

MEDICINE

Radioactivity Aids Ills

Elements made radioactive are used to treat a blood disease, to attack the cancer problem and to further knowledge of nerve disorders.

► **RADIOACTIVE PHOSPHORUS** from Oak Ridge is being used exclusively for the successful treatment of patients suffering from a blood disease called polycythemia vera at the University of Maryland Hospital in Baltimore, the Atomic Energy Commission revealed in its fourth semi-annual report to Congress.

In this disease, patients have too many red blood cells and in consequence their blood thickens, their spleens enlarge and they have the peculiar blue skin color called cyanotic. The disease extends over many years with the patient growing weak, developing dropsy and heart and kidney trouble.

An attack on the cancer problem with radioactive calcium is being made at Georgetown University Medical School in Washington. This important bone-building element stays in the body longer and is more apt to go to bones and soft tissues when it is in oil-soluble form than when in water-soluble form, the Georgetown scientists have found. Several forms of cancer concentrate calcium, the AEC report of the Georgetown studies states.

Better knowledge of nerve disorders and of thyroid gland function in health and disease are likely as a result of studies with radioiodine and radioactive phosphorus at the Johns Hopkins University in Baltimore as summarized in the AEC report.

New light on resistance to specific germ diseases may come from other studies at this institution and at the National Institutes of Health, U. S. Public Health Service, Bethesda, Md. At Hopkins, radioactive carbon (C14) has been successfully synthesized into an amino acid, arginine. This will be fed to mice in order to label the protein formed in the animals' blood serum.

The animals will then be immunized to some infectious disease and it is hoped the radioactive carbon will show whether the disease-fighting antibodies in their blood are composed of newly synthesized protein or of previously formed protein which has undergone rearrangement after the immunizing shots.

The Public Health Service studies on disease resistance center around use of radioactive carbon, phosphorus and arsenic in preparing radioactive antigens. The antigens are the substances in disease germs which call up disease-fighting antibodies in the blood.

Determining blood loss and blood needs of patients undergoing surgical operations may be done more quickly and accurately in future, if preliminary work with radio-

active phosphorus is borne out by further studies. This work, the AEC report states, is being done at the Medical College of Richmond, Va.

Several anesthetics block the entrance of

ANTHROPOLOGY

Guatemala's "New Look"

► **NATIVE COSTUMES**, long one of the chief tourist attractions in Guatemala, are taking on a "new look." Century-old styles gradually are being discarded in favor of clothes similar to those worn in the United States.

The old, authentic costumes are disappearing, bemoans Mrs. Lilly de Jongh Osborne, who has lived most of her life in Guatemala and possesses a superb collection of textiles.

The colorful native dress typical of each community is donned on religious holidays, important in the life of every Indian. But in most communities cheaper, machine-

radioactive phosphorus into the red blood cell, studies at the University of Virginia, at Charlottesville, show. This, the report states, "points to a possible general action of anesthetics and may aid in explaining the action of sleep-producing drugs."

Better knowledge of what vitamins do in the body may come from studies at Howard University in Washington, in which radioactive phosphorus is being used. At present the studies are concerned with learning how the vitamins affect the utilization of this important chemical in the chick embryo.

Science News Letter, August 7, 1948

made blouses, skirts and trousers are worn the rest of the time.

Two factors are important in accounting for this change, Mrs. Osborne states. They are:

Easier communication. The natives travel everywhere and are familiar with clothes worn by the outside world.

Higher cost of living. It takes a woman four or five months to weave a good blouse, called a huipil, on the pre-Columbian looms still in use.

Most of the native costumes are made of cotton, which grows plentifully in Guatemala. Where in the past silk was used for



GUATEMALAN FASHIONS—Women of Santiago Atitlan are noted for their halo-like hair arrangement. A gaily colored ribbon many yards long is wound around their head to form a sort of crownless flat hat.

decoration, today rayon is employed. In the highlands where the mornings and nights are exceedingly cool, wool is used extensively.

In contrast to cotton, which for many centuries has been growing in the New World, sheep were brought to this country by the Spaniards. The proportion of black sheep is quite large as the Indians prefer to use this wool undyed for the heavy garments that the men use in many villages.

Guatemalan costumes are noted for their many bright colors, which nevertheless are never harsh. Those made for the Indian's personal use within the village often differ greatly from those which in recent years have been made for the tourist trade, but these also have a typical Guatemalan flavor. Aniline dyes, preferred by tourists, are beginning to replace the lovely vegetable dyes.

Women in their clothes today still retain

a part of their old, traditional dress. Sometimes it is a hand-woven belt or huipil. Often it is reflected in the way their hair is dressed or the manner in which the skirt is worn.

Men's clothes have undergone a more radical change. Many have substituted factory-made overalls for their picturesque woolen aprons or long over-trousers split up the side.

