

GENERAL SCIENCE

# Sugar in Blood Protects Against Poison of Alcohol

Spring Meeting of National Academy of Sciences  
Reviews Topics From Atoms to Mountain Peaks

**C**HAMPION "Old Soaks," in the days when the West was wild, used to gulp down a lot of olive oil before settling down to an evening of serious drinking. They might have done better had they raided the candy counter instead, it is indicated by recent physiological researches on the effects of alcohol and what to do about them, reported by Drs. Howard W. Haggard and Leon A. Greenberg of Yale University, before the National Academy of Sciences at Washington, D. C.

The intoxicating effect of alcohol on the brain is powerfully counteracted by the amount of sugar in the blood, the two Yale researchers found. The concentration of alcohol needed to kill a rat with one-tenth of one per cent. of sugar in its blood is more than 20 per cent. higher than the concentration needed to kill when the blood sugar has been reduced to seven hundredths of one per cent. But if the blood sugar is raised to two tenths of one per cent., the alcohol needed to kill must be increased by 60 per cent.

There is a limit to the protective action of sugar, however. Drs. Haggard and Greenberg artificially raised the rats' blood sugar to concentrations impossible to attain in any natural manner, but found that these did not increase the protective action.

The two physiologists stated: "Our investigation has been made chiefly on rats, but we have evidence that men react similarly."

## The Blood's Scrap Iron

Scrap iron, which has suddenly moved from the junkpile to the page one news of a war-worried world, is important also in the upkeep of the blood that flows in our arteries and veins. Scientists attending the meeting of the National Academy of Sciences heard the story of our internal scrap iron from Prof. G. H. Whipple of the University of Rochester.

When red blood cells wear out, said Prof. Whipple, they break down into three kinds of "scrap": iron, a pigment called hemin, and a protein molecule

called globin. The iron is carefully stored for future use. The hemin is thrown away—discharged as bile pigment into the intestine. The big protein blocks of globin are probably used again in the building of new hemoglobin for the new blood, but we do not understand the mechanism of this at all well as yet.

The liver and the red marrow of our bones are the chief manufacturing plants of new red blood cells, continued Prof. Whipple: "We may imagine that the liver produces the building blocks or chemical aggregates and the bone marrow acts as the 'assembly line' from which roll the finished red cells packed with hemoglobin."

From experiments on new blood formation in dogs, Prof. Whipple has found

that best of all foodstuffs for the purpose are animal "giblets," especially liver, kidney, pancreas, and stomach (tripe, to the trade). Green vegetables occupy an intermediate position. Some fruits are good, others of little value. Grains and dairy products, despite their high usefulness in other respects, are poor in the factors which cause new hemoglobin production in anemia.

## "Hurry-up" Water

"Heavy" water, that is, water containing double-weight atoms of hydrogen, or deuterium, instead of ordinary light-weight hydrogen, might well be rechristened "hurry-up" water, from its physiological effects. These were described by Dr. Henry Gray Barbour of Yale Medical School.

Substitute "heavy" water for half the natural water in a mouse's body, and the mouse dies, Dr. Barbour said. The animal can, however, survive the substitution of one-fifth of its bodily water content with "heavy" water, he said, though only at the price of rather severe physiological disturbances.

In general, these effects are like those produced by strong stimulation of those



## STONE AGE CITY

*No longer can Stone Age men be regarded one and all as benighted primitives. Evidence that they rose to the proud estate of city folks has been unearthed in a thirteenth layer of ruins at "the world's oldest city," Tepe Gawra, in Mesopotamia. Prof. A. E. Speiser, unearthing these city buildings over 6000 years old, reports to Prof. Millar Burrows of Yale that people still in the Stone Age built an acropolis, with awe-inspiring temples around a court, and dwellings on the remaining side of the enclosure. He calls these ruins the earliest known example of monumental architecture. The expedition is a joint project of the American Schools of Oriental Research, University of Pennsylvania and Dropsie College.*