

the plate of the instrument and stopped by lifting it.

Pitch is increased by moving the pencil upward. Loudness is increased by movement to the right. Tonal qualities of the

sound can be obtained by varying the circuits in the machine. Skill of the player enters in variations of timing, pitch and volume.

Science News Letter, November 13, 1948

MEDICINE

Polio in Drinking Water

► THE GERMS, or viruses, of infantile paralysis and several other diseases can get into drinking water through back-siphonage in the plumbing system. Once in the water, they can survive for from one to seven days even when the water is chlorinated to the extent most city drinking water is.

Experiments showing this are reported by Dr. Joseph Zichis of the Markham Laboratories in Chicago and Dr. E. A. Piszczek of Cook County Health Department in the journal, *SCIENCE* (Nov. 5). This seems to add evidence to the suspicions of many scientists that one way

infantile paralysis spreads is through contaminated drinking water.

The viruses of St. Louis encephalitis, of western equine encephalitis (so-called horse sleeping sickness) and of lymphocytic choriomeningitis were the ones tested besides the infantile paralysis virus.

Infantile paralysis, St. Louis and Japanese B encephalitis and infectious hepatitis (jaundice) viruses all can produce the diseases when given by mouth, and the infantile paralysis virus is known to leave the body through the intestinal wastes.

Science News Letter, November 13, 1948

ENGINEERING

Full Use of Highways

► THE PUBLIC is not getting the full use of the highways to which it is entitled, the American Petroleum Institute was told in Chicago by John S. Worley of the University of Michigan. Public interest must come first in the study of any highway problems which may arise.

We are faced with a number of these problems, he said, among them taxation, trade barriers, an adequate highway plant, uniform traffic code, safety, a fuller use of our highway plant, and long-range highway planning. Taxation he characterized as probably our most confusing activity, administered with the least intelligence of all our highway transport activities.

Fuller use of the highways and streets, in which more than \$33,000,000,000 has been invested, includes their use to full capacity. The capacity of a highway is found in the elements of space for and strength for carrying the loads.

The reasonable capacity of a modern rural road, in terms of passenger cars, is about 450 cars per lane per hour when the average speed is 42 miles an hour. Trucks and trailers reduce this amount. Congestion begins where the number of cars increase or the average speed is less. But few rural roads are used to the saturation point.

In urban areas, it is the street intersections rather than lack of lane space which governs the number of vehicles moving along a street. A great deal of the congestion we think we encounter in cities is psychological. If measured in time lost, it would be found to be only a few minutes per 24 hours.

Heavier loads would make possible fewer trucks on the highway, as well as a lower

charge for service, all of which is in the public interest, he declared. Legal loads permitted in adjoining states upon the same road built under Federal specifications show how the public does not get the full use of its highways. On U. S. Highway 23, as an example, the allowable gross load in Michigan is 120,000 pounds; in Ohio, 77,500 pounds; and in Kentucky, only 50,000 pounds.

Science News Letter, November 13, 1948

ARCHAEOLOGY

Prehistoric Eskimo Houses Had Beams of Whale Ribs

► PREHISTORIC Eskimo houses in which the long ribs and jawbones of whales served for timbers were excavated on the coast of Frobisher Bay in Baffin Island during the past summer by Dr. Henry B. Collins, Jr., Smithsonian Institution archaeologist. They were built on the same general plan as the "dugouts" used as dwellings by both Indians and early white settlers in the West, except that in the latter wooden poles supported the roof over the pit that constituted the main part of the house.

Most of the weapon points, tools and household utensils found in the ancient village belonged to the very old but still undated Eskimo type known as the Thule culture. They were made of stone, ivory, bone and antlers. Such artifacts have been found over a wide stretch of territory, from Greenland to Alaska. It is believed that the Thule culture started in Alaska and spread eastward.

Along with these Thule artifacts, which

are large and rough, were many small, very delicately carved implements of the type known as the Dorset culture. Users of these were an earlier people, who also apparently spread eastward from Alaska.

Although it is usually supposed that the Thule culture dates from about 800 years ago, the only definite date that can be assigned in connection with the village which Dr. Collins excavated is one earlier than the end of the sixteenth century, when the English explorer Frobisher penetrated into the waters north of Canada seeking the fabled Northwest Passage. The Eskimos whom he met were already using iron tools—and no trace of iron was found in the ancient village on the shore of the bay that bears his name.

Science News Letter, November 13, 1948

BIOCHEMISTRY

Broken-Down Cells Can Still Synthesize Protein

► A NEW WAY of studying protein synthesis and new information about this all-important tissue-forming mechanism have been reported at the University of California.

Living cells apparently do not have to be intact in order for protein synthesis to be carried on, a team of researchers headed by Dr. David M. Greenberg report.

The scientists broke down the walls of living liver cells, and placed the nuclear material in a nutrient solution. Then they added radioactive glycine, labeled with radioactive carbon 14, which permits the carbon atom to be traced through any chemical reaction.

Radiocarbon atoms showed up in the protein material, indicating apparent incorporation of the glycine into protein. It was also found that a considerable portion of the glycine had been transformed into another kind of amino acid, serine.

Dr. Greenberg said there was evidence that protein synthesis and the transformation of one amino acid into another is accomplished by enzymes, chemical agents which catalyze biochemical reactions. He added that there appears to be a special enzyme for protein synthesis, and another one for transforming one amino acid into another.

The scientists expressed hope that further studies along this line may make it possible to isolate these enzymes. Dr. Greenberg said that while protein synthesis in the laboratory is a long way off, the new information will be of help.

Protein synthesis was observed earlier in the Berkeley laboratories, using radioactive sulfur and radioactive glycine with intact cells in the form of liver slices. However, the new technique expands the scope of experiments that can be performed.

Dr. Greenberg's associates in the research were Drs. Theodore Winnick, Felix Friedberg, and Martin P. Schulman, of the department of biochemistry.

Science News Letter, November 13, 1948