. In fact, even outside this relatively large urban community there are innumerable bookstores in Western Nigeria. They symbolize the tremendous surge towards education which is so evident everywhere today. The national aim is to raise the literary rate to 85% by 1970. With virtually no schooling available for children as late as 1945, there are now over 3 million children registered in primary schools (see Time, Education, Jan. 2, 1961). At Ife, the legendary Garden of Eden of the Yoruba, I saw the marvelous collection of brass heads and other archaeological material in the Museum as well as the imposing 18 foot monolith (the Staff of Oranmiyan) and the Grove of Ore. Across from the Museum I noticed a sign which read, The Rational Book Shop. Here I found a young man who listens regularly to the Voice of America, amidst a collection of books which surprised me. There was a wide choice of Penguins, other paperbacks, including Shakespeare and, in hard covers, books on physical science, geography, social science, aids to passing examinations in standard subjects, readers for school children, etc. Among the items I bought was a paper back copy of King Solomons Ring by C. Lorenz. Everywhere I went I only had to mention the fact that I had been one of "Ziks" teachers in America in order to have my hand shaken vigorously three or more times!

My most exciting afternoon was spent at Oshogbo, a town of 122,000 people, where the name of William Schwab was an open sesame. He had spent more than a year there almost a decade ago. Bill had urged me to visit his friend the paramount chief, Adenle I. I found the "King" on his cocoa farm and we spent some time there. I was offered oranges to suck and later kola nuts, a ritual gesture of friendship which deeply impressed my driver. (Perhaps he had not previously seen a white man treated in this way.) Returning to the town the Ataoja showed me his shrine, where Bill had witnessed the sacrifice of a ram in a ritual extending over many days and nights and I saw the polychrome wooden figures representing various nature gods (and Adam and Eve) in the temple. I met his chief wife and the two boys who were born when Bill and Anita were living in Oshogbo. Both babies appeared in the early hours of the same morning, although they were the sons of different mothers. Roused twice from sleep Bill was asked to name them at once, and he did: Franklin Roosevelt and Abraham Lincoln! Adenle I represents both the new and the old Africa. In his younger days he was a school teacher and wrote a primer in the Yoruba language, a copy of which he gave me. There is now a school in Oshogbo named for him of which he is very proud. At

the same time he is a confirmed polygynist and his rank necessitates the prostration of everyone who directly approaches him. He is a "king" and he acts like one. He wanted me to make a longer stay and I was sorry I couldn't.

A little knowledge, as the old saying goes, is a dangerous thing, and drawing conclusions from superficial impressions is worse. So I should not venture any over-all impressions of Nigerians when I saw so little of the country in a very short time. However, I was profoundly affected by the immediate responsiveness of all the people I met. When, on our return from Ibadan my driver stopped at his home in a crowded compound where the children ran naked and goats were climbing everywhere and members of his family surrounded me and cried "Welcome," I was deeply moved. I had only seen them for a few minutes two days earlier when we departed for Ibadan. Perhaps I have been associated too long with the more reserved American Indians. At any rate, this episode, and other observations made me aware of a latent and outgoing vitality combined with a moving desire to leap ahead now that independence has been won. To me, Nigeria is really on the march.

THE PHYLOGENETIC STATUS OF OREOPITHECUS BAMBOLII

Oreopithecus bambolii, a catarrhine primate from the Pontian (Lower Pliocene) of Italy, has been a controversial fossil ever since the type specimen, a mandible, was described by Gervais in 1872. It has been variously regarded as a peculiar anthropoid ape, as an aberrant cercopithecoid or Old World monkey, or as a link between these groups. In 1954, Johannes Hürzeler, after studying its dentition, concluded that Oreopithecus is not only a member of the superfamily Hominoidea--which comprises the families Pongidae (anthropoid apes) and Hominidae (man and his immediate forerunners)--but, more specifically, a hominid, and hence belonging to that line of the hominoid radiation which led to man. Recently, parts of more than 50 individuals have been brought together at Basel by Hürzeler. Most of these have been collected by him since 1956 at Baccinello, Italy. The pièce de résistance is the better part of an adult skeleton discovered at Baccinello on August 2, 1958. The present paper is based primarily on my study of the Oreopithecus specimens at Basel during the summers of 1957, 1958, and 1959. This was made possible by generous grants from the Wenner-Gren Foundation for Anthropological Research, New York City. I also am indebted to Dr. Hürzeler for his permission to study these specimens.

