

MEDICINE

Pregnancy Improves Strange Disease

► WOMEN with sarcoidosis, an unexplained disease producing tumor-like lesions in nearly every part of the body, improve temporarily during pregnancy. This indicates the disease may be one of hypersensitivity, like hay fever and rheumatoid arthritis.

This was reported by Drs. Robert L. Mayock and Roy R. Greening, Hospital of the University of Pennsylvania, Philadelphia, Dr. Robert D. Sullivan, Veterans Administration Hospital, New York, and Dr. Ralph Jones, Jr. of Jackson Memorial Hospital, Miami, Fla., in the *Journal of the American Medical Association* (May 11).

The exact cause of sarcoidosis has puzzled physicians for years. It is a chronic infectious illness, believed by some to be caused by tuberculosis.

But studies of 10 pregnant women with sarcoidosis showed that pregnancy affected sarcoidosis and TB quite differently, and that the same drugs used in hypersensitivity seemed to help in sarcoidosis cases.

Eight of the 10 patients improved during pregnancy in contrast to TB patients who either show no improvement or get worse during pregnancy.

This improvement in sarcoidosis during pregnancy rules out TB as a cause unless the "ancient argument" of a "different" kind of tuberculosis is used, the researchers reported.

Usually, after the pregnancy, the beneficial effect is lost, they said, but this same thing happens in hypersensitive cases.

The improvement was noted in the sarcoidosis cases when they were treated with synthetic adrenal hormones which have worked in hypersensitivity diseases. The change during pregnancy may be due to an increase in the body's production of this hormone, they reported.

Science News Letter, May 25, 1957

BIOLOGY

Blood Chemicals May Cure High Blood Pressure

► A CHEMICAL that will block the body's use of hypertensin I and hypertensin II may be the cure for high blood pressure, man's greatest killer, a group of heart scientists at the Veterans Administration Hospital, Cleveland, Ohio, believe.

Hypertensin is the substance in the blood thought to be the actual cause of high blood pressure. Its existence in the blood was demonstrated for the first time by Drs. Joseph R. Kahn and Leonard T. Skeggs Jr., of the hospital, and their associates in 1951. Since then they have isolated the substance and purified it.

Two distinct types of hypertensin have been found. Hypertensin I, formed from renin which is released from the kidneys, is relatively harmless. It is present in tiny amounts in the blood of normal people and

in only slightly larger amounts in persons suffering from high blood pressure.

But hypertensin II has a tremendous potency for constricting blood vessels and causing high blood pressure. It is formed when an enzyme in the blood acts on the hypertensin I, converting it into its more powerful form.

The researchers are now looking for a chemical which will either block hypertensin II's ability to constrict blood vessels, inhibit the conversion of hypertensin I into hypertensin II, or stop the production of hypertensin I itself.

The work was reported by the Veterans Administration.

Science News Letter, May 25, 1957

AGRICULTURE

Selective Weed Killers Help Legumes Grow

► MILLIONS of acres of underseeded legumes will be off to a healthier start in future years, thanks to two selective weed killers developed by the U. S. Department of Agriculture.

The herbicides, 4(2,4-DB and 4(MCPB), gave excellent control of weeds in amounts which resulted in little or no injury to either legumes or small grains.

An estimated 36,000,000 acres of small grains, such as wheat, oats, barley and rye, will be underseeded with legumes this year.

Science News Letter, May 25, 1957

BIOLOGY

Antibodies Increased In Breast Feeding

► BREAST FEEDING may enjoy new popularity with the discovery of another vitally important function of the body's milk-producing glands, antibody production.

In cows, the glands can produce and return antibodies to the bacteria in nursing calves with extraordinary speed, Drs. Berry Campbell, Mohammad Sarwar and William E. Petersen, University of Minnesota, Minneapolis, reported in *Science* (May 10).

In the process of nursing, the bacteria present in the mouth of the calf are injected into the mother's milk glands and cause an immediate antibody response. These antibodies are then transferred to the offspring through the milk.

Tests with bacteria put in the mouth of a suckling calf showed the mother's milk glands had manufactured antibodies within four hours.

