age. This is at present purely speculative. Many more experiments are necessary. But those who breed animals for man's use or food may be able eventually to accelerate production enormously through use of thymus extracts.

Dr. Hanson who prepared the potent extract had previously given to the world a powerful extract of the parathyroids, tiny glands in the neck which govern bone formation. Because his extract was reported in a little-known medical journal, a Canadian scientist, Dr. J. B. Collip of McGill University, was credited with having first extracted the parathyroid hormone. But Dr. Hanson was able to prove his claim to priority and was awarded a patent for his product. Unselfishly sacrificing his chance for personal profit in the interest of the advancement of science, he assigned to the Smithsonian Institution in Washington all income and royalties accruing to him under the patent.

Three years ago Dr. Rowntree, then at the Mayo Clinic, gave the first dose of cortin to a human patient suffering from then-hopeless Addison's disease. His clinical use of the hormone extracted by Princeton University scientists from the adrenal gland cortex was the first application of this important substance for the saving of human life.

Science News Letter, May 12, 1934

PHYSIOLOGY

At Least Three Vitamins Still Await Discovery

DISCOVERIES of new vitamins and further effects of gland hormones were predicted by Dr. E. V. McCollum of the Johns Hopkins University and Dr. Oscar Riddle of the Carnegie Institution of Washington, who were presented gold medals of the American Institute in recognition of their researches.

"There is little reason to doubt that at least one new fat-soluble vitamin remains to be discovered," Dr. McCollum said, "and probably at least two more water-soluble vitamins exist."

Dr. McCollum discovered vitamin A in 1913, and since has been a leader in nutrition research.

All the main elements of hormonal control of reproduction appear now to be known, Dr. Riddle declared, in emphasizing that the women of the present generation are the first who could possibly know and learn the basis and the meaning of the cycles and adjustments which are peculiarly theirs. Not one of the four hormones chiefly involved in human or animal reproduction had been separated or assayed twelve years ago and the most recently separated is less than three years old.

Dr. Riddle, working at Cold Spring Harbor, N. Y., extracted the prolactin hormone from the anterior pituitary gland, demonstrated the thymovidin hormone of the mysterious thymus gland, and has done other important glandular researches.

Many new and spectacular researches in nutrition will come to light during the next ten or twenty years, Dr. McCollum believes. The recent discovery that paprika is a rich source of ascorbic acid or vitamin C suggests that research among plants of unusual or specialized structure may prove fruitful.

Sodium, calcium, magnesium, chlorine, iodine, phosphorus, sulfur, iron, copper and manganese are known to be indispensable in the diet. Yet with the exception of calcium, phosphorus and magnesium very little is known of the roles played by these essential substances.

Important as are the applications of nutrition discoveries to human health and well-being, as in the prevention of rickets, beri-beri, infantile scurvy and pellagra, Dr. McCollum foresees other advantages to be derived from them. Profits from the raising of farm animals may be increased enormously by applying present knowledge of proper feeding.

Science News Letter, May 12, 1934

PHYSICS

It's Raining Radium—But Not Much

RAIN BRINGS down radium, washing it out of the air, G. R. Wait and A. G. McNish of the Carnegie Institution of Wahington told members of the American Physical Society. But you need not go out with a bucket the next time it rains, for the quantity is exceedingly minute—to be measured only with delicate instruments that tell of the electrified or ionized state of the air. With such an instrument in the open near their laboratory, the two physicists found that as the rain began the ionization of the air increased rapidly, to fall off again when it stopped.

The decrease with time was of such a character, they said, "as to be explainable by assuming that decay-products of radium, principally radium B and radium C in equilibrium with it, are carried to the earth's surface by rain."

Science News Letter, May 12, 1934

PHYSICS

Penetrating Rays Sprayed Up From Thunderclouds

PENETRATING radiations resembling cosmic rays, but "softer," are thrown upward into the air from the tops of thunderstorm clouds, like spray from the tops of waves. They come to earth again to the eastward of the cloud, drawn down by the earth's magnetic field.

These radiations, which are made up of speeding negative electrons, were described before the meeting of the American Geophysical Union by Dr. B. F. J. Schonland, noted South African student of the physics of the air, who is visiting in the United States.

Dr. Schonland stated that when he began his investigations of penetrating radiations caused by lightning, he thought he would find electrons poured directly earthward as well as upward into the higher levels of the air; but this proved not to be the case. He has found that lightning-engendered radiations can influence cosmic-ray detecting instruments as much as a thousand miles away from a thunderstorm, and he stated that another investigator claims for them an even greater radius of action. But their effect is always felt to the eastward of the storm that gives them birth, never toward the west.

The research was undertaken with

the idea of finding out whether cosmic rays were entirely the product of thunderstorms, as one student of the subject had claimed. Dr. Schonland is convinced that this is not the case; nevertheless, there are enough lightning-caused penetrating radiations to make it necessary for researchers on cosmic rays to take them into account, if their figures are not to be falsified by thunderstorms.

