

believe that the increase in blood vitamin A after alcohol is due to a mobilization of the vitamin from other tissues. They suggest that this might form the basis of a test for vitamin A storage in the body.

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GEOGRAPHY

Maps Show Changing World As Possible Aid to Peace

WITH the world changing so rapidly, present-day maps are not adequate to show its alterations, S. Whittemore Boggs, geographer of the U. S. Department of State, told the American Association for the Advancement of Science. New maps are needed, which may aid in establishing a peaceful society.

Speaking before the section on geography and geography, he said that "maps should be devised to portray more effectively the great changes that have taken place throughout the world in the last century, largely as a result of improvements in travel, transportation and communication facilities."

He showed examples of several new maps. One he called an "isotachic map," the name coming from a Greek word meaning "equal speed." This, he said, "is analogous to physical maps with shadings between contours, in which the higher elevations are depicted in darker shadings. The territory in which travel within a given range of speed prevails is shown in a single shading, the lighter the shading the greater the speed. A map of 1940, by comparison with one of 1800, represents a change as fundamental as if giant steam shovels and grading machines had leveled the mountains and made the surface of the United States almost as smooth as a billiard table."

Such maps, he said, might prove an aid to thinking in terms of the earth as a whole, which might aid in world peace. They may show, he declared, "that recent inventions and techniques, instead of making a 'shrinking world,' have greatly lengthened the outreach of nations and groups, multiplied impacts, and tended to intensify rivalries which may be manifested anywhere on the globe. Such maps may also stimulate thinking in world terms, which is important at a time when such thinking is partially paralyzed."

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To prevent snow glare on Canada's snow-covered aviation landing fields, corrugated pipe equipment is rolled over the snow to form ripples.

PHYSIOLOGY

Change in Nine Molecules Produces Sensation of Sight

Each Quantum of Light Able to Cause Necessary Change in Visual Purple; No Physical System Like It

A CHANGE in only eight or nine molecules of the "sight chemical," visual purple, in the retina of the human eye is sufficient to produce the sensation of sight, Prof. Selig Hecht of Columbia University told the American Association for the Advancement of Science at Philadelphia. Associated with Prof. Hecht in his experiments were Simon Shlaer, also of Columbia, and Dr. Maurice H. Pirrenne of the Belgian-American Educational Foundation.

In the research, an observer would stay in a dark room for half an hour, until his eyes had become dark-adapted and reached a maximum of sensitivity to light. Then a flash of light, exactly a hundredth of a second in duration and of carefully measured radiant-energy content, was shot at his eyes. The amount of light actually reaching the retina, when the minimum sight-causing illumination was reached, was calculated at eight or nine quanta, each quantum being able to cause the necessary chemical change in one molecule of visual purple in the retina.

Prof. Hecht commented, "Judging by the structure of the retina, the structure of light, and the chemistry of visual purple, it is hard to conceive of a biological system which could be more sensitive than this. Certainly there are no physical systems which even approach it."

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Cicadas May Harm Trees

SEVENTEEN-YEAR cicadas, usually called "locusts" when their shrilling swarms appear, may do more harm to trees than is commonly supposed, Dr. Gregory Thoennes of St. Mary's College of Winona, Minn., suggested. Dr. Thoennes has kept track of trees affected by an outbreak of seventeen-year cicadas in Missouri six years ago, and is of the opinion that the consequences of the excessive egg-deposition in the rind of young twigs are being too lightly dismissed by biologists.

The cicada, emerging after seventeen years of subterranean life, sings, mates,

lays its eggs and dies. The eggs are shoved into the green bark of young twigs, frequently in such numbers that the twigs wither and fall off.

It has always been supposed that the trees recovered from these infrequent partial defoliations with little injury, but Dr. Thoennes declared that in the case of orchard trees especially, measurements made for the past six years indicate a marked decrease in the yearly growth of injured branches. This change in growth rate, he said, is more noticeable in older trees than in younger ones, and in neglected trees than in those that have been well cultivated. In either case, however, the growth of affected branches is less than that of uninjured ones.

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Plants With Roots in Air

"AEROCULTURE," a new method for growing plants with their roots suspended in air, never either touching soil or being kept immersed in water, was described before the plant physiologists attending the meeting by its inventor, Prof. M. A. Raines of Howard University. Water, with mineral nutrients dissolved in it, is supplied by spraying or frequent dipping. A promising feature of the method, said Prof. Raines, is that sugar or other carbohydrates may be supplied without the elaborate precautions necessary to prevent fermentation or bacterial and mold growth when other methods are employed.

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Growth-Chemical Spray

COTTON yields were boosted by a third in experimental plots sprayed daily for three weeks during July with a one-to-one-million solution of the growth-promoting chemical, indole acetic acid, Prof. J. C. Ireland of Oklahoma Agricultural and Mechanical College reported before the meeting of the American Society of Plant Physiologists.

"This would suggest that the use of a synthetic hormone causes the cotton plants to develop more bolls to maturity," said Prof. Ireland. "There is an apparent