

Artistry and Technology Meet in Nigerian Town

► **ARTISANS** hammering tribal daggers and engineers tracking astronauts live together in an African city that was once a junction of medieval camel caravans and is now a center for space communications.

When scientists at the National Aeronautics and Space Administration were planning the first manned space flight in 1960, they had to build a ground station to track the spacecraft as it traveled across the Atlantic from Cape Kennedy.

The newly independent government of Nigeria granted the United States permission to build a telemetry and communications station at Kano, a city founded by Hausa traders 1,000 years ago. Although the agreement originally covered only the one-man Project Mercury flights, it was later extended to include other space missions.

The main function of the NASA station only six miles south of walled Kano, where workers still dye hand-loomed cloth, is to provide voice contact between astronauts and Mission Control Center, Houston.

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PSYCHIATRY

Psychiatrists Study Emotional Intestine

► **AN UNUSUAL EXPERIMENT** has been reported on the oldest system in the human body—the gut. Emotions and digestive activity were linked in detail by a 10-year experiment performed on a man, now 58, with a piece of detached small intestine.

It was one of the few times in history that part of a man's gastrointestinal tract has been open to constant observation, revealing the correspondence between emotions and digestive activity.

An operation had left the man with a 14-inch piece of the ileum (part of the small intestine) isolated from his digestive tract, but still connected to the original blood and nerve supply, Dr. Henry Harrison Sadler Jr., associate clinical professor of psychiatry at the University of California School of Medicine, San Francisco, told the annual American Psychiatric Association meeting in Atlantic City, N.J.

Dr. Sadler and his colleague, Dr. Aline U. Orten, assistant professor of medicine at Wayne State University School of Medicine, Detroit, Mich., reported that some of their interesting findings were:

1. With rage and hostility, contractions of the ileum increased.

2. With optimism, contentment and pride, the ileum was relatively quiet.

Also with sadness, yearning, despair or deep sleep, there was a general quietness of the gut, said Dr. Sadler.

3. At a moment of horror or sudden elation, the ileum became almost completely immobile. The man's contractions almost stopped for five minutes, said Dr. Sadler, when the patient was told he needed a throat operation for cancer.

4. During times of psychological withdrawal, the experimenters found that contractions in the ileum reached a very inactive state. Also the rate of amino acid absorption plummeted during this period, said Dr. Sadler, resulting in a conservation of energy not unlike that of hibernating animals or snails in the sand when the tide goes out.

The human gut is still reacting to outside influences as it did when it first evolved, said Dr. Sadler. In lower animals, outside influences may be the weather; in man, they may come from the brain.

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GENETICS

Survival of Fittest No Longer Holds True

► **"SURVIVAL of the fittest"** no longer holds true, and as a result man is in danger of breeding himself into a genetic weakling—if he survives at all.

In prehistoric times people born with genetic defects died off quickly, Dr. John Buettner-Janusch, a Duke University anthropologist, said.

Today, however, children born with inherent weaknesses such as susceptibility to infectious disease are being kept alive by antibiotics and a host of other aids. "The weakness genes are being perpetuated."

Even the most extreme eugenics programs suggested today, such as sterilization of the feeble-minded, can do nothing about the problem, Dr. Buettner-Janusch said, since the feeble-minded and those similarly handicapped contribute relatively little to the "gene pool" of a population.

The "normal" people who carry a recessive weakness gene that does not show, contribute far more to the pool.

Man may never reach the point of characteristic genetic weakness, however, the scientist said, since the human species now faces the dangers of the "technological ability to destroy itself and a population explosion that might do it first."

All is not lost, however, he believes. Science can already block the ill effects of some weaknesses and can manipulate surroundings to compensate for others. Great efforts should be made, he said, to identify recessive gene carriers "so that they might know the relative dangers."

Dr. Buettner-Janusch specializes in the study of evolutionary trends in body chemicals and blood systems.

