this field is the explanation of how light is utilized by plants to bring about known transformations. One possibility is that light and chlorophyll set free hydrogen atoms from water in the plant. Then a catalyst, such as a co-enzyme, does the job of combination.

He stated that some of the intermediates in photosynthesis are identical with compounds formed by the same plants, but so far it has been proven impossible to distinguish early intermediates in photosynthesis from fermentation products. But more advanced intermediates can be identified by the positions of radioactive carbon atoms in their molecules, since such carbon atoms reach positions in these molecules that are impossible to reach by fermentation.

The experiments were performed both in darkness and in light. Pre-illuminated plants exposed to radio carbon in darkness were able to form the same intermediate compounds as plants given 30-second exposure to radioactive carbon in light. Dr. Calvin said that this research further confirms the previous theory that photosynthesis is the reverse of respiration in plants and animals. Intermediates formed in photosynthesis are the same as those formed when animals break down sugars to form carbon dioxide and water but in reverse order.

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PUBLIC HEALTH

WHO Contributor to Peace

U. S. apparently to play only observer's role when full-scale activities begin with the meeting in June of the World Health Assembly.

➤ AN important aid to world peace in which the United States seems destined to play only an observer's role is the forthcoming World Health Assembly, scheduled to meet in Geneva, Switzerland, in June of this year.

The World Health Assembly will mark the beginning of full-scale activity of the World Health Organization. The Soviet Union has become the 24th of the necessary 26 members of the United Nations to join WHO, and two more seem assured. The United States will not be one of them unless the Rules Committee of the House of Representatives reverses its recent action in tabling indefinitely the bill that would enable us to join WHO.

The World Health Assembly will be the first in a series of annual assemblies "which can be an important focus of the world's hope of peace and life," Dr. H. van Zile Hyde, alternate U. S. representative to WHO's interim commission, declared in a recent State Department Bulletin.

The International Health Conference which laid the plans for WHO and the successful course of its interim commission, he said, "have confirmed the historical fact that in the field of health nations can meet together in a spirit of friendship and understanding, and arrive at firm decisions which are carried through to an effective conclusion for the betterment of mankind."

Examples of accomplishments expected through WHO, and already begun under its interim commission, are found in malaria control, tuberculosis control and improvement of the mental and physical health of the world's children who are its future citizens and potential war or peace makers.

Malaria, which affects the world's food supply as well as its health, can be controlled "even to the point of eradication," Dr. Hyde declared. "What is required is the extension of knowledge and provision of leadership to affected areas. In Greece, for example, where through the centuries malaria has annually attacked 1 to 3 millions of a population of 7.5 million, the disease has been reduced to a minor problem—by Greeks—under the leadership of a handful of experts sent into the country by UNRRA and maintained there now by WHO's interim commission."

On tuberculosis Dr. Hyde declared that, internationally, the final conquest of this great plague is "in the hands of the United Nations itself and those of its specialized agencies concerned with world economic health. Tuberculosis is a disease that can be suppressed by a planned attack. The low death rate of 32 per 100,000 in Denmark, as contrasted with rates of 200 to 400 per 100,000 in several other areas of Europe, is a direct result of such attack.

"The interim commission has recognized that the WHO can contribute significantly towards its control through the extension of professional knowledge by fellowships, demonstrations and expert advice to governments, through the extension of public knowledge concerning the disease and its method of spread; by the promotion of the eradication of tuberculosis in cattle and particularly, now, by the extension of the use of BCG vaccine.

"The commission has not felt it prudent to wait for the WHO in order to extend the use of BCG vaccine in areas in which tuberculosis is epidemic. It is therefore sending teams to India, at the request of that government, to demonstrate the technique of vaccination in the hope of extending its use there on a wide basis. At the same time it is providing to the International Chil-

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dren's Emergency Fund a panel of experts to advise the Fund on the technical aspects of a program upon which the Fund is embarking to vaccinate an estimated 15,000,000 children in Europe. The Commission has, as well, accepted the responsibility for conducting studies to determine the effect on tuberculosis rates of this vast vaccination program."