Oreopithecus presents an intriguing combination of characters: Cercopithecoid (probably representing primitive or generalized catarrhine features), pongid, hominid, common hominid (found in both hominids and pongids), and sui generis.

The dentition in general is hominoid. Hominid features predominate; but the overall molar structure is essentially sui generis.

The face is short, with heavy supraorbital ridges. The nearly vertical mandibular symphysis has neither chin nor simian shelf. The mental foramen has a high location, as in hominids.

Rib morphology reveals a relatively broad and shallow trunk, as in hominoids. There are 5 lumbar vertebrae in the 1958 specimen, as in man and gibbons. The individual lumbar vertebrae are relatively broad and short; again a hominoid character. They exhibit a well-developed ventral midsagittal keel, however, as in cercopithecoids.

The precise number of sacral vertebrae is not known; but the morphology of two sacral fragments indicates that Oreopithecus possessed more than 3 sacrals.

The intermembral index exceeds 100; and the femur is shorter than the humerus. These are distinct pongid features, characteristic of brachiators; they probably represent an adaptation to a purely arboreal mode of life in the Pontian swamp. The overall morphology of the long bones, however, is common hominoid; but there are features in ulna and

femur which are strikingly hominid. The same applies to the calcaneous. Patellar morphology is hominoid.

In general, the pelvic structure of Oreopithecus can reasonably be regarded as generalized hominoid in character. There are a few distinctly hominid, non-pongid, features, notably a rather well-developed anterior inferior iliac spine and a relatively short ilium.

Cranial capacity of the 1958 skull has been estimated as lying between 276 and 529 cc (Straus & Schön, 1960), therefore within the ranges of variation of orang and chimpanzee. Oreopithecus thus had a brain which was hominoid, rather than cercopithecoid, in absolute size. Indeed, its relative size (compared with body weight) may have been as large as those of some australopithecines, the primitive hominids of South Africa.

To conclude, Oreopithecus is certainly a hominoid, more specifically, a non-pongid hominoid. Thus it must be assigned to the Hominidae or to a family of its own, the Oreopithecidae. The latter classification, originally suggested by Schwalbe (1915), recently has again been proposed by Kälin (1955), Thenius (1958), Butler and Mills (1959), and Schultz (1960). To me, it appears that the choice between Hominidae and Oreopithecidae, at least at the present state of knowledge, is largely a matter of personal taste, depending upon which morphological characters are regarded as of paramount importance. In any event, the real importance of Oreopithecus is its demonstration that a number of truly hominid characters had already made their appearance within the Hominoidea by the beginning of the Pliocene epoch, some 12,000,000 years ago.

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William L. Straus, Jr.
Department of Anatomy
The Johns Hopkins University

The prevailing research models for the study of primitive, non-industrial and rural society attempt to investigate such societies as if they were isolated from the larger society and the world at large. On methodological a priori grounds a set of limits is placed on the field of investigation such that the investigator has a finite universe within which he can work: the self-imposed model of the "isolated" community makes it possible to deal with the internal complexities of the small scale society.

The process of industrialism, capitalism, liberalism, urbanism are seen as polar opposites of the folk and primitive society and the movement from the folk-primitive pole to the urban-secular one is the dominant trend that has characterized both anthropological theory and Western social theory in general. The problems, dislocations, anomi, conflicts disintegration and break-up of primitive as well as rural life are all seen as part and parcel of this process.

The speaker referred to his study, Small Town and Mass Society, to show that rural life in the U. S. showed an almost ubiquitous penetration and control of almost all phases of life of the community by external agencies and pressures. Psychologically, the net result of this for the members of the community has been the development of ambivalent attitudes to the external world.

Drawing on his field experience in Puerto Rico, the speaker showed that similar processes of penetration were characteristic of the colonial world. However, while the amount of penetration in distantly removed areas is usually less, the consequences of the pentration are almost always more extreme. The folk-urban model of analysis does not appear to be adequate for an understanding of the evolution of either the western rural community or primitive society.

Regardless of the rate of absorption of the ideas and patterns of industrial society, a universal reaction of the non-Western, non-industrialized world has been an extreme ambivalence to the Western world and its institutions. The ambivalence is a result of the fact that:

1. The self-confidence of the native in his own institutions is attacked because of the dominance and superiority of industrial society and technology.

2. Admiration and envy of these techniques almost always gains over traditionalism and reactionary resistance. In no areas does the attempt to restore the statas quo ante appear to be a dominant trend.

