what they are doing and what they plan to do to protect and further the interests of men as they must live in this disturbed world with a sense for man-science and culture.

Science News Letter, June 21, 1941

MEDICINE

Number of White Blood Cells May Predict Length of Life

Strains of Rats With Low Average White Blood Cell Counts Found to Have Shorter Lives Than Others

PREDICTION of the length of a person's life may, in future, be made from a count of the number of white cells in his blood. This possibility (and so far it is only a possibility) appears from a discovery announced by Dr. Carl Reich, of Lenox Hill Hospital, and Dr. W. F. Dunning, of Columbia University. (*Science,* May 2.)

In rats, they discovered, long life goes with a high count of white blood cells, and particularly with a high count of the type of white blood cells called "neutrophile polys." Strains of rats with low average white cell counts had shorter life spans than strains with high white cell counts.

The white blood cells, and especially the neutrophiles, make up an important part of the body's defenses against invading disease germs.

Sex differences associated with length of life were in accord with the findings. The females had a significantly higher white cell count than the males, and females of most of the strains of rats studied had significantly longer life spans.

Whether or not long life in humans is related to or depends on the number of white cells in the blood, and if so, what can be done about predicting length of life from the blood count or lengthening life by artificially increasing the number of white cells, are questions for the future to answer. In humans, according to one authority, men have higher white counts than women, although the average life span is longer for women than for men. This seems to conflict with the findings in the rats but further study may shed light on this.

Science News Letter, June 21, 1941

PHYSIOLOGY

Gland Extract Added Inches To Height of Dwarfed Boy

THE effect of a gland extract on growth in height was strikingly demonstrated in the case of dwarfed twin brothers reported by Dr. George B. Dorff, Bellevue Hospital, New York City, at the meeting of the Association for the Study of Internal Secretions in Atlantic City.

The gland extract, a sex gland stimulating chemical from the pituitary gland, was given to one of the boys but not to the other. Both were sexually infantile as well as dwarfed. During a period of four and one-half years before the treatment, they grew about seven and one-half inches. Although they were identical twins, developed from the same original egg cell, one of the boys was always about three-fourths of an inch shorter.

When this slightly shorter of the two was given the sex gland stimulating hormone from the pituitary gland, he grew four inches in one year, becoming the taller of the two. The untreated twin brother grew only one and one-fourth inches during the same year.

The crystalline male sex hormone, testosterone propionate, markedly accelerated growth in height and weight of seven out of nine undersized boys and young men, Dr. J. S. L. Browne and Dr. Alan Ross, of Montreal, reported.

Two of the boys grew about three inches in six months when given twice weekly injections of this hormone. Definite signs of the growth-stimulating effect of this synthetic male hormone appeared after two months of treatment in a 24-year-old man whose height before treatment was four feet eight inches.

Science News Letter, June 21, 1941

BOTANY

NATURE RAMBLINGS by Frank Thone

Long-Lived Seeds

THE OLD adage, "One year's seeds means seven years' weeds," will have to be revised—upward. One year's seeds can mean sixty years' weeds, in a few species at least. That is the survival time for seeds of curly dock, evening primrose, smooth mullein and night-flowering catchfly in one of botany's classic experiments, reported by Prof. H. T. Darlington of Michigan State College. (*American Journal of Botany.*)

Sixty years ago a former professor of botany at the college, Dr. J. W. Beal, buried twenty pint bottles, each containing a thousand assorted weed seeds mixed in sand. The idea was to dig up one bottle every five years and find out how many seeds were still viable, and what species they represented.

This five-year schedule was kept up until twenty years ago, when it was decided to make the experiment last longer by digging up the bottles at ten-year intervals. Prof. Darlington has been carrying on the project since 1915.

Of the twenty species originally put away, only four germinated in this latest test. Even these four do not represent a perfectly smooth score, for it was thought that the mullein seeds originally put into the bottles were all of the ordinary woolly species. But the smooth mullein is what came up this time, and also ten years ago, though it had not appeared in any of the earlier plantings. And the catchfly plants are something of a mystery, for there is no record of their seeds having been included at all.

Two species that survived up to the fiftieth year, black mustard and water smartweed, failed to germinate this time.

Species that lasted forty years but were missing at the half-century mark included pigweed, ragweed, peppercress, plantain and purslane.

There are still eleven bottles buried in the soil of the State College campus. If the ten-year interval schedule is kept up, the end of the experiment will not be reached until the middle of the twenty-first century.