This process, which the authors term "diathelic immunization," makes available a large amount of antibody-forming tissue to the offspring during the time his own antibody-making system is still developing.

This reduces the problem of survival from the great number of dangerous bacteria to which the offspring are exposed, and suggests that this antibody-forming ability may be more important than the mere production of a nutrient.

Science News Letter, May 25, 1957

IN SCIENCE

PUBLIC HEALTH

Begin Surveying National Health

► THE NATIONAL Health Survey has begun with Government interviewers visiting selected households all over the country to get first hand information about the nation's health.

The interviewers are asking about illness in the family, about accidents and injuries, disability, hospitalization, and medical and dental care. Three thousand homes will be visited every month, and the data collected will be compiled to give an overall picture of the incidence of illness and disability in the U. S.

The survey is a most important forward step in the health field, Dr. Leroy E. Burney, Surgeon General of the Public Health Service, reported.

Doctors, research workers, insurance companies and other groups have urgently needed facts on the health of the general population for many years. The National Health Survey represents the first time in 20 years that an effort has been made to collect these facts on a comprehensive basis, Dr. Burney said.

The information collected will include statistics on the number, age, sex, and other personal characteristics of people suffering from ill health, how long they have been disabled, and how much medical and dental care they have received.

Science News Letter, May 25, 1957

ENTOMOLOGY

Egg-Laying Stopped In Female Housefly

► CHEMICALS that completely prevent the female housefly from laying eggs hold promise of man's winning the fight against these insects.

K. R. S. Ascher of the Medical Research Laboratories, Israel Defence Forces, Israel, reports he was able to prevent egg-laying in a highly resistant strain of houseflies by the use of two fluorocarbon contact insecticides applied to the insects' legs.

Various methods of exposure to the insecticide were found to be effective in producing either no, "very low" or "negligible" egg-laying during the flies' entire lifetime. Dissection of females continuously exposed to the compound, Dr. Ascher reports, showed the ovaries had developed normally and contained eggs.

"We have thus a case of 'forced retention,'" of the eggs, observes Dr. Ascher.

Further details concerning this method of decreasing the fly population appear in *Science* (May 10).

Science News Letter, May 25, 1957

CE FIELDS

TECHNOLOGY

Machine Does Fast Blood Sampling

► AUTOMATION is overtaking even the highly trained medical laboratory technician. He may be replaced by a table top full of gadgetry that can run through a blood analysis in almost less time than it takes to prick a finger.

Called the Autoanalyzer, the machine was one of the newly developed pieces of equipment for medical research on display at the annual research equipment exhibit at the National Institutes of Health in Bethesda, Md.

The Autoanalyzer can be loaded with a batch of 60 blood samples which are consecutively fed through the six sections of the machine and tested for such contents as sugars, calcium and urea. A skilled lab technician might spend as much as a full day doing what the machine accomplishes in one hour.

The heart of the analyzing section is a photoelectric colorimeter that compares the color of the chemically treated sample with a standard sample of known content. The photocell registers the difference in color between the two and indicates it with a red line inked on moving graph paper.

The most important characteristic of the new device is that it can be used for continuous testing, E. C. Whitehead of the Technicon Co., Chauncey, N. Y., developers of the automatic analyzer, told SCIENCE SERVICE.

For medical research, a tube could be left in the patient for continuous blood sampling and analysis. Or, in industrial plants, a continuous monitoring could be made of chemical processes, he said.

More than six years in the making, the Autoanalyzer sells for approximately \$3,500, and delivery of the first batch of 25 of the machines will take place about June 1.

Science News Letter, May 25, 1957

PSYCHIATRY

Psychiatrist Must Be Historian, Sociologist

► THE PSYCHIATRIST who treats the illnesses of the mind must not only be skilled in medicine, he must also be an historian and interpreter of the times and experienced in the science of man, Dr. Francis J. Braceland of Hartford, Conn., told his colleagues in his address as president of the American Psychiatric Association at its meeting in Chicago.

Psychiatry, he said, has at various times been governed by exclusively biological conceptions or exclusively mentalistic conceptions and this has tended to make the pro-

fession one-sided at any given moment.

