

PUBLIC HEALTH

War Brings Bad Prospects For Health of Whole World

WAR is about to make a smashing offensive upon the world's continuous upward trend in health. Year after year the U.S.A. has experienced a continuous improvement in mortality—1938 was a banner year. Other lands had much the same trend.

Now war threatens further progress not only in countries at war but possibly for all the world. This is what Metropolitan Life Insurance Company statisticians read in the record for the future.

Added to the direct harvest of battlefield deaths will be heavy toll from diseases associated with hardships to which both soldiers and civilians are exposed. One of the serious consequences of the last World War was a material increase in the death rate from tuberculosis. Even if the world is spared a disease disaster like the 1918-19 influenza pandemic, and another plague is likely, the health prediction is: Gloomy.

Science News Letter, October 28, 1939

PUBLIC HEALTH

Identification Tags May Carry Blood Type Data

THE METAL tag worn by each soldier to identify him when he can't tell his own identity may have added to it an O, A, B or AB, priceless information about the kind of blood needed if the wearer is wounded and must have a speedy blood transfusion.

Life-saving blood will probably be stored in blood banks at base hospitals behind the lines just as it is in modern city hospitals now, typed ready for use. If the soldier is typed before he is wounded, treatment may be speeded. The blood pumped into a person's veins must match that already there, otherwise conflict in the coagulating properties of the bloods may cause shock and even death. Preferably the donor's blood is actually mixed with the patient's in small samples to see that they get along together properly but this may take too long and too much laboratory work in war surgery. Typing and labeling before combat conditions would be a great help. Ideally each soldier would be typed, a big job. The Japanese are said to have done this.

Use of glucose solutions, sweet fluid, and blood plasma, blood strained of its cells, can be used for transfusions without necessity of typing blood. This is

more practical under strenuous emergency conditions, but the lift to the patient is not as great.

Good idea for civilians: Know your blood type, note it on your identification card along with any peculiarities of use to a doctor. You might even have it tattooed on your arm or less usefully but more symbolically over your heart. Particularly "bleeders," whose blood clots with difficulty, and diabetics, who may experience coma hard to diagnose properly, should label themselves plainly with this information for use in emergency.

Science News Letter, October 28, 1939

PUBLIC HEALTH

Hay-Fever Pollens Found In Air Over Atlantic

HAY-FEVER pollens ride the winds over the Atlantic ocean, but only for a relatively short distance off shore, O. C. Durham, chief botanist of the Abbott Laboratories, stated after examining vaselined glass slides exposed by Engineer J. W. Etchison of the Pan-American Airways plane, Yankee Clipper, on a late-summer trip to Europe and return.

Pollens were found at altitudes between 2,000 and 8,000 feet out to 275 miles off shore, the slides indicated. Above 8,000 feet there were practically no pollens over either land or sea. Since the plane did not fly at lower altitudes when far off shore, the possibility still remains that pollens may be present "at the bottom of the air" farther out at sea than the slides showed.

Science News Letter, October 28, 1939

CHEMISTRY

Over 500 Dyes Now Ready For Tinting Nylon Hosiery

AMERICAN chemists now have ready more than 500 dyes for tinting the new Nylon stockings, made from coal, air and water, which soon will be on the market, according to the report of P. H. Stott, du Pont chemist, to the meeting of the American Association of Textile Chemists and Colorists in Boston.

Originally created for use on wool, silk and acetate rayons, the dyes work equally well on the new synthetic, silk-like fiber.

The introduction of Nylon and its dyeing, Mr. Stott indicated, is in sharp contrast to the struggles of the then-new rayon industry during the World War. At that time the industry was completely dependent on German dye imports and had difficulty in getting good dyes after the conflict began.

Science News Letter, October 28, 1939

IN SCIENCE

GENERAL SCIENCE

22 Classical Universities Closed by Germany

SOME twenty-two universities in Germany have closed, casualties of war and present political policies there, reports received in this country indicate.

Closing of all but four of Germany's universities—Berlin, Munich, Jena, and Vienna—has been reported to the American scientific journal, *Science*. (Oct. 13)

This means the loss of about 22 classical universities in Germany and Austria and a loss of opportunity for higher education for between 30,000 and 35,000 students in Germany alone.

It is not known whether the closing down applies to other higher educational institutions such as agricultural colleges, institutes of technology and technical schools of college grade.

Attendance at German universities has decreased greatly in recent years, but the total number reported for the year 1937-38 was 47,470 with the University of Berlin credited with 7,463 students, Munich with 4,931 and Jena, 1,033. These are the three classical institutions in old Germany remaining open.

Since the part of Czechoslovakia taken over by Germany is considered as a "protectorate," the university closing policy may not affect institutions there.

No word has yet been received by Washington officials from Warsaw as to the fate of the University there.

Science News Letter, October 28, 1939

MINERALOGY

Yearbook Lists Minerals Needed From Abroad

CROSS off the list of minerals for which the United States is dependent on foreign sources: nitrates, potash and platinum. But our dependence on foreign sources of supply has been increased for these commodities: mercury, because of the exhaustion of higher grade ore bodies, and tin, manganese, chromium, tungsten, and aluminum, because of the tremendous increase in the use of these essential metals. Authority: U. S. Bureau of Mines Minerals Yearbook, 1939.

