PALEONTOLOGY

Deformed Indian Skulls Flattened Deliberately

➤ INDIANS of Mexico and parts of the Southwest a few centuries before Columbus had a marked flattening of the top of the back of the head.

The flattening is believed to have been produced by deliberate pressure applied to the heads of infants. In one case, a sort of three-horned man was produced with the skull sticking up on two sides and the front.

Skulls of this type are now being studied by scientists at the Smithsonian Institution in Washington. They have reported that the practice, known as "lambdoid flattening," was very common in Mexico centuries ago and has been found as far north as Utah.

Science News Letter, June 5, 1948

CHEMISTRY

Better Rubber for Tires Made from Sugar and Soap

➤ SUGAR and soap are helping make better automobile tires, the American Chemical Society was told in Philadelphia by Prof. Carl Shipp Marvel of the University of Illinois. They are used in a so-called redox process in which synthetic rubber may be manufactured at freezing temperature.

The quality of GR-S, the synthetic rubber blended with natural rubber in all tire treads, has been greatly improved by the recent development of the amazingly rapid redox process, he said. This new method makes it possible to manufacture rubber at freezing or sub-freezing temperatures instead of at 212 degrees Fahrenheit, the conventional temperature.

The quality of GR-S and similar rubbers seems to go up as the temperature goes down. GR-S is essentially a combination of two petroleum compounds, butadiene and styrene, which are made to unite or polymerize by a chemical stimulant, or catalyst. In the redox process, the compounds are first emulsified with a soap, and the reaction is started by a type of sugar called the activator.

Science News Letter, June 5, 1948

AERONAUTICS

90-Passenger Transport Promised by British

➤ A GIANT airplane, capable of carrying 90 passengers or 12 tons of freight, will be ready for a test flight in less than a year, it was revealed in London. It is one of the largest planes which the British aircraft industry is undertaking at the present time.

Two of the type are under construction. They are being built by General Aircraft, of Feltham, Middlesex, and the plane will be known as the Universal. Parts manufactured at Feltham will be assembled at the Southampton airport.

The Universal will have a wingspan of 162 feet, a height of 31 feet, and a length of nearly 100 feet. It will be powered by four Bristol Hercules air-cooled radial engines giving a total of 7,800 horsepower. Its cruising speed will be under 200 miles an hour, but fully loaded it will be able to clear a 50-foot obstacle in only a half-mile from the start of the take-of.

Some of the proposed Universals will seat 30 passengers on an upper deck and have space for some nine tons of cargo below. This is to satisfy demands where a combination passenger and freight airship is required.

Science News Letter, June 5, 1948

AERONAUTICS

Solve Aviation Mix-up On English And Metric Units

➤ A SOLUTION for the aviation confusion in international flying due to use of English and metric units in airplane communication has been worked out in Montreal by the International Civil Aviation Organization representing 48 nations, including the United States.

The plan, involving a proposed table of units, takes the form of an international standard to be incorporated into the legislation of the member nations. It proposes a condensation from five dimensional standards into one in a ten-year period. After New Year, 1959, complete world-wide standardization in aviation communication would be achieved.

When this standard is reached, distances would be given in nautical miles, altitudes in meters, horizontal speed in knots and vertical speeds in meters per second. Wind direction and velocity would be in degrees and knots, cloud heights in meters, and visibility in meters or kilometers. Altimeter setting would be in millibars, temperatures in Centigrade and weight in kilograms. Time would remain the day, the day beginning at midnight, Greenwich mean time.

Science News Letter, June 5, 1948

IN SCIENCE

GENETICS

Plant and Insect Changes Produced by Ultrasonics

➤ EVOLUTION of new varieties of plants and insects has been forced by treating parents' cells with sound waves too short and rapid to be heard by any ears, by a three-man research team in the laboratories of the University of Connecticut at Storrs, Conn.

Electrically driven vibrating crystals, producing ultrasonics at four hundred thousand cycles per second, were used on three different kinds of plants and on young fruit flies. Subsequent growth showed changes of kinds usually regarded as genetic, and microscopic examination of the cells confirmed this by displaying changes in the structure and arrangement of the heredity-carrying chromosomes.

A preliminary report on the work is given in *Science* (May 28) by Drs. R. H. Wallace, R. J. Bushnell and E. H. Newcomer, who state that more detailed accounts will be published elsewhere later.

Science News Letter, June 5, 1948

MEDICINE-BIOLOGY

AEC Announces Program of Study in Medicine, Biology

➤ A COAST-TO-COAST program of 38 research projects in medicine and biology to be conducted in 29 non-government laboratories was announced by the U. S. Atomic Energy Commission. The Commission has made available $1,300,000 for the projects.

The subjects for the studies range from genetics of fruit flies and corn and the nutrition of tapeworms to cancer research and airborne infectious diseases.

Radiation-induced gene and chromosomal mutations in drosophila (fruit flies) and corn will be investigated at the California Institute of Technology, Pasadena. Research on the nutrition of tapeworms will be conducted at Rice Institute, Houston, Tex. The Memorial Hospital for Treatment of Cancer, New York, will study cancer and the distribution of isotopes in therapy. Work on airborne infectious diseases will be done at the University of California, Berkeley.