The present strong turn to the biochemical must be tempered in order to avoid the errors of the past and failure to make use of the remarkable insights which have come from medical psychology and the social sciences.

The psychosomatic aspect of man cannot be separated from the mental aspect. His personality and behavior cannot be understood apart from his social relationships. His past is part of the man as he exists now. And so, too, is the general cultural atmosphere in which he lives.

Science News Letter, May 25, 1957

MEDICINE

Arthritis Drug Effective For Rattlesnake Venom

► HYDROCORTISONE has been found to be an antidote for the poisonous bite of a rattlesnake, a research team from the University of Miami's School of Medicine, Coral Gables, Fla., told the Federation of American Societies for Experimental Biology meeting in Chicago.

The drug, used widely to treat arthritis, increased the number of experimental animals surviving an injection of rattlesnake venom, from 17% in untreated animals to 75% in treated animals.

The administration of hydrocortisone, the researchers said, did not influence the local effects such as pain and rupture of the skin. This suggested, they said, that the local and systemic effects induced by rattlesnake venom are two distinct mechanisms.

The beneficial action of the hydrocortisone as an antidote for rattlesnake venom "is not understood at present."

Drs. William B. Deichmann, John E. Dees, M. L. Keplinger, John J. Farrell and William E. MacDonald Jr. reported the research to the meeting.

Science News Letter, May 25, 1957

TECHNOLOGY

Army to Have Mobile Atomic War Centers

► A ROLLING communications center designed to coordinate combat units in an atomic war has been developed by the U. S. Army Signal Corps.

Housed in 13 vans, trucks and tents within the vans, the Tactical Support Center (TSC), as it is called, utilizes radio, teletypewriter, telephone, television and facsimile. In combat, an Army commander will be able to cope with the expected complexity of a nuclear battle by being in touch with all his units and supporting teams in a matter of seconds.

The Center is organized into five major organizational sections: the control center, the direct support aviation section, the electronic warfare section, the artillery section and the air defense section.

It is foreseen that the Center will also make use of an electronic computer.

Science News Letter, May 25, 1957

MEDICINE

Bicarbonate Injections Stop Motion Sickness

► INJECTIONS of sodium bicarbonate can prevent motion sickness for up to one month after the injection, Dr. Minoru Muta, Osaka, Japan, reported to the International Congress of Otolaryngology meeting in Washington.

In an earlier study of 100 people susceptible to either air, sea or car sickness, the bicarbonate solution was completely effective in 69 cases, partly effective in 23 cases and failed in only eight cases.

Hearing tests showed no significant changes in the ordinary functions of the inner ear, Dr. Muta reported, but the after-sensations following an exposure to rotation were definitely reduced.

The bicarbonate solution works because it creates a change in the amount of potassium in the fluid circulating in the inner ear, which is responsible for sensations of motion being transmitted to the brain, Dr. Muta explained.

He suggested other solutions, such as sodium phosphate, sodium citrate and atropine, can also reduce the potassium concentration of the ear fluid and should be grouped together as a type of motion sickness preventives.

Science News Letter, May 25, 1957

BIOLOGY

Adrenal Glands Protect Against Liver Cancer

► HORMONES DISCHARGED by the adrenal glands can control experimental liver cancer in rats, Drs. John DaVanzo and W. J. Eversole, University of New Mexico, have found.

The scientists used a strain of rats which quickly develops liver cancer when fed butter yellow, a dye used to color butter. The dye is not used in the U. S.

In animals without their adrenal glands, the cancer-causing dye was fatal within four or five months. But if they were protected with a large dose of DCT (desoxycorticosterone trimethylacetate), a substance related to the natural hormones produced by the adrenals, 85% of the animals were cancer-free at the end of that time.

One injection of DCT can maintain animals without adrenals for months and will protect adrenal-less rats from liver cancer, the researchers found.

The adrenals, or "stress glands," are nut-size glands. One lies on top of each kidney. They manufacture many hormones and enable both humans and animals to cope with the strain of emergencies.

One of the hormones, epinephrine, is the most powerful heart stimulant known. Another, cortisone, is used in the treatment of arthritis.

The research was reported by the American Cancer Society which supported the work.

Science News Letter, May 25, 1957