

PUBLIC HEALTH

Change Reportable Ills

Influenza and pneumonia come off list of diseases reported weekly to Public Health Service, but undulant fever, botulism, dengue fever and others added.

► INFLUENZA AND pneumonia are coming off the list of diseases to be reported weekly by states to the U. S. Public Health Service.

Botulism, brucellosis or undulant fever, and dengue fever are going on the list.

These and some other changes for making disease fighting more effective have now been approved by the U. S. Public Health Service and the State and Territorial Health Officers' Association.

Object of all disease reporting, of course, is to keep health authorities informed of what "catching" diseases are occurring, where they occur, and whether the number of cases is reaching epidemic proportions. With this knowledge, measures to stop epidemics and protect the public can be taken more effectively.

Cases of certain diseases must be reported when they occur, if they do, without waiting for the end of the week summary report. These are: cholera, plague, smallpox, epidemic, or European, typhus fever, and yellow fever.

Endemic typhus, spread by fleas instead of lice, and occurring in fair numbers of cases all along in parts of the United States, will be on the new list of reportable diseases. So will infectious and serum hepatitis, a

liver disease known to laymen as jaundice because this may be one symptom. Malaria, rabies in man and trichinosis, the measly pork disease, are on the new list.

Reports of infantile paralysis will be divided into reports of paralytic and non-paralytic cases. Paratyphoid fever will be reported separately from typhoid fever, under the name, salmonellosis. Bacillary dysentery will appear as Shigellosis. Tetanus and trachoma will be on the new list.

Because of the possibility of germ warfare, glanders, usually fatal disease which humans get from horses, will be on the list of diseases reported annually. Also on the annual, but not on the weekly, list will be leprosy and leptospirosis, or Weil's disease. Tuberculosis and venereal diseases go on the annual list.

Psittacosis, or parrot fever, and a new disease, Q fever, go on the weekly list.

Weekly and annual reporting of communicable diseases by state health officers to the U. S. Public Health Service is on a voluntary basis, the states cooperating for their own and each other's benefit. But whenever an epidemic of any disease breaks out, state health officers report that immediately to the U. S. Public Health Service.

Science News Letter, December 1, 1951

TECHNOLOGY

Shape Metals by Sparks

► SPARKS WHICH destroy have been put to constructive work. A new invention utilizes the same kind of sparks which destroy automobile distributor points and erode electrical switches for shaping metals which cannot be shaped by machinery.

The new method electronically controls the intensity and duration of the spark. The result is work with an accuracy as close as .0005 inch.

News of the invention appeared in Russian journals translated in this country in 1948. Simultaneously, it is claimed, it was independently invented in this country by Edmund E. Teubner, who then formed the Method X Corporation of Pittsburgh. Later, Method X was bought by the Firth Sterling Steel and Carbide Corporation, Pittsburgh.

In this new method, screw threads, round or shaped holes and other incisions in metals which cannot be made by machining can be made by the condensed spark discharge. A reverse picture of the tool is

made and the sparks jump between that and the metal which is to be formed.

Firth believes that it has advanced the method far beyond that described in the Russian journals. The process is expensive, it is said, but since the parts cannot otherwise be machined, the expense is justified. The process is reported in the Arthur D. Little, Inc., INDUSTRIAL BULLETIN (Oct.).

Science News Letter, December 1, 1951

MEDICINE

Bursitis of Elbow Curable by X-ray

► ABOUT 95% of patients with bursitis of the hip and of the elbow, generally called tennis elbow, can be cured by X-ray treatments, Dr. W. L. Waskow of Madison, Wis., reports.

Bursitis of the hip is quite common, he states in a report in the MISSISSIPPI VALLEY MEDICAL JOURNAL (Nov.). Many of the pa-

tients with this painful and disabling condition, however, think they have arthritis and do not even see a doctor because they fear no form of treatment will be very helpful. Even the doctor sometimes overlooks the fact that bursitis can attack the bursa of some joint other than the elbow. He may put the hip bursitis down to muscle soreness and prescribe diathermy or some form of heat treatment. Unfortunately, this makes the bursitis worse, Dr. Waskow states.

Tennis elbow commonly is precipitated by heavy work which the patient does not ordinarily perform. This type is usually easily recognized but the elbow bursitis that comes from injury may, like hip bursitis, be passed off at first as muscle soreness.

Dr. Waskow reports that of 60 cases of hip bursitis and 35 cases of tennis elbow, good results were obtained by one course of X-ray treatment in 85%. Another 10% got temporary relief but had to have a second course of X-ray treatment for permanent benefit. The other five per cent did not benefit from the first course of X-ray treatments and were not re-treated by X-rays.

Science News Letter, December 1, 1951

MEDICINE

Korean Veterans Are Less Malaria-Conscious

► KOREAN WAR veterans who get malaria are not as aware of their condition as World War II veterans. Consequently when they suffer relapses after they get home, they are not as likely to get treatment before mosquitoes get a chance to bite them. And the most important malaria-carrying mosquito in the United States is easily susceptible to infection by Korean vivax, or relapsing malaria.

These facts, pointing to the danger of malaria being spread from returning Korean veterans, were reported to the National Malaria Society in Chicago by Drs. Martin D. Young and Robert W. Burgess of the U. S. National Microbiological Institute.

Science News Letter, December 1, 1951

ANTHROPOLOGY

Basin Becomes Test Tube For Studying People

► THE PAPALOAPAN BASIN, 300 miles southeast of Mexico City, is serving as a "test tube" to study the reactions of a peaceful, primitive people suddenly thrown into a world of machines and technology.

