

Middlesex Hospital, London. The results are announced in *The Lancet*.

The new weight-reducing drug has the chemical name of dinitro-ortho-cresol and is said to be five times more powerful than dinitrophenol, which American physicians have been trying out clinically.

Both drugs act to cause weight reduction by speeding up the rate of metabolism, the process of tissue change constantly going on in the body and embracing the change of foodstuffs and tissue into energy for the body's use. When the metabolism is speeded up, the body uses up energy faster, calling on the reserve stores of fat to augment the daily food supply. As a result, weight is lost.

The thyroid gland is a regulator of the rate of this process, and when because of disease or some other condition, it fails to function normally and the rate is very much slowed up, the condition of myxedema results. Thyroid extract restores the rate to normal and relieves the symptoms. The new drug which stimulates metabolism also restores the lowered rate of myxedema patients to normal, but without relieving the patient of the other symptoms of the disease.

This suggests a new and interesting point: either the relief of myxedema is independent of the raised metabolic rate or else increase in metabolism induced by medication differs from normal metabolism.

Dinitrophenol is a very potent and dangerous substance, not to be used without a physician's direction. Deaths have already occurred from its indiscreet use. Dinitro-ortho-cresol is said to be safer than dinitrophenol, but it is not intended for use without medical guidance.

Science News Letter, December 16, 1933

MATHEMATICS

Mathematicians Abandon Aristotle's Logic

THE PERSISTENCE of mathematicians in sticking to the Aristotelian laws of logic is an example of the "unscratchable stupidity of the human race," in the opinion of Dr. E. T. Bell, mathematician of the California Institute of Technology at Pasadena.

Mathematicians had been getting into trouble on account of following logic for thousands of years and they did not know what to do about it, Dr. Bell told

a meeting of Sigma Xi. A hundred years ago, an exactly analogous difficulty had been overcome in the field of geometry when Lobatchevsky, a Pole, first showed that a non-Euclidean geometry could be worked with complete satisfaction. Since then, infinitely many non-Euclidean geometries have been developed ignoring the famous "parallel postulate." Mathematicians all know about this, yet it was only three years ago that Lucasiewicz and Tarski, also Poles, had the sense and audacity likewise to ignore Aristotle.

Every intelligent and conscientious person has had difficulty answering the question: "Is this statement true or false?" The first improvement of the old logic was to show that one could allow, besides the answers "yes" and "no", the third answer "possibly," and still work out a complete system of in-

ference. In this sense, truth could be three-valued and still be logical. Then it was found by other workers that there could be any number of gradations of truth, even infinitely many.

These logics of "many-valued truths" are really closer to scientific matters than the true-false logic of Aristotle. In fact, the branch of mathematics which is most important in science, namely the theory of probability, has only now been put on a satisfactory basis by two Germans, von Mises and Reichenbach. There had been three hundred years of practically sterile discussions of this subject on the basis of the older logic, and meanwhile scientific workers could only hope that the imperfect theory of probability would not lead them astray. Of course, Dr. Bell said, it often did, but this will be less excusable in the future.

Science News Letter, December 16, 1933

As a Christmas or other friendly gift of remembrance:

What to Give?

<p>at \$3⁵⁰</p> <p>A one year subscription to Science News Letter if sent in with your own renewal.</p>	<p>at \$5</p> <p>A one-year subscription to Science News Letter sent alone.</p>	<p>at \$7</p> <p>A two-year subscription to Science News Letter or a one year gift plus your one year renewal.</p>
---	--	---

Please use the Coupon below

To SCIENCE NEWS LETTER
21st and Constitution Avenue,
Washington, D. C.

Please enter the following 1 year Gift plus my own one year renewal.
 1 year subscription
 2 year subscription

I enclose remittance (or, bill me later):

GIFT TO

Name

Street Address

City and State

My Name and Address

My Name

Street Address

City and State

19124