Science News Letter, May 12, 1934

PUBLIC HEALTH

Dean of American Medicine Defined "New Public Health"

Dr. Welch, Before His Death, Summarized for Posterity Lessons of Fight for Better Health Which He Led

See Front Cover

Before his death in his 85th year on April 30, Dr. Welch recorded phonographically at the request of Science Service an evaluation of the great crusade for a healthier nation, a campaign that he led so effectively. His words have added meaning as the nation mourns him.

By DR. WILLIAM H. WELCH

WE OWE primarily to the anti-tuberculosis crusade the development of "the new public health," characterized especially by efforts to educate the people in matters of public and personal hygiene. . . .

It is evident that a crusade directed in the first instance against a single disease, without losing sight of its immediate goal, has assumed in recent years the proportions of a general health movement and this not merely on the negative or preventive side, but even more on the positive side of improvement of the health and increase of the vitality of the whole community.

These newer directions of public and individual health, started by the anti-tuberculosis campaign, have been reenforced and greatly expanded by similar popular movements organized to promote maternity, infant and child hygiene, social hygiene, mental hygiene, the control of cancer, the prevention and relief of heart disease, and the end of like beneficent movements is not yet in sight.

Among the great lessons taught by these recent health movements is the necessity of securing by popular edution the cooperation of all the forces of society, both governmental and voluntary, in support of efforts of health departments and of the medical profession to prevent disease and to improve health.

Another lesson is that the attack upon one disease may have incidental and often unexpected benefits not to be measured solely by lessening the incidence of the disease which is the immediate object of attack.

Still another lesson is that existing social, industrial and economic conditions set limits to what is at present attainable in the field of disease prevention.

The most important lesson of all is that success is dependent upon accurate knowledge concerning the causes and mode of spread of preventable diseases, and that hope of the future lies in the increases of useful knowledge by the methods of experimental science.

Science News Letter, May 12, 1934

MEDICINE

Vaccination Against Parrot Fever

THE heroic sacrifices of life and health made by workers in medical laboratories throughout the world have aroused universal sympathy and admiration. News that hazards faced daily by these self-sacrificing men and women are gradually being lessened is particularly heartening.

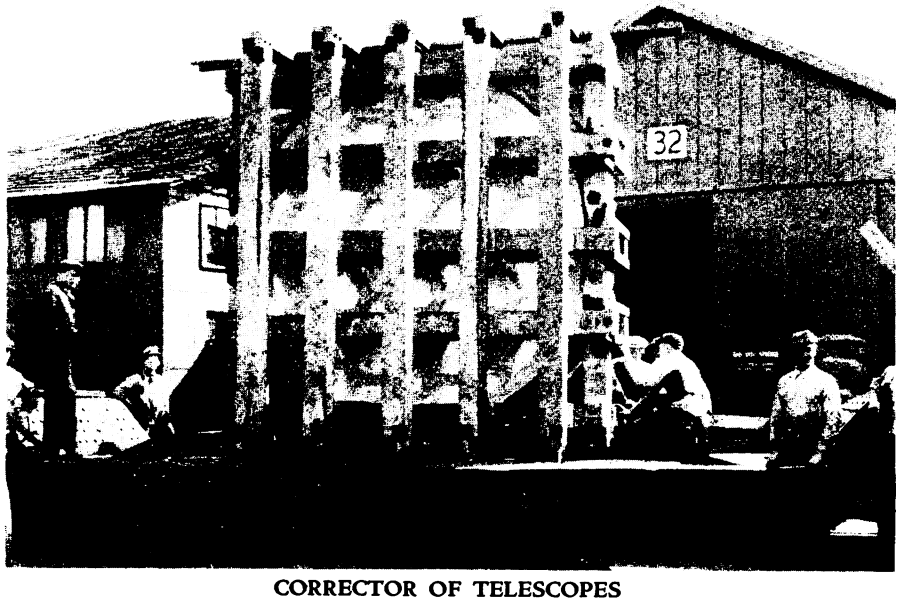
The latest achievement is protective vaccination against psittacosis or parrot fever, announced by Dr. Thomas M. Rivers of the Rockefeller Institute for Medical Research in New York City.

Seven laboratory workers have already been vaccinated. Five or six doses of live virus varying in strength from 10,000 to 10 million times the dose that will kill a mouse were injected into their muscles in order to establish in these workers a resistance to the dangerous organism which causes the disease.

Parrot fever has been particularly hard on laboratory workers who promptly met the challenge of this new and mysterious malady when it broke out all over the world in 1929, following the distribution of diseased parrots from Argentina and Brazil in that year.

Eleven cases developed at the U. S. Public Health Service's National Institute of Health in Washington.

Science News Letter, May 12, 1934



CORRECTOR OF TELESCOPES

The 120-inch disc, the largest to reach this stage of completion, is safely designed, cast, annealed, tested, and shipped to the California Institute of Technology where it will be ground to a plane for testing the 200-inch mirror. It was cast at the Corning Glass, Works, preparatory to pouring the glass for the great 200-inch mirror.