Science News Letter, October 28, 1939

E FIELDS

CHEMISTRY

High Dividends Are Paid By Largest Research Budget

LARGEST single research budget in the U.S.A. is probably du Pont's \$7,000,000 annually, exceeded probably only by the aggregate of highly diversified research expenditures of the federal government.

Is it worth while? Just look at the record, as reported in *Chemical and Metallurgical Engineering's* current survey of American chemical industry: 1923, nitrocellulose lacquers; 1927, cellulose film; 1928, synthetic resin enamels; 1929, acetate rayon; 1931, titanium pigments; 1932, synthetic rubber; 1933, synthetic camphor; 1934, rayon tire cords; 1935, urea-ammonia fertilizers; 1936, acrylic acid plastics and resins; 1937, textile fire retardants; 1938, sink and float process; 1939, first synthetic textile fiber made entirely from mineral raw materials which "many regard as the outstanding research achievement of recent years."

Science News Letter, October 28, 1939

PHYSICS

Triple Weight Hydrogen Is Made Radioactive

HYDROGEN of the triple weight variety has been made radioactive in atomic bombardment experiments with the University of California cyclotron. It is a strange kind of hydrogen of mass 3 with a long half-life period of radioactivity and a very short range for the radiation given off from it. (*Physical Review*, Sept. 15)

Drs. Luis W. Alvarez and Robert Cornog obtained the evidence as a follow-up on atom-smashing experiments that showed an unusual kind of helium of mass 3 instead of the usual mass 4 is stable. The research also showed mass 3 helium to be about 12 times as plentiful in helium obtained from the atmosphere as in helium extracted from gas wells.

The helium of mass 3 when used as a bombarding material induced radioactivity in ordinary silicon of mass 28, probably forming phosphorus of mass

30 which broke down into silicon of mass 30 with release of electrons.

The radioactive mass 3 hydrogen was produced by bombarding deuterium (hydrogen of mass 2) with deuterons (hearts of mass 2 hydrogen) by means of the cyclotron.

Ordinary hydrogen is the simplest element of unitary weight or mass one. It is one of the components of water and almost all living and many non-living things. Helium is the next heaviest element, usually of mass 4, and only in recent years has it been available in quantity for use in airships, diving and medicine.

Science News Letter, October 28, 1939

MEDICINE

Clue in Cancer Fight Seen In Gland Grafts in Mice

LAATEST lead on cancer comes from research by Dr. John J. Bittner, fellow of the National Cancer Institute working at the Jackson Memorial Laboratory, Bar Harbor, Maine.

Two years ago he found that mamma mice nursing their little mice babies transmitted to them in the milk a "breast cancer producing influence." Those taken away at birth and fed artificially did not develop cancer with undue frequency.

Now Dr. Bittner reports in U. S. Public Health Reports that grafting bits of normal spleen, thymus gland and breast tissue from mice healthy but of a stock predisposed to cancer will make mice of a relatively non-cancer strain develop cancer much more frequently in later life. Since mice are like men and women in many physiological respects, this may eventually throw light on cancer, the killer.

Science News Letter, October 28, 1939

MEDICINE

Soviet Physician Finds Sweet Disguise for Doses

HERE'S a honey of a method of taking medicine. According to reports by Tass, USSR news agency, Dr. N. P. Yoirish, Soviet physician and amateur bee-keeper, dissolves various medicines in sugar syrup and feeds this sweet fare to his bees who compound it invitingly in honeycombs with medicinal strength unimpaired. Sixty brands from the hive-pharmacy containing albumen, bromine, iron, iodine, calcium and other substances, so it is claimed.

Science News Letter, October 28, 1939

AERONAUTICS—PHYSIOLOGY

Pilot's "Black-Out" Due to Anemia of Brain

THE PERSONAL "black-outs" in mid-air, temporary blindness and even loss of consciousness during power dives and inside loops in air battles which European aviators may even now be experiencing, are due to anemia of the brain and slowing down of the flow of blood to the eyes.

This explanation comes from Drs. R. B. Phillips and Charles Sheard of the Mayo Foundation. It is based on tests made by themselves and other investigators of the condition which affects both military and test pilots.

Methods of avoiding "black-out" are few, it is stated. Test pilots have found that it helps to tense the muscles of legs and abdomen. Some yell as loudly as possible when doing a dive, others lean forward when coming out of the dive, and still others use tape on their legs and abdomens, all these measures helping somewhat to keep the blood in the brain and upper part of the body. Another measure suggested for keeping the blood in the head is the use of an inflatable belt which may create as much pressure as 200 millimeters of mercury around the abdomen just as the dive is begun.

Science News Letter, October 28, 1939

MEDICINE

Hundreds of Physicians Can Use Giant X-Ray Viewer

LARGEST X-ray viewer in U.S.A., a giant projector whose special lens and 2000-watt lamp enlarge a standard inside-the-chest plate up to size of a regulation motion picture screen, allows several hundred physicians to join in an educational consultation. The National Tuberculosis Association uses it for demonstrations. The ordinary viewing box commonly used by roentgenologists allows only four or five to see a chest film necessary in detecting tuberculosis.

Science News Letter, October 28, 1939

GENERAL SCIENCE

Intellectual Cooperation Goes On at Same Address

HOPEFUL note on the mail from Paris: The International Institute of Intellectual Cooperation (part of the League of Nations) is carrying on its activities, continuing its work from Paris at its usual address, the Palais-Royal.

Science News Letter, October 28, 1939