

## BOTANY

## Shrub Rivals Whale In Producing Prized Oil

**O**IL very much like the prized sperm-oil of the whale in certain chemical and physical properties is produced from the seeds of a shrub that grows in the Southwest and in Mexico, chemists of the U. S. Department of Agriculture have discovered. The plant's name is spelled jojoba by the Mexicans, and is pronounced hohoba. Botanists say it is distantly related to the boxwood, and give it the Latin title *Simmondsia Californica*.

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## ENTOMOLOGY

## Find That Mosquitoes Winter in Twilight Caves

**B**EARS are not the only beasts of prey that spend the winter in caves. Animals much smaller than bears, but much more likely to bite the average citizen, to wit: mosquitoes, also hibernate in natural caverns, Prof. J. D. Ives of Carson and Newman College, Jefferson City, Tenn., reported.

With the aid of personnel from F.E.R.A. and N.Y.A., Prof. Ives explored a number of Tennessee caves during fall and winter months, and found a total of more than 3,000 of the insects. Almost all of them were females, and the great majority belonged to the genus *Anopheles*, notorious as malaria carriers. Relatively few, however, belonged to the particular species that is the worst offender in this respect; most of them belonged to a species that prefers the blood of cattle to that of human beings, though even these are capable of transmitting malaria on occasion.

### In Twilight

Practically without exception, Prof. Ives and his workers collected their mosquitoes in the twilight zone of the caves, where full daylight does not penetrate, yet where it does not become pitch-dark. This is the kind of light many species of mosquitoes prefer; and the twilight zone also gives them the degree of air humidity they like best. Altogether, then, caves offer good homes for mosquitoes.

Prof. Ives suggested methods of spraying that might be worth trying, where caves harboring mosquitoes are too near human habitations.

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### RIVAL OF THE WHALE

*From these native jojoba nut seeds can be extracted a non-fatty oil resembling that of the sperm whale very closely. The nuts are found in Arizona, Southern California and Western Mexico, where they grow on bushes from three to 15 feet high.*

## AERONAUTICS

## Records Loads on Airplanes During Gusts in Bumpy Flight

**A** DEVICE that automatically records the ups and downs of a bumpy airplane flight has been developed by the National Advisory Committee for Aeronautics, it was revealed to the Society of Automotive Engineers meeting in Detroit.

Research engineer Richard V. Rhode of the NACA laboratories at Langley Field, Va., disclosed the operation and recording of his so-called V-G recorder which shows the simultaneous effect of air speed and the acceleration of gravity during a gusty flight.

To airplane passengers such a bumpy flight often produces air sickness and nausea but to the airplane designer it means a more serious constructional problem. During a gusty "bump" the loads on the plane increase and decrease rapidly and powerfully. Some knowledge of how large these bump factors are must be obtained to permit a safe margin of strength to be built into the

plane. And at the same time too much strength, with its accompanying weight, is not wanted, for present-day planes have to be economically profitable to operate.

By an ingenious coupling of levers which activate a stylus rubbing on smoked glass, the NACA recorder gives a permanent record of how the effect of gravity combines with air speed. In both land transports and seaplanes the device has now taken records for over 20,364 hours in the air and traveled over 3,500,000 miles in doing it.

It is found that while the ups and downs of fairly smooth flight seldom exceed an additional half G (half the pull of gravity) either plus or minus, there may be times when a plane is riding through a squall storm that the additional acceleration may rise to 3 G or more. It appears that these larger values are obtained at speeds of about 180 miles an hour, (*Turn to page 45*)