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MEDICINE

Nose Remedy Tests Urged

Cites examples of damage to lining of nose and sinuses and brain in warning against premature use of new medicines.

➤ PATIENTS pay through the nose, literally, for sinus and other nose medicines when these are used without first being tested in the noses of animals, Dr. Noah D. Fabricant of Chicago charged at the meeting in Atlantic City of the American Laryngological, Rhinological and Otological Society.

"Knowledge of undesirable caustic reactions (of such drugs) sometimes comes initially via the patient's nose," he declared. "If the truth be stated bluntly, this is literally paying through the nose."

Two cases of chemical meningitis following irrigation of the nasal sinuses with tyrothricin, one of the penicillin-like drugs, have recently been reported. The disease process was recreated in animal experiments, "an example of closing the garage doors after the automobile had been stolen," Dr. Fabricant commented.

Years after nose and throat specialists had "liquidated" mercurochrome by the trial and error method on patients, it was discovered that when the chemical is put in the noses of experimental animals it passes, in much less than two hours, through the linings of the nose and sinuses, the bony walls of the frontal sinus and even through the covering of the brain to stain the cortex of the brain itself.

"Wild exaggerations" were made a few years ago for a highly alkaline solution of a sulfa drug, sodium sulfathiazole, for local treatment of chronic sinus trouble. Then it was discovered that the medicine was extremely caustic to the lining of the nose and sinuses and damaging to the little hair-like processes inside.

Besides making sure the drugs they use have been thoroughly tested. Dr. Fabricant reminded nose and throat specialists that in choosing a medicine for their patients they need to consider the season of the year. The differing degrees of virulence of germs and the possibility of bacteria having undergone metamorphosis must be taken into account. The pattern of nose and sinus infections changes from year to year, so the medicine that was helpful one year may not remedy sinus infection in the same patient the next year.

Penicillin and sulfa drugs used in the nose for the most part do not help in long-standing chronic sinus infections. This, Dr. Fabricant explained, is because the linings of nose and sinuses have become so thickened and tough the drugs cannot get through to hit the germs. In some cases of acute infection he considers penicillin and other antibiotics are "of minor help."

A "crying need" exists for new medicines to shrink the blood vessels and swollen tissues of stuffy noses in colds and sinus infections. If they can be produced in combination with one of the newer penicillin-like drugs, so much the better. But Dr. Fabricant thinks existing nose medicines combining sulfa drugs or penicillin with a chemical to shrink the swollen tissues bring relief primarily because of the shrinking chemical. The sulfa drug or antibiotic addition serves actually, in his opinion, as "a talking point."

Penicillin or other medicated throat lozenges are of doubtful value. The explanation Dr. Fabricant gave is that the germ-stopping chemicals do not get far enough back into the throat in sufficient quantity, and when the chemicals do reach the tonsils, they stay on the surface without getting at the germs within the tonsils.

Giving anti-germ chemicals by another method, insufflation, however, seems to help in some cases of sore throats. But no matter how the drugs are applied, he pointed out, so much will be washed away from tonsils and throat by the saliva that an effective concentration cannot be kept for long.

Use of sodium bicarbonate and other alkalies for prevention or treatment of colds has become a part of American folklore, but is of no value. The normal human throat is either on the acid side most of the time or slightly alkaline in limited instances, Dr. Fabricant's studies show. Consequently trying to "alkalinize" it is trying to reverse the normal state instead of trying to get back to it.

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CHEMISTRY

Viscose Rayon Does Not Absorb Dye Uniformly

➤ VISCOSE rayon, the kind used in most rayon dresses and shirts, does not absorb dye at a uniform rate. The core of the fibers usually takes up the dye more quickly and loses it more easily than the skin.

In a cross-section of ordinary tire-cord yarn stained with Solophenyl Fast Blue Green BL dye the core is completely colored, but dye has not yet penetrated the skin.

But after dye such as Victoria Blue, used in preparing the rayon fibers, had penetrated both the core and the skin,

RAYON DYE PROCESS—These are cross-sections of rayon fibers showing, on the left, that the core absorbs the dye before the skin, and, on the right, that dye washes out of the core more quickly than from the skin.