

GEOLOGY

Oil From Marine Life

Modern motorized civilization is powered by marine debris which is currently contributing to the building up of our crude petroleum wells.

► OUR VAST oil-using civilization is powered by the remains of marine life which form the crude petroleum of our oil wells of today.

This is the logical extension of the discovery of the formation of hydrocarbons with oil-like characteristics in the recent sediments of oceanic tidelands. Dr. Paul V. Smith, Jr., of Standard Oil Development Co., gave the details of contemporaneous origin of petroleum to *Science* (Oct. 24), a discovery reported (SNL, Sept. 27, p. 194) from the American Chemical Society meeting in Atlantic City.

As recently as 1934 competent geologists were unable to find evidence that liquid hydrocarbons are forming in marine sediments as they are deposited. But Mr. Smith dug into the problem anew and in sediment samples from off the Gulf of Mexico coast of Louisiana and Texas found organic matter ranging from 30 to 450 parts per 100,000 and free hydrocarbons from 2 to 19 parts per 100,000. The organic matter was shown to have a composition of paraffin-naphthene, aromatic and asphaltic components similar to crude oil.

While the percentages present are small, Mr. Smith estimates that a cubic mile of marine sediments he sampled down to 106 feet contains 4,500,000 barrels of an oil-like mixture. This is 7,000 barrels per acre for a column one mile deep and the figure is labeled conservative.

Radiocarbon dating tests done at Columbia University's Lamont Geological Observatory show that the sediments are recent in origin, as shown by the radioactivity of their carbon 14, and that the hydrocarbons are deposited with or generated in the sediments themselves.

The petroleum-like mixture discovered in formation at the present time is a composite of the hydrocarbon remains of many forms of marine life, Dr. Smith suggests. Crude oils of varying composition from past ages might result, in his opinion, from changes in the relative contributions of different forms of marine life. In various laboratories suitable hydrocarbons have been detected in oysters, bluefish, marine bacteria, and even barnacles.

Science News Letter, November 8, 1952

MEDICINE

Drug Banks in Body

► PEOPLE TAKING injections to control their high blood pressure may shortly get much better relief with fewer injections as a result of the work of a New Zealand physician, Dr. F. Horace Smirk, professor of medicine at the University of Otago.

Dr. Smirk reports in *Lancet* (Oct. 11) that he has found that when the drugs used to lower blood pressure are injected under the skin together with one of two inactive

carrier substances, whose molecules are of very large size, the absorption of the active drugs is retarded. As a result, a depot of the active drug is formed under the skin and the blood pressure lowering is prolonged up to five to seven hours.

The effect may be further prolonged by adding a minute amount of adrenalin or ephedrine, which has the action of constricting the blood vessels at the site of the injection, thus further decreasing absorption of the injected material.

The longer-lasting effect of the slowly absorbed drugs reduces the mechanical load on the circulatory system and might afford relief "to the 10% of hypertensive patients whose headaches are at present insufficiently relieved."

The active drugs used are hexamethonium and hexamethylene bisethylidimethylammonium.

The inactive carrier chemicals are blood plasma extenders, polyvinylpyrrolidone and dextran.

Owing to the slower rate of absorption of these compound solutions, the dose of the active drug must be increased, usually about 30%.

Science News Letter, November 8, 1952

Questions

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GENERAL SCIENCE

Research Group to Open Non-Profit European Labs

► A CORNERSTONE containing a pure titanium metal "time capsule" was laid in place on the last day of October, marking the establishment of a new non-profit research center in Frankfurt-am-Main, Germany.

The research center, costing \$1,500,000, is being established by the Battelle Memorial Institute, an endowed research foundation in Columbus, Ohio.

Encased in Indiana limestone, the time capsule will be "virtually everlasting." It represents one of the first examples of successfully welded titanium, said Dr. Clyde Williams, the Institute's director.

Another research center at Geneva, Switzerland, also is to be set up by the Institute. A program of fellowships for selected students in Swiss and German universities already has been worked out, he said.

The Frankfurt laboratories are to help European industry to get back on its feet, to expand productivity and to broaden its markets. Research projects there will draw largely upon European scientists and engineers, although some Americans will be placed in administrative and liaison positions.

The Battelle Memorial Institute was founded to serve mankind by applying science to industrial problems. It currently employs 1,930 scientists, technologists and assistants. This year it will conduct an estimated \$12,000,000 worth of research.

Science News Letter, November 8, 1952

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