So reports Dr. Ralph L. Beals, professor of anthropology at the University of California at Los Angeles, who recently returned from the area.

The Mazatec Indians, who occupy part of the Papaloapan Basin, are extremely primitive natives. They still practice many prehistoric ceremonies, such as sacrifices and dances to the gods.

Not long ago the Mexican government began building roads, flood control projects and power dams on their land. Lakes backed up by the dams will soon force many of the Mazatecs to find new homes, while results of the modernization will give them cheap power, transportation and schools.

The 90,000 Mazatec Indians are beginning to react to this progress. Dr. Beals, together with U.C.L.A. graduate student, Elias Adis Castro, who is currently living with the Indians, are watching this reaction carefully in hopes of uncovering ways and means of easing the change.

"In the Mazatec situation we have a compact, test tube case," Dr. Beals said.

Science News Letter, December 1, 1951

MEDICINE

Blood Vessel Trouble May Warn of Lung Cancer

► THROMBOPHLEBITIS, blood vessel trouble similar to that which attacked King George VI of England, should, if it recurs, be considered a warning sign of hidden cancer of the lung or some other internal organ, Dr. Martin M. Fisher of New York and Drs. Lew A. Hochberg and Nathan D. Wilensky of Brooklyn, N. Y., report in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Nov. 24).

They report four cases of lung cancer in men, three of whom were suspected of having thromboangiitis obliterans, also called Buerger's disease, and all of whom had more than one attack of thrombophlebitis.

Science News Letter, December 1, 1951

TECHNOLOGY

Aluminum Bulb Bases Save Critical Copper

► ALUMINUM IS being used in the bases of incandescent electric light bulbs instead of brass, thus saving critical copper for defense purposes, it was announced by General Electric's Lamp Department. In the future either metal can be used, depending upon which may be in least critical supply.

The lamps with aluminum bases are identical in life, efficiency and cost to the familiar brass-based bulbs. In addition they have the advantage of being resistant to tarnishing, and of maintaining a general better appearance. Aluminum also has excellent electrical properties, being two and a half times as good a conductor of electricity as brass.

Pure aluminum is not used in the new bulb bases. Instead it is a special alloy that will withstand the high temperatures used by machines on which lamps are assembled. To manufacture them a special solder and flux had to be developed which were suitable for use in a high-speed automatic operation.

Science News Letter, December 1, 1951

BIOCHEMISTRY

Sulfur Aids Wound Healing

Fast healing of wounds on the battlefield, in accidents or in the operating room aided by sulfur proteins in the diet, doctors report.

► SULFUR IN the diet is the key to fast healing of wounds on the battlefield, in accidents or in the operating room. The sulfur is eaten in the form of protein building blocks known chemically as amino acids.

The key role of the sulfur-containing amino acids for wound healing was announced by Drs. Martin B. Williamson and H. J. Fromm of Loyola University School of Medicine in a report to the American Chemical Society meeting in Chicago.

Not all amino acids contain sulfur. Those that do are found in the proteins of eggs, milk, wheat, corn and some other foods, Dr. Williamson said.

Wounds heal at a much faster rate when the diet is high in protein than when it is low in protein. But when a sulfur-containing amino acid is added to the low protein diet, wounds in laboratory animals healed at almost the same rate of speed as those of animals on the high protein diet.

The importance of the sulfur amino acids was also shown by a study of the sulfur balance. During the healing of a wound, this study showed, the sulfur compounds accumulate in the body, whereas proteins in general are lost by excretion faster than they are gained through the diet.

"This suggests," Dr. Williamson said,

"that the tissue proteins are being broken down, but that the sulfur-containing amino acids of protein are being conserved for the healing wound. It appears that during the stress reaction after wounding, tissue protein is being sacrificed to make a greater proportion of sulfur amino acids available for some process connected with healing."

Science News Letter, December 1, 1951

ENGINEERING

Electronic Brains Figure Metal Cutting by Machine

► ELECTRONIC "BRAINS" may soon be helping machine tool cutters. The computer will do the necessary figuring, then its results will be fed by punched tape into a machine that does the cutting.

Such a development is foreseen from work being done at the Massachusetts Institute of Technology, Cambridge, to make machine tools more useful.

Under development is a contour-shaping machine with a cutting tool whose position is controlled by digital information rather than the dimensions of a model, as used in presently existing automatic machine tools. From design drawings of how a part should look, engineers figure out over what path a cutting tool would have to move in order to form the desired surface. This line-path is then divided into very small parts—0.0005 inch long.

The correct angle for the cutting tool to go during a certain time in order to make such a minute path is computed. Since figuring this involves a large amount of routine computation, electronic "brains" will probably be used.

Information computed by the machine will then be fed into the "machine director" which will move the cutting tool just a tiny space. The tool, therefore, can never be more than 0.0005 inch in error.

The machine director controls the angular position of three separate servomechanisms.

Once properly punched, the paper tape provides a permanent control and may be used again and again to make the same shape. The new machine is particularly suited to making airfoil surfaces. It is also expected to be applied to template making, cam making and jig boring machines, Dr. Gordon S. Brown and William Pease of MIT report in THE TECHNOLOGY REVIEW (Nov.).

Science News Letter, December 1, 1951



"LIGHT" BULBS—Lamp bulbs have become "light" with the introduction of aluminum to replace brass made with scarce copper for their bases.