

CHEMISTRY

Pre-Cursor of B-12 Vitamin Discovered

► DISCOVERY OF chemical compounds that are precursors of vitamin B-12, essential in animal growth, was announced to the American Chemical Society meeting in New York by Dr. J. J. Pfiffner and a group of chemists from Parke, Davis and Co., Detroit.

An organism not yet completely identified was found in the stomach of cows and it produced a mixture of cobalt-containing pigments, two of which were isolated in crystalline form. These two forms of what is called pseudovitamin B-12 do not in themselves produce the spurt in chick growth that true vitamin B-12 does, but they are used in the alimentary tract of cud-chewing animals to manufacture the B-12 vitamin which cows and other such animals provide for themselves.

Because quantities of B-12 vitamin are being used in feeding chickens and pigs, the newly discovered intermediate products may prove of use in the possible artificial manufacture of this chemical.

Science News Letter, September 15, 1951

INVENTION

Patented Doll Grows Up While You Watch It

► A DOLL that grows as you watch it is among the inventions on which the government has recently issued a patent. It is a mechanical growth in length, aided by a clock motor device.

The doll is made in two parts, one of which overlaps the other in the waist section. Mechanism is provided inside which lengthens the body slowly, the mechanism being activated by the clock motor. The clock is wound by hand.

Patent 2,564,813 was issued on this device. Inventor is William Robert Moyers, Sr., St. Augustine, Fla. The actual simulation of a growth effect is accomplished by coiled springs, but the springs are controlled by the clock movement.

Science News Letter, September 15, 1951

ENGINEERING

Traffic Accident Rate Cut By Better Street Lighting

► BETTER STREET lighting provided in Kansas City, Mo., during the past few years has greatly cut the number of traffic accidents, the Illuminating Engineering Society meeting in Washington was told by T. J. Seburn, traffic engineer of that city.

Citing certain streets with improved lighting, he stated that the number of accidents per year on them is now 1,329 property damage accidents, 220 injuries and 10 fatalities. With the old lights, with the

use of a day-time to night-time ratio, there would have been 1,559 property damage accidents, 319 injuries, and 17 fatalities.

The job of replacing the lighting system then in use with improved electrical lamps was begun in 1945. For several years before that date the traffic accident experience had shown that with one-third of the total traffic using the streets during the hours of darkness, approximately three-quarters of the serious traffic accidents occurred.

Figures on accidents presented by him show a rather slight decrease in property damage accidents, a much more pronounced reduction in injury accidents and a very gratifying reduction in fatal accidents.

Science News Letter, September 15, 1951

NUTRITION

New B Vitamin Family Discovered, One Isolated

► DISCOVERY OF a new family of B vitamins, with isolation of one of them, is announced by the University of Texas.

The discovery was made by Dr. Lester J. Reed, researcher at the University of Texas Biochemical Institute, Austin, with the collaboration of Dr. I. C. Gunsalus of the University of Illinois at Urbana.

The new vitamin group is called the lipoic acid family and the first isolated vitamin is called alpha lipoic acid. These vitamins are said to be a key factor in the utilization of sugars and starches and are found throughout nature.

The alpha lipoic acid vitamin was obtained from liver. The vitamins were found by studying fermentation of sugars and starches by bacteria.

Science News Letter, September 15, 1951

ICHTHYOLOGY

Poor Fish! One in Thousands Has Pancreatic Cancer

► THE FIRST known case of a tumor of the pancreas in a fish has been reported by Drs. Myron Gordon and Ross F. Nigrelli of the New York Zoological Society.

The tumor was a cancer. Although thousands of fish have been bred and reared in the genetics laboratory of the New York Aquarium, and thousands of others have been autopsied, "only a single adenocarcinoma (cancer) of the pancreas was found," they state.

The human pancreas is a large gland that produces insulin and digestive ferments. Thin slivers cut from the pancreatic fish tumor showed that they were "remarkably similar" to those of comparable pancreatic cancers in man, they found. They do not know what caused this unusual tumor. The growth occurred in a region that may correspond to the tail of the pancreas in mammals.

