PHYSIOLOGY

Gage Bones' Elasticity

Study aimed at finding out how the human body behaves under different shock conditions. Discover human bones approximate elasticity of wood.

➤ ELASTICITY of human bones is about one-tenth that of steel, or about equal to the elasticity of wood.

This was discovered in tests made in a new research program at the National Bureau of Standards. The new study is aimed at finding out how the human body behaves under shock in airplane crashes, seat-ejection from planes, parachute opening and exposure to blasts. The project is being undertaken in conjunction with the Naval Medical Research Institute.

The scientists first investigated the mechanical properties of human bones and joints, because the skeleton supports the body and protects vital organs.

Specimens were made from compact-type bones from the extremities of both humans and monkeys. They were put through 17 tests with special gages.

Ultimate strength of bones under compression was found to be about 23,000 pounds per square inch. This gives bone a compressive strength of about one-fourth that of cast iron, or twice that of hickory wood. Compression bone specimens failed with a sudden snap and with longitudinal cracking.

On the basis of their preliminary findings, the scientists concluded:

Bone is an elastic, brittle material.

Next study planned in the research program will include tests of the entire human knee-joint in the standing position.

New developments in high-speed aircraft have caused flight personnel to be subjected to shocks and impacts in regular flying as well as accidents, Bureau scientists pointed out. Basic information for the development of new safety devices is expected to come from the research program.

Science News Letter, August 28, 1948

MEDICINE

New Allergy Remedy

Capable of relieving symptoms in 83 per cent of all allergic conditions, "Trimeton" has brought relief to 81 of 90 hay fever patients treated, report indicates.

➤ A NEW DRUG has relieved 90% of hay fever victims treated with it. Dr. Fred W. Wittich, secretary of the American College of Allergists, announces that this will be reported in the ANNALS OF ALLERGY (Aug.-Sept.), official publication of the College.

The new antihistaminic or antiallergic agent is "Trimeton," manufactured by Schering Corp. of Bloomfield, N. J. Its chemical name is prophenpyridamine. Its advantages and uses are reported by Dr. Ethan Allan Brown and 12 of his colleagues from the Allergy Clinic of the Boston Dispensary Unit of the New England Medical Center.

Trimeton is credited with relieving symptoms in 83% of all allergic conditions. The study involved 227 patients suffering from 20 allergic and non-allergic conditions including hay fever, bronchial asthma, allergic skin reactions, hives, and angioneurotic edema.

Results reported by the group showed that 81 of 90 patients with hay fever were completely relieved; 15 out of 25 patients with bronchial asthma were markedly relieved and five only moderately; 15 of 22 patients with hives had complete release from symptoms and three moderate; every one of three patients with both hives and angioneurotic edema had complete relief.

The drug was given in tablet form in doses of 12.5 to 25 milligrams, one to four times daily. Side reactions from the drug, the most common of which was drowsiness, were severe in only two of the patients treated, the physicians reported.

They are carrying on further studies on the relation of blood pressure to side reactions of antihistaminic agents which will be reported upon later.

Science News Letter, August 28, 1948

ENGINEERING

Oil Cooler for Jets Uses Many Aluminum Tubes

➤ DETAILS of an oil cooler for use on jet planes, which takes the heat from the oil and uses it to pre-heat the fuel, have been revealed by its manufacturer, the Clifford division of the Standard-Thomson Corporation of Waltham, Mass. Also revealed are the hot and cold wind tunnels for testing.

The oil cooler is made of brazed and welded aluminum, saving from 200 to 600 pounds in vital weight in comparison with the copper oil cooler formerly used. There are from 600 to 6,000 aluminum tubes in each cooler. They are six-thousandths of an inch thick. The cooler is now standard equipment for Air Force and Navy planes and is used on many commercial aircraft.

Two wind tunnels are used in the research laboratory of the oil-cooler manufacturer. One, called a hot tunnel, operates normally at 100 degrees Fahrenheit inlet air temperature. The other has capacity to supply to a 24-inch diameter cooler at 60 degrees below zero when rated oil at 225 degrees is flowing through the oil cooler.

Science News Letter, August 28, 1948

ENGINEERING

Size of New Cast Iron Not Altered by Heat

➤ "GROWTH-RESISTANT" cast iron, suitable for use in stoves, furnaces, melting pots and gas or oil burners, was revealed by Battelle Memorial Institute of Columbus, Ohio, where it was developed.

This iron, unlike ordinary iron used for making castings, acquires no permanent extension in size when repeatedly heated in use to high temperatures. The result is it can be employed to make stove tops that will not warp, furnace bowls that remain true and airtight for years, and burner parts that may last indefinitely.

The new iron is a high-silicon product, the silicon being the element which gives it "growth" resistance. It contains also minor amounts of copper and chromium to make it resist scaling at high heat. It maintains satisfactory growth, scaling and impact properties up to 1,700 degrees Fahrenheit. The research resulting in this product was sponsored by the Jackson Iron and Steel Company of Jackson, Ohio.

Science News Letter, August 28, 1948

ICHTHYOLOGY

Rare Fish Species Added To U. S. Museum Collection

➤ FISH MENTIONED in the Bible are included in more than 200 species from the Red Sea being added to the collections of the U. S. National Museum in Washington.

The new specimens were collected during a fisheries survey for the Arabian-American Oil Company by Donald S. Erdman of the Smithsonian Institution.

Another group of weird fish life is being collected for the Museum in the depths of the Atlantic Ocean south of Bermuda by Loren P. Woods, associate curator of fishes. Mr. Woods is in charge of the scientific workers on the *Karyn*, exploration ship of the Woods Hole Oceanographic Laboratory.

These fish will be little-known specimens, adapted to life in darkness under great pressures through millions of years.

Science News Letter, August 28, 1948