

PUBLIC HEALTH

Well-Grandparent Clinics Are Predicted for Future

► WELL-GRANDPA and grandma clinics may be on their way. They would be the equivalent for the old folks of the well-baby clinics to which for many years mothers have been taking their babies at regular intervals. At the well-baby clinics the young ones are weighed and measured and examined. Mother tells doctor whether she has been having any trouble getting the baby to eat or to behave properly. Doctor gives advice on diet, habit training, how to keep baby well. If any physical defects or ailments are found, proper methods of correction are suggested.

At the well-grandpa and grandma clinics the procedure would be somewhat similar. The weekly or monthly measurement of height would not be necessary, nor would the old folks be likely to get "shots" to prevent them from "catching" diseases. But they would be weighed and examined carefully by the doctor. Suggestions on diet, or remedying of defects and ailments from poor eyesight to cancer, and on living habits would be made.

Signs that such clinics may be coming are seen in the increased interest in problems of aging now being taken by health and medical authorities. Another sign is the establishment within the Indiana State Board of Health of a division of adult hygiene and geriatrics. This is like the divisions of child hygiene and pediatrics which many state health departments have now.

People who are growing old do not have to be senile, that is, feeble in mind and body, any more than children have to have rickets, Dr. William F. King, director of the new division, points out. Helping men and women who are living longer to live better is, he says, the objective of his division.

Science News Letter, March 8, 1947

PHYSICAL CHEMISTRY

Magnet Measures Amount Of Oxygen in Gas Mixture

► PROF. LINUS PAULING, one of the best known of American chemists, has taken out patent 2,416,344 on a device that measures the relative amounts of oxygen in mixtures of gases. It depends on the known fact that oxygen is slightly attracted to a magnet, while most other common gases are repelled.

The device consists of a pair of spheres connected by a slender rod, suspended between the poles of a strong magnet by a filament attached to the middle of the rod. Response of the spheres to the magnetic pull is conditioned by the oxygen concentration; the amount and rate of their swing is registered by means of a light beam reflected from a small mirror attached to the filament.

Dr. Pauling has assigned rights in his patent to the California Institute Research Foundation.

Science News Letter, March 8, 1947

MEDICINE

Emotional Tension Starts Trouble Like Sinusitis

► ABOUT THIS TIME of year a good many persons suffer attacks of sinus trouble. Some of these cases are probably the aftermath of a cold or other infection of the nose and throat. Some of the cases, however, and probably particularly those in which the trouble hangs on for months and keeps coming back, may be due to emotional tension.

True sinusitis is an inflammation of the sinuses, which are the air-containing cavities in and around the nose. Pus is formed and retained in the sinuses and must be drained out. Sometimes this can be done by shrinking the tissues with medicines, letting the pus flow out. Sometimes the doctor must insert a large needle into the sinus and wash the pus out.

How emotional tension can bring on sinus symptoms, such as a stuffy nose, mucous discharge and headache, is explained in a recent report from the National Hospital for Speech Disorders somewhat as follows:

Tension results in disturbed activity of the autonomic nervous system. This system is the body's chief integrating mechanism. Tension working through it may affect the body generally, making you feel irritable and nervous, or it may affect just one part of the body. An example of the local effect is excessive sweating of the palms of the hands when a person is tense and anxious.

Instead of getting clammy hands when tense and anxious, some people may get what amounts to clammy noses. The membranes inside the nose may swell, causing congestion and stuffiness, or they may secrete an overabundance of mucus, or both. The person with this state of nose thinks he has sinus trouble.

Science News Letter, March 8, 1947

IN SCIENCE

OPTICS

Removing Reflections Gives Better Television Pictures

► THE PROCESS that produced glareless glass for military field glasses during the war is now used to give clearer, sharper television pictures, the American Optical Company revealed.

The method removes light-consuming reflections from the glass face of the cathode-ray tube which serves as a screen of a direct-viewing home television receiver. It also produces images of greater clarity when used with the projection type receiver.

The reflections are removed by directly coating the face of the television tube with a chemical substance based on a silicon composition on which patent applications have been filed. It is not necessary to disassemble the tube for the coating process, or to apply the coating in the vacuum chambers used in earlier glare-removing methods.

By reducing the reflections in the glass face of the tube caused by light in the room in which the television receiver is located, false images caused by reflections are eliminated, and more light is transmitted.

Science News Letter, March 8, 1947

CHEMISTRY

Use of Fluorine in Rubber Synthesis Improves Product

► AN IMPROVED TYPE of synthetic rubber, especially well adapted for use in electric insulation, is the subject of U. S. patent 2,416,456. The inventor, Dr. L. Frank Salisbury of Wilmington, Del., has assigned rights to E. I. du Pont de Nemours and Company.

Hitherto, a special rubber for this purpose has been produced as a copolymer of chlorinated butadiene (chloroprene) with styrene. Dr. Salisbury substitutes chlorine's once-wild chemical cousin, fluorine, using essentially the same formulae and methods of preparation. The new compound has high resistance to the aging effects of sunlight and ozone and to the action of oil and other rubber solvents, remains highly elastic at low temperatures, and shows surprisingly high tensile strength.

