INVENTION

Petroleum Prospectors Ask Bacteria, Then Drill

➤ OIL PROSPECTORS are consulting with natural-born experts, a family of bacteria, before gambling on expensive rigs and drilling operations.

Use of the oil-consuming bacteria is the basis of an invention for which James Maddox Jr., Bellaire, Texas, was awarded patent No. 2,875,135. He assigned rights to The Texas Company, New York City.

The invention takes advantage of the fact that certain bacteria, which consume hydrocarbons contained in petroleum, are found in unusual numbers in the soil over subsurface oil deposits. This is how it works:

Soil samples are mixed with known amounts of a hydrocarbon, then incubated. The mixture is allowed to stand quietly for one to three days. The soil bacteria multiply rapidly with no measurable utilization of the hydrocarbons. Then, with large numbers of bacteria present, the mixture is swished around continuously up to several days, a situation which seems to stimulate the microbes to consume the hydrocarbons.

If there were plenty of oil-eating bacteria in the original soil sample, the hydrocarbon consumption would be measurable and would indicate to geophysicists that petroleum deposits exist.

Mr. Maddox' exploitation of the primeval oil prospectors is a modification of another system that only recently came into use.

Science News Letter, March 7, 1959

GEOPHYSICS

Balloon From Rocket Could Yield Wind Data

➤ A PLAN FOR probing the atmospheric winds and densities in the uncharted region between the lowest heights of orbiting satellites and the highest altitudes of reliable rocket measurements has been drawn by Dr. R. E. McCrosky of Harvard College Observatory.

Dr. McCrosky has calculated that a balloon 100 feet in diameter and weighing 65 pounds when inflated could do the job if fired from a rocket about 100 miles high. It would drift slowly earthward at a rate indicating both the wind and density of the air at its position at the time of observation.

Observations of the falling rate could be made by the following five methods:

1. Photographically at twilght. Its brightness would then be greater than any star seen at night, a magnitude of minus five and a half at a height of 100 miles, Dr. McCrosky calculated.

2. Photographically when illuminated by the full moon. In this case, its magnitude would drop to 7.5, still within the range of meteor and satellite tracking cameras as well as some of the larger missile tracking systems.

3. Photographically for a balloon illuminated by searchlights.

4. By telemetry of information obtained by an accelerometer attached to the balloon.

5. By radar tracking.

Recent development of the aluminum coated Milar balloons for satellite use by William J. O'Sullivan Jr. of the National Aeronautics and Space Administration made Dr. McCrosky's plan feasible.

Basic observations include not only the balloon's position at any time but some proof that full inflation was achieved. Its brightness would be one measure of this, Dr. McCrosky reported to the Smithsonian Institution's Astrophysical Observatory, where he is a consultant.

The balloon's falling rate can be measured accurately to within about a third of a yard. Damage from the impact of meteors is expected to be virtually negligible.

Science News Letter, March 7, 1959

SCIENCE NEWS LETTER

VOL. 75 MARCH 7, 1959 NO. 10

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D.C., NOrth 7-2255. Cable Address: SCIENSERVC.

Subscription rates: 1 yr., $5.50; 2 yrs., $10.00; 3 yrs., $14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member Audit Bureau of Circulation.