Science News Letter, June 21, 1941

MEDICINE

Test Hopeful Chemical Treatment of Tuberculosis

THE first group of tuberculosis patients to be treated with promin, new sulfa drug which Mayo Clinic scientists have found a promising remedy for tuberculosis in guinea pigs, will have to be followed for at least one year before the doctors will know whether or not this drug can "cure" tuberculosis in humans as it does in guinea pigs.

Small doses of this drug can be safely given to patients, Dr. H. C. Hinshaw reported to the American Medical Association.

This much, but no more, has been learned from a careful trial in a limited number of patients during the last two months. This trial followed extensive trials of the remedy in guinea pigs infected with human tuberculosis germs. The drug apparently eradicated the disease in guinea pigs, Dr. W. H. Feldman had previously reported. The disease in guinea pigs, even though produced by the same germ as causes tuberculosis in humans, is, however, an entirely different disease, the Mayo Clinic scientists emphasize.

Promin, which is a sugar-containing relative of sulfanilamide, has not yet been released for general distribution. It is a "definite poison," Dr. Feldman said, and must be handled with discretion as is the case with many other drugs.

Finding a dose that can be safely given to humans is therefore considered something of a triumph for its first two months of clinical trial, but it is far too early to say whether or not it will benefit these tuberculosis patients. In fact, it is too early even to expect to find evidence of any effect of the drug in X-ray pictures of the lungs. Doctors generally set three months as the interval between X-ray pictures to check on the course of tuberculosis and these patients have only had promin for two months.

Tuberculosis patients and their relatives are warned not to hope for too much from the first report of clinical use of this drug, and not to expect to be able to get it.

Promin has also been tried on patients suffering with various other ailments such as pneumonia and staphylococcus and streptococcus infections. The results were encouraging but Dr. Hinshaw believes that other sulfa drugs are perhaps a little better in pneumonia and that there is no reason to change to promin treatment in this disease.

Science News Letter, June 21, 1941

ENGINEERING

Substitutes in Automobiles Superior in Many Instances

SUBSTITUTE materials adopted for automobile parts, because the old materials are needed for defense, in some cases "will stay permanently after the emergency is over, since they will have time to prove their worth, demonstrating hitherto undiscovered qualities," Thomas A. Bissell, Technical Editor of the S. A. E. Journal, told the Society of Automotive Engineers.

"In addition," he added, "the cost of many of these parts will have been lowered through design and production development. This is one of the brightest spots in the picture since the exigencies of the emergency will force many developments that would not have been made under normal conditions."

Pointing out some of the difficulties encountered, he said: "In considering alternate materials for certain parts in the automobile, engineers working for the best interests of national defense often find themselves in a dilemma. Substitution of the alternate material will release a relatively small amount of material needed for defense, when compared with that released by replacing other parts, but production of the alternate parts requires extra machining and processing, entailing additional machine tools, machinists, and other skilled labor needed just as urgently in defense industries as is the critical material itself.

"The example most often cited to illustrate this problem is that of carburetors made of critical zinc alloy versus those of alternate cast iron. The zinc-alloy carburetor die castings weigh little when compared with zinc-alloy radiator grilles; also, they require virtually no machining or processing. Cast iron carburetors, on the other hand, would require additional batteries of machine tools to perform the necessary finishing, drilling, and facing operations."

Science News Letter, June 21, 1941

MEDICINE

Prevention of Diabetes Possible, Dr. Best Suggests

A REQUEST to American doctors to carry on war-interrupted efforts of Canadian scientists to test on humans a promising method of diabetes prevention was made by Dr. C. E. Best, of Toronto, co-discoverer of insulin, and his associate, Dr. H. E. Haist,, at the meeting in Cleveland, for the first time anywhere, of the newly-organized American Diabetes Association.

By giving insulin, a diet high in fat content, and also by fasting, the Canadian scientists have succeeded in preventing diabetes in dogs. By any of these procedures the amount of insulin in the dog's pancreas is reduced, indicating that the insulin-producing cells of the pancreas are being given a chance to rest. Overwork of these cells with consequent breakdown of insulin-producing ability results in diabetes.

The hereditary tendency to diabetes has been so well established that Dr. Best and his associate believe the measures which prevented diabetes in dogs should be tried, under carefully controlled conditions, to protect children of diabetic ancestry from developing the disease. They have not been able to make such a trial, Dr. Best explained, because