

ARCHAEOLOGY

Uncovering Africa's Past

Starting with the Sinai peninsula, the University of California African Expedition has penetrated into the continent proper making many startling discoveries.

By Dr. FRANK THONE

See Front Cover

► AFRICA has for centuries exerted on men's minds the fascination of unsolved mystery. It was so to the Greco-Roman world of antiquity, to which Ethiopia meant Farthest South; it was still so to our own grandparents of the mid-nineteenth century, who thrilled to the unknown when they uttered their favorite geographical cliché, "Darkest Africa."

Much of the darkness has been dispelled from over the great continent. You can go to the railway station in Cairo and buy a through ticket to Capetown, airplanes droning over the Congo are so commonplace that natives no longer bother to look up at them, and the descendants of Herodotus' "anthropophagi" (cannibals, to you) conduct decorous classes in Sunday school.

But the mystery of Africa has only been breached, not dissipated. Partial answering of some questions has only sharpened the need for finding fuller answers. Many of the most brilliant discoveries of the past two or three generations of exploration have only opened up windows on new and challenging vistas of the unknown.

Delving into Antiquity

Acquaintance with Africa's many and highly varied peoples, for example, has raised questions of where they came from, how they got there, and what can be done to make their future pleasanter and more profitable for them than their immediate past. Chance scattered discoveries of fossils representing remoter antiquity of man and his relatives, like the famous Rhodesian Man skull, and more recently the puzzling bones of manlike apes in South Africa, have broadened and intensified the challenge to dig up more parts of the puzzle and piece them together into a completer picture.

Most ambitious and far-reaching acceptance of that challenge thus far is provided by the University of California African Expedition, which has undertaken a sweep over the entire continent from north to south, finding out everything possible about present peoples and about the still-unfathomed past. It has already been in the field for many months, with a staff of a score or more trained graduate workers. Its leader is Wendell Phillips, with energetic young William B. Terry as field executive. Africa's own scientists, from Egypt to the Union of

South Africa, have participated in the program. Results are beginning to roll in, some of them along expected lines, others quite unlooked-for and dramatic.

One of the first regions to be examined was not properly in Africa itself, but rather upon the threshold between Africa and Asia. This is the Sinai peninsula, where the Children of Israel wandered on their way from Egypt to the Promised Land, and where Moses received the tables of the Law.

Wanderers Before Moses

There were wanderers there long before Moses, abundant evidence showed. At Rawafi was found a site of early Old Stone Age, with several hundred almost perfect stone hand-axes right on the surface. These were of the primitive type used by Neanderthal Man. Farther to the southwest in Sinai, two more Old Stone Age sites were discovered, with implements of the same type. The presence of such large numbers of stone tools at Rawafi suggests that this was no mere campsite or temporary settlement, but a center of Stone Age industry—a kind of paleolithic Pittsburgh. These sites on Sinai are also of importance as markers on Neanderthal Man's migration from his presumed original home in Asia into Africa.

Thirteen skulls, taken from tombs in the Sinai region, are shown on the cover of this week's SCIENCE NEWS LETTER. Mrs. Gladys Terry, wife of the Expedition's field executive, is shown in the background.

Search for traces of the remote past in Egypt centered in the Faiyum, a wide lowland west of the Nile valley, that was once the bed of a vast lake. This was far back in Ice Age times, when the climate of northern Africa was rainy and the land was rich with vegetation where it now is desert. Terraces on the sides of the dry hills mark the levels of the lake as it gradually shrank, as similar terraces in Utah and Nevada mark the stages of the vast Ice Age ancestor of the present much-shrunken Great Salt Lake.

During Egypt's great days, the Faiyum was a rich province ruled by governors of the Pharaohs, and there were elaborate irrigation works and canals. An airplane was used in scouting for the remains of these canals, now choked with desert sand. Some were found as recent as the reign of Cleopatra, Egypt's last independent monarch. Others proved to be older than any recorded dynasty on the Nile.

These earliest canals were the work of farmers of the New Stone Age, or Neolithic, when agriculture was still something new under the sun. Particularly active in finding village sites and other remains of these Egyptians who were before any Pharaoh was Dr. S. A. Huzayyin, modern Egypt's leading prehistorian.

Still older than these remains, older than any human occupation, were bones that gave evidence that what was a great lake in early human times was an arm of the sea before that. Most convincing of these bones are the remains of a primitive kind of whale known as Zeuglodon; two practically complete forty-foot skeletons of these great sea-beasts were found "chasing each other" in what the workers promptly christened Zeuglodon Valley. Other remains of aquatic animals included bones of crocodiles, turtles and hippopotamuses, belonging to the later, fresh-water phase of the region.

