

NUTRITION

Prevention of Obesity

► AN OUNCE of prevention will save nine excess pounds. This mixing of two old sayings roughly sums up the findings of Dr. Charlotte M. Young of the Cornell University School of Nutrition, Ithaca, N. Y., regarding the problem of overweight, or obesity.

"Since success in reducing weight, even under the best of circumstances, seems to be limited, the only real answer to the problem would seem to be prevention of obesity in the first place," she states in reporting results at an experimental community nutrition clinic.

The clinic was operated for more than two years under the sponsorship of the Tompkins County Medical Society, the Tompkins County Health Department and the School of Nutrition. The clinic services were free but all residents of the county could come, whether able to pay or not, if they had a letter from their personal doctors.

All kinds of nutrition problems could be brought to the clinic. Some 168 overweight persons came.

A physician and a nutritionist were on the staff. Each patient could be seen every week. Conditions were made as favorable as possible for maximum success in weight loss for the patients.

Success in weight loss "cannot be called good," Dr. Young reports, although the results were as good or better than those reported in similar studies from other places.

Only about one-tenth of the patients reached their ideal weight. About one-fourth were "reasonably successful in weight reduction." Another fourth had some success. A third fourth had very little success, while the remainder were complete failures in weight reduction.

Success was measured in terms of attendance at the clinic and interest in it, disappearance of many bodily symptoms and complaints, and gain by some patients of understanding of the cause of their overweight.

Success in weight loss, Dr. Young found, seemed related to the age at which the person became overweight, rather than the length of time he had been overweight. Those who became obese as children were more difficult to treat than those who gained too much weight as grown-ups.

On the preventive angle, Dr. Young recommends the following:

Meals streamlined in calories and planned regular physical activity for modern, more or less physically inactive lives.

Discovery of other ways than eating to relieve the boredom of many persons, particularly in the middle years of life.

Dr. Young reports her findings in *Farm Research* (April), published by the New York State Agricultural Experiment Station and Cornell University Agricultural Experiment Station.

Science News Letter, May 19, 1956

GENETICS

Better Wheat Foreseen

► THE EXACT CHARACTERISTICS imparted to wheat by each of its 21 pairs of chromosomes have been found.

This discovery, made by Dr. E. R. Sears working cooperatively with the U. S. Department of Agriculture and the Missouri Experiment Station, will enable scientists to "tailor make" wheat to their own specifications.

The new knowledge will permit plant breeders to grow wheat that can withstand severe winters and resist disease. It may even enable scientists to produce a strain of wheat easier to process.

Chromosomes are tiny rod-like carriers of plant character in the plasm of each reproductive cell. Common wheat has 21 pairs of these. Dr. Sears' experiments, which were started about 15 years ago, show what the presence or absence of any given pair of chromosomes will do.

Absence of one chromosome, for example, was found to reduce the plant height about 30%, darken the husks and reduce the plant's fertility about 75%. Another chromosome, Dr. Sears learned, inhibits the growth of awns, or beards.

Dr. Sears performed his experiments on Chinese spring wheat plants that had lost one or more of their chromosomes during the formative stage.

Plant geneticists at the Department of Agriculture say the new knowledge will enable them to recombine heredity factors, or genes, to make superior varieties of wheat.

Science News Letter, May 19, 1956

HEMATOLOGY

Diagnose Chickenpox By Blood Protein Change

► CHANGES in certain blood protein constituents in chickenpox are so characteristic they could be used for diagnosing the disease, Dr. V. N. Krishnamurthy of the Government Vaccine Institute, Bangalore, India, finds.

The characteristic changes are an increase of some two-fold in beta globulin and increases in alpha 2 globulin and gamma globulin in the blood serum.

Albumin in the blood serum is decreased

relatively. This, Dr. Krishnamurthy thinks, is perhaps due to not eating enough as a result of fever.

The increase of alpha 2 globulin is associated with tissue or cell destruction in the body, so is to be expected in chickenpox. So is the increase of gamma globulin, which is known to increase in virus diseases producing a lasting immunity, as is the case in chickenpox.

Why the beta globulin increases in chickenpox is more puzzling. It may, Dr. Krishnamurthy suggests, be the result of increased fragility of red blood cells, which he has also noted in the blood of chickenpox patients.

The characteristic blood protein changes were found in 40 patients with chickenpox whose blood serum was studied by the paper electrophoresis method. The findings are reported in the German scientific journal, *Die Naturwissenschaften* (April 1).

Science News Letter, May 19, 1956

TECHNOLOGY

Turbine Research At Technical Center

See Front Cover

► ONE SPECIAL PURPOSE building at General Motors Technical center near Detroit is the Gas Turbine Research building shown in the photograph on the cover of this week's SCIENCE NEWS LETTER.

Exhaust stacks are connected with seven test cells used for both automotive and aircraft turbines. In the foreground is the GM Turbocruiser, an experimental turbine-powered transit bus.

The Technical Center occupies a 330-acre area and includes 25 buildings in which more than 4,000 engineers, scientists and technicians work.

Science News Letter, May 19, 1956

INVENTION

Cotton Gin Waste Pelleted for Feed

► A METHOD for mixing cotton gin waste with molasses, then making pellets of the mixture for feeding such animals as cattle, sheep and goats has been patented.

The pelleted product using gin waste is "equal or superior to conventional grains in feeding qualities," Albert Lent, Tucson, Ariz., claims. He assigned rights on patent No. 2,744,824, awarded for the development, to Erly-Fat Livestock Feed Co.

Cotton gin trash consists largely of indigestible cellulose. Mr. Lent found that when the waste was finely ground, mixed with 25% to 50% by weight of molasses and pelleted, its food value was comparable to standard concentrates.

The molasses, Mr. Lent says, aids in the pelleting, makes the waste palatable, and promotes the growth of microorganisms in the animal's rumen.

Science News Letter, May 19, 1956