Science News Letter, March 8, 1947

E FIELDS

RADIO

Visual System Monitors Many Radio Channels

► A VISUAL SYSTEM for simultaneous monitoring of many radio channels is covered by patent 2,416,346, granted to Ralph K. Potter of Madison, N. J., a Bell Telephone Laboratories engineer. An oscilloscope, with the sensitive surface in a band around the equator of its spherical head, is kept constantly rotating, while the beam that registers incoming radio waves is deflected onto the luminescent area.

Science News Letter, March 8, 1947

GENERAL SCIENCE

Successful Scientific Research Needs Freedom

► HUGE-SCALE scientific operations, such as those that produced the atom bomb, are no guarantee of success in fundamental research, Prof. Henry W. Smyth, Princeton University physicist who wrote the first comprehensive account of the production of atomic energy for military purposes, usually known as the Smyth Report, declared in an address before the Sigma Xi chapter of the University of Washington at Seattle.

The titanic effort symbolized by the name, Manhattan Project, he pointed out, "was principally applied physics and therefore its successes in terms of organization and direction have little bearing on the future of fundamental scientific research."

The first actual production of energy through nuclear chain reaction, he said, was achieved in an experiment on a laboratory scale in Chicago in 1942. In reality, it was done in much the same manner as it would have been done in a peacetime laboratory.

Without underestimating science's need for powerful research machines, Prof. Smyth continued, "it should be emphasized that freedom from too much direction or supervision appears to be a necessary condition for productive scientific research.

"This freedom is meaningless without freedom of publication and of international exchange of information. It may

be that the requirements of international politics will interfere with these conditions, but let us not have any illusions.

"No amount of government financing or of organization and official correlation will automatically keep free imaginative research going. Men of first-class research ability will be stultified or more probably will be diverted to fields of research where there are no restrictions.

"The war period was a period of cessation of scientific research and a continuation of a war atmosphere will prevent the healthy rebirth of scientific research."

Science News Letter, March 8, 1947

PLANT PATHOLOGY

Late Tomato Blight Makes Early Appearance

► LATE BLIGHT is making an early appearance in Florida tomato fields, according to reports reaching the U. S. Department of Agriculture. This fungus disease, which devastated the commercial tomato crop in the East last summer, started in the same state and marched up the map as the season advanced. Some Florida growers have already stated that their efforts to combat the new outbreak with highly-touted new organic fungicides have not been too successful so far.

Tomato growers were caught off guard last year, because it had been a long time since weather conditions favored an outbreak. This time they do not mean to repeat that costly experience. They have been making heavy purchases of spraying apparatus and laying in supplies of chemicals.

Scientists at the state agricultural experiment stations have set up an intelligence service. They will gather information from the field and forward it to a clearing-house at the Department of Agriculture in Washington, where it will be digested and put into bulletin form for prompt distribution.

Forces of defense are thus better armed and better organized than they were in last year's disaster.

It may turn out that these precautions are unnecessary. The blight fungus thrives best in damp, cool weather, and in warm, dry years does not amount to a real menace. A study of its recent history shows that its two severe outbreaks in the past seventeen years have come when prevailing temperatures during May and June have been below 75 degrees Fahrenheit, with rainfall above normal.

Science News Letter, March 8, 1947

MEDICINE

Amino Acid Enters Black Cancer Mystery Solution

► SOME of the mysteries of black cancers, called melanomas, may be solved through a new tool built in the Radiation Laboratory of the University of California.

The new tool is a fundamental body chemical which has been synthesized with radioactive carbon. The chemical is tyrosine, one of the amino acids which are building stones of proteins. Its synthesis with radiocarbon was accomplished by Dr. J. C. Reid working under Dr. Melvin Calvin, according to a report to *Science* (Feb. 21).

Tyrosine may be involved in the black cancers, or melanomas. The cancers are black because they contain a substance called melanin. Melanin gives the dark color to dark hair, skin and eyes. Tyrosine may be the material from which certain cells of the body make melanin.

The exact relation between tyrosine and melanin and melanomas and the reason why some melanomas lose their power to produce blackness may be learned with the tyrosine that can be traced through the body by its radiocarbon.

Even more immediate practical use of tyrosine with radiocarbon may be made in the study of plants. Tyrosine or a close chemical relative plays a part in the blackening of potatoes and apples. More knowledge of this reaction and how to combat it may come from the new radiocarbon-tyrosine.

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ENGINEERING

Low-Melting, Fusible Vents Localize Fires in Buildings

► A NOVEL IDEA for localizing fires in large factory or warehouse spaces is embodied in patent 2,416,284, granted to Arthur L. Brown of Boston, assignor to the Factory Mutual Research Corporation. His design calls for the incorporation of panels of low-melting-point materials, such as fusible alloys, rubber compounds or plastics, into the roof structure. The idea is that if a fire can quickly make a hole in the roof it will not spread laterally, nor will smoke fill the building, preventing effective approach of firemen.

Science News Letter, March 8, 1947