

it, owns the new process, but President Land and everyone connected with the discovery is aware of the obvious fact that it must be developed in the public interest. The world has learned its lesson in allowing the Dutch quinine monopoly to control the price and production of a drug desperately needed by hundreds of millions of people. Land proposes to give non-exclusive licenses to whatever pharmaceutical firms are indicated by government authorities, and to use the income from these licenses to back further ventures in general research.

Meanwhile Woodward and Doering are plotting routes for further prospecting trips in atomic regions where man has never trod. Only scientists know the

hazards they will face. They and their fellow chemists are a bit irritated at the question people have been asking, "Why wasn't quinine synthesized before?"

"Well, why wasn't it?" I asked, to see what would happen.

"It's like this," one chemist explained with weary patience. "There are 52 atoms in the quinine molecule, and there are 52 cards in a deck. Everybody uses the same kind of deck; why can't everybody win at cards?"

Doering made it shorter.

"Because no one ever came along as smart as Bob Woodward," he said.

This background story on the synthesis of quinine will appear in Reader's Digest for July. See SNL May 13 for earlier story and photograph.

Science News Letter, June 10, 1944



GETS THERE—This little plane can land on a small clearing in the jungle, or on a small landing strip along a road, to pick up a man wounded in combat. In this U. S. Army Air Forces photograph it is shown being pushed back out of the enemy's sight until it is ready to take off again.

CHEMISTRY

OEI Governs Molecules

Structure of giant synthetic rubber molecules is controlled by action of a new chemical agent. Makes possible uniform quality.

► A NEW CHEMICAL AGENT, extracted from a natural vegetable oil, controls the growth and structure of giant molecules which, in turn, determine the properties of finished synthetic rubber.

Facts about the chemical agent, developed by the United States Rubber Company, show that its use assures a standardized mixture of synthetic rubber at all times and permits the manufacture of completed tires, tubes, and other articles of war of known uniform quality.

Added to a mixture of butadiene and styrene, essential ingredients in the manufacture of GR-S synthetic rubber, this chemical agent controls the length of the molecular chains that determine the elasticity and strength of the product.

Too much of the chemical agent added to the mixture keeps the molecules too small, thereby producing a rubber that is soupy and of no practical use. Too little added to the mixture allows the molecules to become too large, making the rubber too stiff. Proper amounts of the chemical agent added to the mixture produces chains of molecules of optimum size and length, and the resulting rubber is of the desired consistency.

The exact chemical composition of the new chemical agent is one of the big secrets of the wartime synthetic rubber program. In speaking of it, chemists refer to it as OEI, "One Essential Ingredient,"

or by other specially coined terms.

The OEI chemical agent is being used today in practically all manufacture of Buna S synthetics. In order to meet the increasing demand for it by rubber producers, five major industrial chemical companies are manufacturing and experimenting with the chemical agent and substitutes.

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AERONAUTICS-MEDICINE

Grasshopper Planes Used To Evacuate Wounded

► THE TINY grasshopper planes, or flying jeeps, are being used by the Army in the jungles of Burma for air ambulance work.

Up to the present time these planes

Mesa Verde

EXPLORERS' CAMP FOR BOYS

Healthy, active boys between 12 and 18 are being given an opportunity to do a summer's real field work under qualified professional supervision in locating and exploring Indian ruins, mountain-climbing, prospecting for fossils, ores and minerals, collecting specimens, etc. Headquarters in Mesa Verde National Park. Modern cabins with bath, "sleeping-out" field trips with pack train scheduled. Meat, milk, vegetables from our own ranch in Mancos Valley. Railheads at Gallup, New Mexico and Durango, Colorado.

Two six-week periods, beginning June 19 and July 31. Single-period, all-expense fee, \$289; entire 12 weeks, \$553. There are still a few openings for first period. Late arrivals for June period will be accommodated. Wire reservations to:

ANSEL F. HALL
Mancos, Colorado