Instead of attempts to recreate the past, an attack is made not on technology and Western ideas, but on foreign control of the technology and foreign monopolization of Western ideas. The ambivalence in this case separates the instruments of power from their wielders. Nationalism in the colonial world, hatred of the outside foreigner, allows for a recreation of a sense of identification along with an expression of

hostility to the wielders of the instruments which they long to possess. Nationalism in the colonial world parallels the myth of rural supremacy in the Western world.

In both cases, the rural community in Western society and the colonial world, the character of the identity that emerges is a negative one. It is shaped by hostility to the institutions of industrial society and it is artificial. In the face of this, a self-conscious attempt is made to select elements of the past which are not inconsistent with industrialism--even though the past in toto is alien to industrialism, so that the cultural items that are selected are almost all irrelevant except that some forms of identity can be formed around them.

Modern industrialism with its tremendous rate of growth and penetration has tended to destroy all older forms of identification and loyalties. Those countries that are the originators of industrialism permit even the backward rural areas of their own society to identify with industrialism and to take pride in its "accomplishments." Those countries that are merely the objects of industrialization cannot identify with the agents of industrialism as long as they are outside the main centers of its contemporary evolution. For the latter, nationalism, then, becomes an attempt to provide a source of identification that enables the leaders of non-Western nationalism to take over the agency of industrialism and to create a new type of identification in the face of the general collapse of tradition.

Arthur J. Vidich
Department of Sociology
and Anthropology
University of Connecticut

NEWS AND NOTES

Mr. Norman B. Schwartz, graduate student in the Department of Anthropology of the University of Pennsylvania, is engaged in ethnographical work in Guatemala. He may be reached at the following address: San Andres, El Peten, Guatemala, Central America.

Dr. Ruben E. Reina is currently in Guatemala directing ethnographical investigations. Dr. Reina can be contacted at the following address: Avenida Hincapie 5-71, Zona 13, Guatemala City, Guatemala, Central America.

Dr. and Mrs. Leonard Glick are doing field work in the New Guinea highlands. They may be reached at the following address: c/o General Postal Delivery, Gareka, Territory of Papua and New Guinea via Australia. Both are graduate students in the Department of Anthropology at the University of Pennsylvania.

Mr. Walter S. Wilson has received a grant from the National Institute of Mental Health for one year's study of Social organization and land tenure in the Caroline Islands. He may be reached at the following address: Kusaie, Caroline Islands. Mr. Wilson is a graduate student in the Department of Anthropology at the University of Pennsylvania.

Dr. Benson Saler, who received his Ph.D. from the Department of Anthropology at the University of Pennsylvania, is now an instructor in the Department of Anthropology and Sociology at the University of Connecticut, Storrs, Connecticut.

Mr. John T. Cole, formerly of the Department of Anthropology at the University of Pennsylvania, is now an instructor in the Department of Anthropology and Sociology at the University of Kansas, Lawrence, Kansas.

Mr. Keith Otterbein, formerly of the Department of Anthropology at the University of Pennsylvania, is now graduate assistant to Professor G. P. Murdock in the Department of Anthropology at the University of Pittsburgh, Pittsburgh, Pennsylvania.

Dr. Joseph Spellman, Director of the Medical Examiner's Office of Philadelphia, has established a new position: Consultant in Forensic Anthropology. This is the first such post in the United States. Dr. W. M. Krogman has been appointed as the first incumbent of this new post. He will serve in those cases which center around the identification of human skeletal remains.

Notes on Contributors

Dr. Froelich Rainey is professor of anthropology and Director of the University Museum. He has done anthropological research in the West Indies and Alaska. Presently, Dr. Rainey is President of the American Association of Museums.

Dr. Alfred Kidder II is Associate Director of the University Museum in Philadelphia and will direct field operations at Tikal, Guatemala during the coming season. Dr. Kidder received his Ph. D. from Harvard University and is the author of several books on New World art and archaeology.

Dr. A. Irving Hallowell, Professor of Anthropology, Professor of Anthropology in Psychiatry, Medical School, University of Pennsylvania, and Curator of Social Anthropology, University Museum, Philadelphia. In this issue Dr. Hallowell tells us of his recent visit to Nigeria, where he was a guest of the government at the installation of Dr. Nnamdii Azikiwe as Governor-General of that new nation.

COVER DESIGN

Bronze Lion Pin

Bronze lion pin excavated from the ninth century level at Hasanlu, Iran in 1960. The lion is cast in bronze on an iron core and was attached to clothing with a short length of copper chain.

Text: Robert H. Dyson, Jr.
Drawing: Maude De Schauensee