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IN SCIENCE

MINERALOGY

Uranium Prospectors Invade German Resort

► **VACATIONERS** at the health spa in Menzenschwand, West Germany, are fed up with geiger counters.

Hordes of amateur and professional prospectors have been trampling through the scenery for weeks, ever since a chemistry student tripped over a rock in the surrounding forest, took it back to his school laboratory and found it to be made of uranium.

Unhappily for the prospectors, the local inhabitants do not take kindly to having their resort dug up around them, even if the goal may be the richest deposit of uranium ore anywhere in Europe. Leisure comes first at Menzenschwand, and the burgomaster has enforced a local ordinance against digging of any kind.

The local authorities were somewhat taken aback at one point, when the diggers began announcing that their reason for staying away was possible danger from radiation. However, a previous, and quite unscientific, publicity campaign extolling the virtues of radiation from the local uranium failed to discourage more than 170,000 overnight visitors to the spa last year.

The burgomaster, with a watchful eye for visitors armed with shovels or with cameras that click excessively, has pointed out that local uranium would cost twice as much as that available on the world market.

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ASTRONOMY

First Comet of 1966 Spotted From Africa

► **THE FIRST COMET** spotted in 1966 has been rediscovered in the far southern part of the sky.

The very faint object is named Comet Neujmin-1. It was discovered in 1913, seen again in 1931 and last seen in 1948. It is visible only from the Southern Hemisphere. Although the comet will move northward and brighten slightly by the end of the year, it will still be too faint for all but the very largest telescopes.

News of the discovery of Comet 1966-A was telegraphed to observatories by Smithsonian Astrophysical Observatory, Cambridge, Mass. The object is in the constellation Norma in the southern Milky Way.

It was spotted by Dr. A. D. Andrews of Boyden Station, Bloemfontein, South Africa.

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E FIELDS

SPACE

Two-Gas System Planned For Manned Spacecraft

► **NO ONE KNOWS** what space missions will be planned after the Apollo moon landing in 1969, but the National Aeronautics and Space Administration nonetheless is building equipment for them.

Manned spacecraft now use a single gas (oxygen) atmosphere. For missions of more than 45 days, however, a two-gas system—oxygen plus some inert gas such as nitrogen or helium—may be necessary for crew health and safety.

Two companies have each been given parallel \$300,000 NASA contracts to produce a cabin sensor for such a two-gas atmosphere. The companies are SDS Data Systems, Pomona, Calif., and Perkin-Elmer Corporation, Electro Optics Division, Norwalk, Conn. Each will be required to design, develop, test and deliver a flight prototype system to NASA's Langley Research Center, Hampton, Va., for further basic ground research.

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NUTRITION

Rock Cornish Hen Ousted by Computer

► **THE BAKED ROCK** Cornish game hen was simply going too far—so the computer got rid of it.

This was just one of the economies dictated by the electronic device that is planning the menus at Sara Mayo Hospital in New Orleans.

The computer had already pared daily food costs down from \$1.36 per patient to \$1.04, so when it revealed to the surprised hospital staff that Cornish hen was costing 41 cents a serving, the tasty birds just had to go.

By doing away with such unnecessary delicacies, as well as with more conventional problems such as wasted salt, the "chronically budget-conscious" hospitals of the United States could save \$90 million annually, estimated Dr. Joseph L. Balintfy of Tulane University, who developed the computer system.

Four years of research preceded the adoption of the system.

Apparently the dieticians love the idea, but patients are not told that they are eating computer-planned menus because of a possible "dehumanizing factor" and the chance of "misinterpretation of the computer role in the food service picture."

There are 2,500 different foods included in the computer's "pantry,"

each one cross-filed according to its relative amounts of 19 separate nutrients. From these ingredients, the computer can instruct the cooking staff to prepare any of 1,150 recipes, 400 of them from the Sara Mayo kitchen and the rest from the U.S. Public Health Service Hospital, New Orleans, which helped with the research.