Science News Letter, September 15, 1951

IN SCIENCE

PLANT PATHOLOGY

Seed Fungus Spotted Faster and Cheaper

► A FASTER, cheaper method of determining seed-borne fungus diseases has been developed by the University of California College of Agriculture at Berkeley.

By using natural instead of artificial food materials, William C. Snyder and H. N. Hansen, professors of plant pathology, have found that fungus diseases in or on seeds can be identified in about one-third the normal time.

Bean straw, peas, wheat seed, fresh or dehydrated fruits and vegetables, dead insects and soil are some of the natural materials used as food for the fungus. Five to seven days after the seeds to be tested are placed on food material any fungus growth present can usually be identified.

On artificial food the fungus takes two to three weeks to grow. In this rich medium the fungus grow abnormally large and identification is not always possible. Growth on the natural material is more like the appearance in nature.

Science News Letter, September 15, 1951

TECHNOLOGY

Dunk Paper in Water—It Comes Out Dry

► YOU CAN dunk some wrapping paper in water today and it will come out quite dry. You can count on some paper bags to get wet milk bottles home without tearing. Yes, wrapping paper today looks just like it did in grandfather's time, but it has acquired many new tricks.

New treatments have been developed to make paper water-repellent or to give it wet-strength, but paper itself is made in pretty much the same way it was created centuries ago. Machines have replaced skilled hands, but it always begins as pulp and takes lots of water in the process.

Materials for making paper—a scientific way to amuse yourself or the kids on a rainy day—plus a number of interesting papers can now be obtained through SCIENCE SERVICE. The kit includes paper pulp, Fourdrinier wire, and a cardboard box from which to cut the two frames traditionally used in making paper by hand; you supply the water, egg beater and bucket.

The kit is available for the nominal sum of 75 cents, one of the monthly "THINGS of science" service. Just write SCIENCE SERVICE, 1719 N St., N. W., Washington 6, D. C., and ask for the paper making kit.

Science News Letter, September 15, 1951

E FIELDS

CHEMISTRY

Natural Gas Liquids Add To Motor Fuel Supply

► ONE GALLON of motor fuel can be added to every ten now available for America's automobiles by squeezing the liquid fuel out of the great out-pouring of natural gas.

Dr. B. R. Carney of the Warren Petroleum Corporation, Tulsa, Okla., told the American Chemical Society meeting in New York that nearly 150,000,000 barrels of liquids could be condensed out of available natural gas by methods now developed.

These natural gas liquids propane and butane can be used directly as motor fuel for tractors, trucks and buses and they can be blended in conventional gasoline.

At present the natural gas liquids are used as raw material for synthetic fibers, electrical insulation, refrigerants, alcohol, synthetic rubber, but they could be most valuable economically by burning them in engines for vehicles.

Science News Letter, September 15, 1951

INVENTION

Disposable Bag for Home Vacuum Cleaners Patented

► AN UNPLEASANT household task is eliminated with a disposable bag for vacuum cleaners which is thrown away when sufficiently used. Inventor is George W. Holt, Jr., Menominee, Mich. Rights to patent 2,564,845 which he received are assigned to Marathon Corporation, Rothschild, Wis.

It is a paper carton, perforated with holes and having an inner filter lining. The lining catches the dirt while the air escapes through the holes. The bag is easily inserted and removed from the vacuum cleaner.

Science News Letter, September 15, 1951

ARCHAEOLOGY

Pottery Links Stone Age People in Japan to America

► A LINK between the culture of the Stone Age people of Japan and ancient Americans was found by scientists at the Smithsonian Institution in Washington.

The tie is in a large collection of New Stone Age pottery found by Major Howard MacCord in a recent tour of Army duty on the Japanese island of Honshu. Designs, surface treatments and shapes of these pottery remains have a marked similarity to those of early American Indians in the eastern United States and Canada.

In Japan as in the U. S., the ancient people pressed cords into the soft clay of their dishes to form a decorative design. Both peoples decorated their pottery by pressing cloth, basketry, or net into the soft clay. Both peoples made bumps on the rims of their dishes, and made the bases pointed so that water would boil more quickly.