But raincoats or umbrellas are still fashioned just as they were centuries ago. They are gathered from the woods rather than being purchased in a store. Broad palm leaves are easily sewn together into a cape-like affair offering perfect protection from the storm. Sometimes they are worn as a cape about the shoulders, sometimes they are thrown over the head—just how they are used depends upon the section from which the Indian comes.

Science News Letter, August 7, 1948

NUCLEAR PHYSICS

Atomic Power Timetable

► HERE'S a new timetable for atomic power:

Present power supply of world replaced in any considerable portion by nuclear fuel—20 years minimum, under favorable circumstances.

Fairly practical reactors, useful for special experimental purposes—within 10 years.

Two reactors especially built for power—within two or three years.

The Atomic Energy Commission in its latest report to Congress gives these estimates from an evaluation headed by its general advisory committee headed by Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton.

The possibility was suggested of producing atomic power plants that will actually increase the amount of fuel within them by breeding fissionable material from non-

fissionable uranium and thorium. But the design of such power plants is recognized to be very difficult and slow.

Such production of artificial nuclear fuels is being practiced on a considerable scale at Hanford where plutonium for bombs is made from the inert part of natural uranium. Thorium, a much more common material, can be similarly converted into fissionable uranium 233.

The higher cost of uranium since the war, due to increased demand and higher mining costs of poorer and poorer deposits, seems likely to prevent atomic power from competing with coal power in the United States except where transportation costs of coal from mines is large or where the small bulk and weight of the uranium fuel are particularly valuable.

Science News Letter, August 7, 1948

ANTHROPOLOGY

Influencing Primitives

► WITCHCRAFT can be useful to modern scientists, when they are dealing with people who believe in witches.

This was discovered by Cornell University anthropologists who have made a study which might be called, "How to Win Friends and Influence Primitive Peoples."

A five-year program of study which began in Ithaca, N. Y., last October with the aid of a grant of \$180,000 from the Carnegie Corporation of New York has resulted in a set of rules for teaching and doing business with primitive peoples. Research included studies of the impact of western civilization on primitive cultures, ranging from southeastern Asia to the American Southwest.

Dr. Morris E. Opler reported that he successfully demonstrated the theory of

germ-borne diseases to a group of American Indians by tying it up with their own belief in witchcraft. If witches were able to plague their enemies with invisible things, Dr. Opler asked the Indians, wasn't it possible that disease might be transmitted in the same way—in a form too small for the eye to see? The Indians agreed and were persuaded to take precautions against disease.

When the U. S. Office of Indian Affairs attempted to stamp out the Indian custom of abandoning and burning the cabins of their dead, Dr. Opler persuaded some Indians that their old custom of fumigating "ghosts" with burning sagebrush might be used for fumigating the cabins.

As an example of the wrong approach, the Cornell scientist cited the story of an

American scientist in India. The scientist, who was interested in raising the living conditions of Hindu villagers, tried to persuade them to grow vegetables in addition to their crops of rice and corn. The villagers laughed at him. He had failed to take into account the caste system which decrees that vegetable growers are a low and unworthy class, only slightly above the Untouchables. Farmers growing cereal grains rank near the top of the social scale.

Dr. Leonard S. Cottrell, Jr., head of Cornell's department of sociology and anthropology, said that the next four years of the research program will include special courses for American students seeking careers in missionary, agricultural and industrial fields overseas, courses for specialists who will measure the impact of western civilization on the backward areas of the world, and visits to research areas by anthropologists and research assistants.

Dr. Opler is gathering material on village life in the Ganges valley in India and plans to visit the area next year. Dr. R. Lauriston Sharp has recently left for Siam. Two other Cornell anthropologists, Dr. Alexander H. Leighton and Dr. John Adair, are establishing a field station in the Southwest in cooperation with the Office of Indian Affairs.

Science News Letter, August 7, 1948

ARCHAEOLOGY

Relics of Early Indians Found by Archaeologists

► POTTERY FRAGMENTS tempered with fiber, which apparently represent the birth of the ceramic industry among the Indians of the southeastern United States, have been uncovered by archaeologists from the Smithsonian Institution in Washington.

These broken pieces of pottery, which are an important archaeological find, were discovered when explorations along the Savannah river in Georgia and South Carolina revealed what must have been a popular Indian camp for perhaps a thousand years.

Indians, from the prehistoric mound-builders to the Creeks who lived in the area just before the coming of the white men, chose this site for a home and left behind them the traces of 150 habitation sites which are now being scientifically investigated for the first time. The Savannah river sites have been neglected by archaeologists until now, when parts of the area will be flooded in the construction of the Clark Hill Reservoir.

A survey of the region is being carried out as a cooperative project between the Smithsonian Institution, the National Park Service and the Army Corps of Engineers. Carl F. Miller and Joseph R. Caldwell of the Smithsonian staff are working to find and mark archaeological sites for possible future excavation before the reservoir is completed and flooded.

Science News Letter, August 7, 1948