

MEDICINE

Stomach Cancer Link

► A LINK between stomach cancer and exposure to iron dust in work in metal industries was reported by Drs. Morton L. Levin and Paul R. Gerhardt and Arthur Kraus of the New York State Department of Health, Albany, at the American Public Health Association meeting in Atlantic City.

Polish birth, exposure to grain dust such as farmers encounter, and exposure to inorganic dust with free silica in such work as pick and shovel labor in road construction, each may also be linked with stomach cancer, the scientists reported.

Their findings were made in a study of 56 men with stomach cancer at Roswell Park Memorial Institute in Buffalo, N. Y.

The job histories of each were checked by industrial chemists to list the chemical and physical agents each man had probably been exposed to during his working life. Information on the 56 stomach cancer patients was compared with similar information on 677 other patients in the same hospital.

"Recorded or estimated occupational exposure to iron dust was significantly asso-

ciated with the stomach cancer group," the scientists report.

Of the stomach cancer group, 12.5% had been exposed to iron dust for ten or more years, compared to one percent of the non-stomach cancer patients.

The same difference was seen for exposure to grain dust, usually as a farmer, for five or more years after exposure to iron dust. The scientists believe the relationship more likely is with some other phase of farming than exposure to grain dust.

Of all the stomach cancer patients, 17.9% had been exposed to inorganic dust with free silica while doing pick and shovel work on roads, compared to 7.8% of the non-stomach cancer group.

Polish birth, also significantly associated with stomach cancer, may exert a greater effect if, in addition to being born in Poland, the man works where he is exposed to iron dust.

The findings, the scientists believe, are suggestive enough to warrant further large scale studies.

Science News Letter, November 24, 1956

ASTROPHYSICS

Polarized Nebular Light

► LIGHT ENERGY from the Crab Nebula, the expanding remnants of a supernova that exploded to a million times the sun's brightness nine centuries ago, is almost 100% polarized.

This discovery by Dr. Walter Baade of Mount Wilson and Palomar Observatories, Pasadena, Calif., confirms the suggestion that the light from this source results from streams of electrons moving in a magnetic field, an atom smasher working on a gigantic scale.

In September, Dr. Baade obtained photographs through polaroid with yellow light that showed nearly complete polarization in many areas of the Crab Nebula, which is also a source of radio waves.

These studies were later confirmed by Dr. William A. Baum, also of Mount Wilson and Palomar, and Dr. Fritz Zwicky of California Institute of Technology, which operates the Observatories jointly with the Carnegie Institution of Washington.

Dr. Baade also investigated the polarization in another source of radio waves, the jet in M87. He found three strong condensations in the outer part of the jet are clearly polarized, although effects in the main jet are masked by the strong light from the central region.

There are two possible sources for the electrons that, when accelerated by synchrotron action, may cause the light emission in the Crab Nebula, Dr. Jesse Greenstein of Mount Wilson and Palomar Observa-

tories suggests. One is the spontaneous break-up of sub-atomic mesons produced by nuclear reactions resulting from bombardment by heavy cosmic ray particles. The second is from thermonuclear, or fusion, reactions in colliding gas masses.

The discovery of polarization in the Crab Nebula also initiates speculation concerning the origin of cosmic rays.

The studies are outlined in the annual report of President Lee DuBridge of the California Institute of Technology.

Science News Letter, November 24, 1956

PUBLIC HEALTH

TB Infects 1 Per 100 Per Year in Some Places

► TUBERCULOSIS in some parts of the country is infecting people at the rate of one person per 100 population per year, Donald Trauger of the National Tuberculosis Association, New York, has reported.

"These observations have been made with children as subjects," Mr. Trauger pointed out. "In the light of present knowledge, this means that these children face a lifetime of living with an infection that seldom loses its potency."

Although fewer people are dying of TB than in years past, more than 15,000 still die of it each year. In people over 65, one death is reported for every two cases.

Science News Letter, November 24, 1956

PHYSICS

Big H-Bomb Stockpile No Strength Guarantee

► THE NATION that has 1,000 hydrogen bombs is not in a stronger position in most strategic situations than the nation with only 200, Prof. P. M. S. Blackett, Nobelist in physics, of Imperial College, London, states in "Atomic Weapons and East-West Relations." (See page 332.)

The lack of advantage of the bigger H-bomb stockpile is due to the H-bomb's destructive power.

The British scientist, who has worked on atomic energy, believes all-out total war between East and West is unlikely since he thinks that a strategic atomic stalemate already exists.

To protect the United Kingdom from H-bomber attacks, more than 99 percent of the invading planes would need to be shot down, he writes. He concludes that this is impossible, based on Second World War experience and American estimates that as few as 20 percent of planes in a Russian atomic attack would be destroyed.

"Troops, guns, tanks, air and land transportation and tactical air power are now more important than atomic bombers or active defense systems against them," Dr. Blackett states.

"With the period of atomic parity approaching, the interests of East and West are coming much closer. Although outlook for disarmament agreement looks black, outlook for actual disarmament looks good."

Science News Letter, November 24, 1956



TESTING PRESSURE SUIT—Pilots of the supersonic age wear special clothing to protect themselves against sudden cockpit depressurization. Here John Konrad, chief test pilot, enters the cockpit of a Chance Vought F8U-1 Crusader to try out a new Navy high-altitude pressure suit.