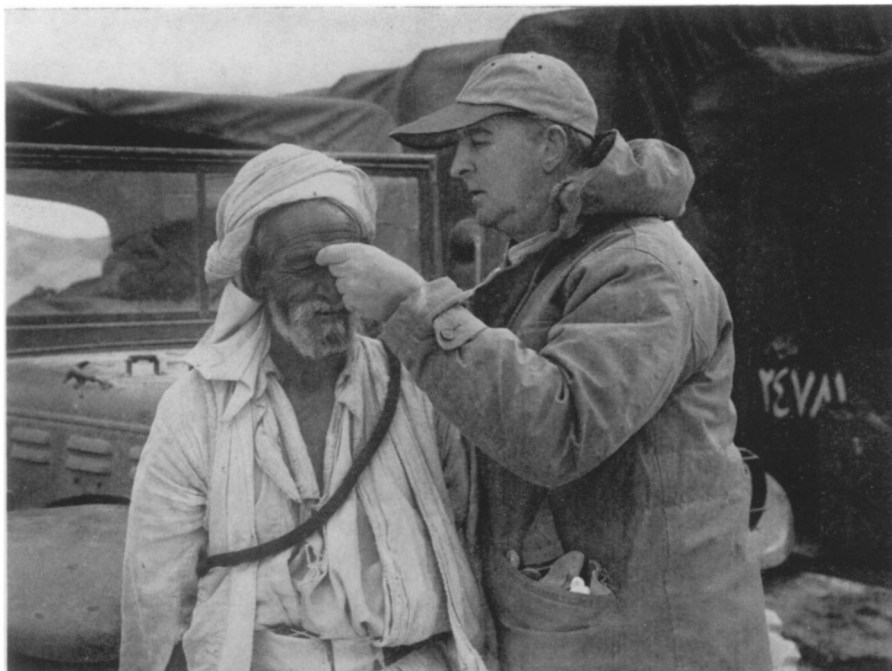
Then the expedition shifted base farther south, into the Sudan. Here the main concern was with the present-day population and its health troubles—which are many. Diseases that are rarities, hardly more than names, to doctors in the temperate zones are everyday commonplaces in the clinics of the Sudan. The medical personnel of the expedition were joined by four U. S. Navy men—a doctor, two parasitologists and a photographer—and together they saw their fill of such outlandish and distressing ailments as elephantiasis, schistosomiasis, loa-loa, bilharzia and sleeping sickness.

Elephant Shrew

Here also the medical men struck a jackpot, in the shape of an addition to the scanty list of animals susceptible to malaria and hence of value in research on that scourge of the human race. This is the elephant shrew, a long-tailed, flexible-nosed little animal that looks like an oversized mouse but isn't a rodent at all. A collection of 104 of these animals was flown directly from the Sudan to Washington, where they are housed at the National Zoological Park, with medical research men from the Naval Research Center busily at work on them. (See SNL, June 12).

At all the expedition's stops, its physical anthropologist, Dr. Henry Field of Washington, D. C., took detailed head and body measurements of the natives. He got data on 225 Beduins in the Sinai peninsula, 190 inhabitants of the village of Tamiya in the Faiyum, 120 "Fuzzy-Wuzzies" in the Sudan, and 150 Masai in Kenya.

The expedition is now in Kenya, where the remote, pre-human past has again come in for attention. Ape teeth of Miocene age (perhaps 40,000,000 years) have been found in the Lake Rudolf area by a South



HEAD MEASUREMENT—A Beduin is shown patiently submitting to measurement of his head by Dr. Henry Field for comparison with skulls found in tombs.

African paleontologist, Dr. Basil Cooke, and by Dr. Robert Denison of Dartmouth College.

In the meantime, measurements of the living human inhabitants are being made by an Egyptian anthropologist, Dr. Mohammed Mitwally of Farouk University in Alexandria. A colleague of his, Dr. Mohammed Awad, is studying the fossils of invertebrate animals near Mombasa.

A special job is being done on the Masai people of the region by a leading Hollywood technologist, Arch Obeler, who is making sound recordings of their ceremonies, and films for television broadcasts.

A unique feature is the recording of the Masai blood-letting ceremony, a ritual which strangers have hitherto rarely been permitted to witness.

Plans for the future of the expedition include more tropical medical research, in the Congo, British East Africa, French Equatorial Africa and Portuguese East Africa or Mozambique. A cave at Lady-smith, in the Union of South Africa, is to be excavated, and with luck should yield still further information on ancient human and sub-human life on the no-longer "Dark Continent."

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PSYCHOLOGY

Recall Painful Memories

► **WHAT ARE** your most unpleasant memories of your childhood? Did you break an arm? Or get sent to bed as punishment? Or cheat on a spelling test?

These are some of the things which 150 college girls recalled as their most unpleasant memories when they were tested by Dr. George G. Thompson and Sam L. Witryol of the Syracuse University School of Education.

The investigators found that painful injuries were the most frequently remembered unpleasant experience of the first five years of life. From 6 to 12 years, being forced to do unpleasant things headed the list, and from 12 to 18 years, deaths of friends or relatives were recalled most often.

Injuries ranged from "cutting finger with razor" to broken bones. Some of the unpleasant things which the girls recalled being forced to do included:

- "Had to practice on cornet."
- "Having to kiss relatives."

"Being sent to principal's office for punishment."

From the earliest years, the unpleasant memories other than injuries included such things as sensory irritations ("taking castor oil"), illness, loss of personal property, corporal punishment and being attacked by animals.

But from 6 to 12, being "yelled at," teasing, fears, fighting, trips to doctors and sense of guilt became more important.

One girl recalled her sense of guilt, "Hit

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