There are, however, striking differences between the work of the aborigines of Japan and the Americans.

Archaeologists at the Smithsonian do not believe that there was any direct contact or exchange of goods between these distant peoples. Instead, they theorize that there may have been independent development of the culture of two related peoples.

The ancestors of the American Indians probably came from central Asia long before the development of pottery making. Another group from the same area may have made their way to Japan. The thinking of the descendants of both groups then probably developed along similar lines.

Science News Letter, September 15, 1951

METALLURGY

Supersonic Speeds Need High-Temperature Metal

► METALS ABLE to withstand much higher temperatures than any now used are needed if airplanes, rocket ships and guided missiles are to travel at ultra speeds in the region of 2500 miles an hour, British and American aviation experts were told in Brighton, England.

Metal surfaces of guided missiles will melt in mid-air because of the frictional heating of the air stream resulting from velocities three to four times the speed of sound, they were told by Dr. Nicholas J. Hoff of the Polytechnic Institute of Brooklyn, N. Y. He addressed a meeting under the joint sponsorship of the Royal Aeronautical Society of England and the Institute of Aeronautical Sciences of the United States.

All the advancements achieved by aeronautical scientists and engineers will be of little use, he said, if metallurgists do not develop new material which will stand up under the high temperatures accompanying supersonic speeds. Some scientists estimate that temperatures ranging from 2,000 to 3,000 degrees Fahrenheit will be reached as a result of friction heating up surfaces at ultra-high speeds, he stated.

One of the important duties of the progressive aircraft structural analyst is to calculate the time limit within which the structure remains safe under conditions of speed and frictional heat, he declared. Another new problem at high speeds arises in connection with the uneven heating effect of the air stream. This uneven heating can lead to thermal stresses and eventually to failure of the aircraft.

Science News Letter, September 15, 1951

BIOPHYSICS

Ultra-Sound Waves Relieve Pain But Are No Cure

► "SOUNDING" TREATMENTS, consisting of massaging with high frequency sound waves that cannot be heard by the human ear, can relieve pain about as well as heat and diathermy.

These ultrasonic treatments, however, are no better than heat and diathermy for pain relief and they are no cure in the sense of affecting the cause of various diseases.

These conclusions are based on the experience of a year during which some 150 patients were given 1,477 ultrasonic treatments. The conclusions were reported by Drs. Fritz Friedland, John G. Bisgrove and Bernard J. Doyle of Cushing Veterans Administration Hospital, Framingham, Mass., at the American Congress of Physical Medicine meeting in Denver.

Painful stiff neck, low back pain, bursitis and some kinds of arthritis including the stiff spine affliction, Marie-Strumpell spondylitis, were conditions treated. In these cases the VA doctors found ultrasonics safe to use. But they warn against "sounding" patients with heart trouble, pregnant women, regions of growing bone, sex glands and eyes.

Cancer, they warn emphatically should not be treated by ultrasonics because failure to use surgery and X-rays or radium may endanger the patient's life.

The red coloring matter of blood, hemoglobin, absorbs all the ultrasound waves in the blood and a significant portion of them in many solid tissues, an engineering-medical team from Philadelphia reported. Members of this team are Edwin L. Carstensen and Drs. Herman P. Schwan, George M. Piersol, and Robert B. Pennell.

Science News Letter, September 15, 1951

BIOCHEMISTRY

Blood Chemicals Tell Tales of Disease

► TELL-TALE CHEMICALS in the blood that give doctors clues to disease and infection have emerged from research at the Worcester Foundation for Experimental Biology.

The new indicators are cholesterol impurities in the blood. Whether they are substances from which cholesterol, fatty substance in the blood, is made or whether they are breakdown products is being sought by Drs. Erwin Schwenk and Nicholas T. Werthessen.

The damaged liver produces more cholesterol than the normal organ, the Worcester experiments with radioactive carbon labeled chemicals have shown. Because cholesterol has been blamed for hardening of the arteries and even cancer, the way in which it is formed and what happens to it in the living body is being intensively studied.

Science News Letter, September 15, 1951