To prevent the computer from going overboard on rock Cornish hen and the like, food price lists are fed into the machine and constantly updated.

The computer itself, an International Business Machines Corporation 7044, is located not at Sara Mayo but at nearby Tulane.

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NUTRITION

Fish Flour Could Help World's Food Supply

► **FISH FLOUR** could be produced and marketed at only a few cents a pound, thus helping to prevent starvation in the underprivileged parts of the world, a New York biologist said at hearings of the Senate Committee investigating the use of fish protein concentrate.

Dr. I. A. Parfentjev, who is doing private research at the Institute of Applied Biology said his method of extracting fish protein and mineral products was patented in June 1950 (2,512,375). The method could easily be adapted to the preparation of fish flour for human consumption, the biologist believes. Fish meal is now being used as an additive to chicken feed in amounts of five percent.

As a source of raw material Dr. Parfentjev advised the use of refrigerated carcasses left after filleting of fish. This waste material makes up about two-thirds of a total catch.

By adding moderate acidification, rancidity could be prevented, as could the growth of many bacteria, he said.

The addition of thyme and other spices by individual cooks improves the taste of fish flour. Some researchers are getting rid of the fish taste in the flour by extracting the fats by alcohol, but Dr. Parfentjev said this regular laboratory procedure for quantitative analysis of organic material should not be used in preparing a food product.

"It is an unnecessary step that will complicate manufacture and highly increase the cost of production," he said. "To extract lipids from a million pounds of fish would require a million gallons of alcohol. The participation of commercial fisheries is highly essential for mass production of fish meal and fish flour, and they have no equipment for alcohol extraction or its re-distillation."

Dr. Parfentjev injected mice for several days with fish flour prepared from fish waste and the animals showed no adverse effects. This indicates its safety for human foods, he believes.

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TECHNOLOGY

Two Instant Airstrips: Fiber Glass, Aluminum

► **TWO NEW** "instant" airstrips—an aluminum one that floats on rice paddies and one made of fiber glass that can be sprayed on bare ground from a helicopter—are being developed for the U. S. Navy and Air Force.

The Navy's version, made in eight-by-three-foot sections, consists of aluminum sandwiches filled with buoyant blocks of plastic foam. A 13,000-pound UH-34D helicopter has already landed on the floating mat in tests at the U.S. Army Waterways Experiment Station, Vicksburg, Miss.

The helicopter produced landing forces of up to 26,000 pounds and taxied to within two feet of the mat's edge without damaging the mat or causing it to dip dangerously. Field tests in Viet Nam are scheduled soon. The Aluminum Company of America, manufacturer of the mat, claims a two-year life-span on either water or marshy surfaces.

For use on land, the Air Force is testing a mixture of fiber glass and polyester resin, which is ready for use an hour after being sprayed from a tank aboard a hovering helicopter.

In one recent test, the fiber glass polyester mixture was sprayed over soft desert sand near Dallas, Texas. Spraying took 30 minutes and the coating had set within an hour. The floor neither broke nor bent after being successively tested with two 3,600-pound cars, a 7,000-pound UH-1 helicopter, a 9,000-pound fork lift truck, a 10,500-pound S-58 helicopter and a 17,500-pound fire engine.

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TECHNOLOGY

Ice-Melting Salt Also Kills Plants

► **CONSERVATIONISTS** working on the First Lady's highway beautification program have been advised not to plant flowers and trees close to the edge of the road because they will be killed by salt used to melt the ice on slippery pavements in winter.

Researchers at the Virginia Polytechnic Institute, Blacksburg, are studying the effects of de-icing chemicals, primarily common salt, or sodium chloride, and calcium chloride, on foliage and other above-ground portions of plants. How much salt plants can tolerate and what responses plants have to salt concentrations on sand, clay and loam soils will be investigated.

De-icing chemicals also damage concrete pavements and bridge surfaces.

The program is financed by the National Cooperative Highway Research Program through the Highway Research Board.

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