Science News Letter, June 5, 1948

FIELDS

ENGINEERING

Musicians and Designers Of Instruments Differ

➤ MUSICIANS and the engineers who invent new musical instruments do not always agree about music and its instruments. The controversy is being aired in the *Journal of the Acoustical Society of America* (Nov., 1947; May, 1948).

The inventor of several electronic musical instruments, B. F. Miessner, Morristown, N. J., recently complained that both musicians and the musical instrument industry "are extremely backward in accepting, manufacturing and using new instruments, or improvements of old ones."

In his letter to the editor of the Journal, Mr. Miessner concluded with the charge that "Music . . . is still where it was a hundred or more years ago."

Exception to this and other of the inventor's views is taken by H. L. Robin of the Juilliard School of Music in New York.

Mr. Robin argues that new electronic musical instruments "do not seem designed for constructive musical purposes."

As examples to support his argument, he lists:

"An organ which is less expensive than previous pneumatic types and which can be used in every small church or home.

"A violin whose intensity range far exceeds that of the conventional violin.

"A piano which, by the use of amplification, can be made to simulate an already existing piano tone."

These new instruments, Mr. Robin, suggests, were built for "extra-musical considerations."

Both Mr. Robin and Mr. Miessner agree that musicians and instrument designers ought to work together more.

Science News Letter, June 5, 1948

METEOROLOGY

Low Atmospheric Pressure Induces Fast Tree Growth

➤ THE LESS air there is over the Northern Hemisphere, the faster trees grow in the Far North. This curious correlation has been worked out by G. W. Brier, U. S. Weather Bureau statistician, who calls attention to the phenomenon in a letter to the editor of the British journal, *Nature* (May 8).

It is not generally known, but there is an actual migration of air from north to south in winter, and a return flow in summer. However, these annual atmospheric tides are not always equal, so that there may be a pile-up of air over one hemisphere, with a correspondingly lowered atmospheric pressure over the other.

This is what happened in the 40-year period from 1899 to 1939, with the pressure deficit remaining persistently north of the equator.

Science News Letter, June 5, 1948

NUTRITION

K-Ration Fruit Bar Is Made More Tasteful

➤ TOO late for millions of World War II GI's, scientists at the University of California College of Agriculture have made a better tasting version of the dried fruit bar in the Army's K-ration.

They added chopped toasted almonds and honey or corn syrup. The result is said to be a 100% more tasty bar.

GI fruit bars were about half raisins, with prunes, apples, figs, apricots and a little ground candied orange peel.

Dr. W. V. Cruess and students John Brekke and Henry Seagrave-Smith have developed this new recipe: 20 parts Muscat raisins; 20 parts Calimyrna figs; 20 parts chopped toasted almonds; 20 parts honey or corn syrup; 15 parts dried apricots; and five parts candied orange peel.

Science News Letter, June 5, 1948

BOTANY-MEDICINE

Establish Herbarium To Study Hay-Fever Plants

➤ A NATIONAL hay-fever herbarium, in which will be gathered hay-fever-causing plants and their pollens from all over the country, is being established under the auspices of the American Academy of Allergy by the University of Illinois College of Pharmacy at Lisle, Ill., in connection with the College's proposed drug plant experiment station. The collection will be in charge of Prof. Ralph H. Voigt.

Physicians, botanists and other persons with scientific interest in hay fever and the plants that cause it will be able to obtain slides of positively identified pollens from the new collection, and to examine the pressed specimens there.

Science News Letter, June 5, 1948

CHEMISTRY

Semi-Plastic Coating for Brick Is Water-Repellent

➤ BRICK and other porous masonry surfaces are protected from moisture by a new semi-plastic coating, applied in a water solution by brush or spray, which becomes invisible after drying.

Unlike other types of invisible transparent surface coatings, which are usually solutions of waxes or stearates in inflammable solutions, this is an opaque, milky-white, non-inflammable water emulsion containing water-repellent organic ingredients. After application it becomes absolutely transparent.

The new product, first developed during the war and used by the armed services, is called Aquaphane and was perfected by Dr. Hugo Silbermann, an Americanized scientist from Czechoslovakia, now with International Aquella Products, Inc., Rockefeller Center. The material is not applicable to wood, metal, marble or other solid masonry work. When applied to common brick and other porous masonry it has long life and prevents water absorption from rain, dampness, snow and sleet.

Science News Letter, June 5, 1948

MEDICINE

To Test Anti-Malarials at Central American Airbase

➤ A CENTRAL American airbase of the Department of the Air Force is to be the site of a new attack on malaria.

Scientists of the U. S. Public Health Service will conduct a two-year test program on new anti-malarials at the Puerto San Jose Air Field on the Pacific Coast, 70 miles from Guatemala City, capital of that Central American country.

The project is hailed as the first opportunity to test new drugs against malaria in an area where the disease is prevalent. Workers at sugar and coffee plantations in the region will be given the drugs to help them fight the disease and assist scientists in evaluating the anti-malarials.

Dr. Charles G. Dobrovolny of the Public Health Service will direct the program which will include both U. S. and Guatemalan scientists. Cooperating with the Public Health Service on the program are the Guatemalan government and the Pan-American Sanitary Bureau.

Science News Letter, June 5, 1948