

GEOLOGY

# Oil Shortage May Hit U. S. During Next Twenty Years

## Bureau of Mines Expert Foresees Increased Use of Coal and Gas For Industrial Power and Home Heating

UNLESS new methods of obtaining and processing petroleum are developed, America may begin to feel the cramping hand of an oncoming oil shortage in from 10 to 20 years. This is the verdict of Dr. Arno C. Fieldner, chief of the technologic division of the U. S. Bureau of Mines.

Dr. Fieldner, speaking as president of the American Society for Testing Materials, outlined the present resources of the nation's fuels in his address entitled, "Fuels of Today and Tomorrow."

Of coal America has plenty, said Dr. Fieldner. Enough to last hundreds and perhaps a thousand or more years. But natural gas and oil obtained by present methods may be exhausted in less than a century, he warned.

Here is the significant forecast of Dr. Fieldner on America's future fuels:

Coal will continue to be the chief fuel for the generation of public-utility and major industrial power. While improved burning of coal might tend to decrease consumption and the further development of water power may be expected to increase, Dr. Fieldner sees an increasing demand for total energy needed by the country so that coal's relative position should be favorable. Moreover, after 10 or 15 years oil resources will become more difficult to exploit, so that the trend will favor the increased consumption of coal.

### Any Coal

"Tomorrow's power and central heating plants will burn any kind of coal completely and efficiently," said Dr. Fieldner. "There will be no smoke, no dust, and no sulfurous gases emitted to the atmosphere."

No substitute for metallurgical coke has appeared, continued Dr. Fieldner. The coke-oven industry should expand. Regulations prohibiting the waste of natural gas and the urge for additional markets will lead to the construction of more long-distance pipe lines which already go from Texas to Chicago and to Detroit. Gas will find industrial and domestic use and will displace oil as

well as coal for fuel in some places. As natural gas approaches exhaustion gas from coal will take its place.

Dr. Fieldner sees a further use of automatic coal and gas heating of homes and believes improved insulation will permit heating at about present costs, despite inevitable advances in the price of the fuel.

While oil-fuel Diesel engines on railroads may be expected to increase, Dr. Fieldner foresees coal retaining its predominance as the fuel for freight traffic throughout the age of oil and natural gas.

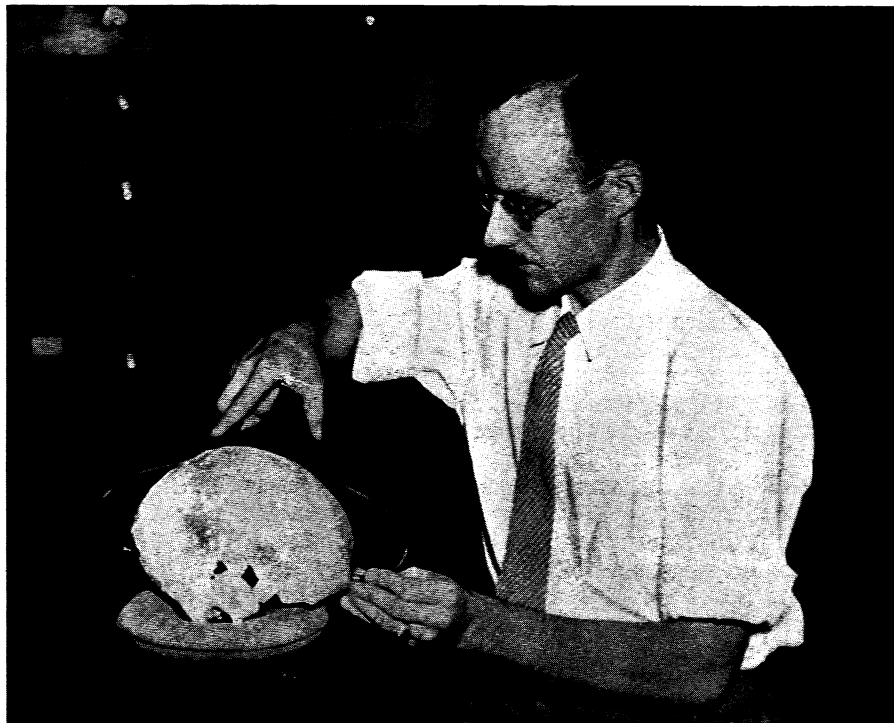
Three-fourths of the world's shipping is now powered by oil fuel. Oil, in fact,

has energized marine transport. Dr. Fieldner foresees further widening of oil as a fuel in ships and predicts that when natural petroleum sources dwindle, oil from shale or from coal may come into use.

On the crucial question of gasoline supplies for automobiles Dr. Fieldner regards present pessimistic fears of a shortage by 1945 as unjustified. Such warnings, he points out, have been issued regularly since the automobile came into use. Scientific research, both in cracking heavy oils to yield more gasoline and the reverse process of polymerization where gasoline is created out of lighter gaseous vapors, should hold the production to levels of demand, states Dr. Fieldner. Improved scientific prospecting for new reserves of petroleum and the drilling of deeper wells to tap now-unreachable sources should be a further aid for the next two decades.

Eventually, admits Dr. Fieldner, gasoline supplies will dwindle. However, improvements in engine construction to take lower-quality fuels and the expected improvements in Diesel engine operation will help materially.

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### BIG HEAD

*A Virginia Indian had the world's biggest known skull. He may have known Pocahontas, too—he lived at the village where she was once kidnaped. Unearthed in Stafford County, on the Potomac River, the skull is attracting interest at the Smithsonian Institution, Washington, where Dr. T. D. Stewart, anthropologist, is shown measuring it. The skull is estimated to have contained 2,200 cubic centimeters of brain, and is therefore far bigger than the 2,030 cubic centimeter brain of Russian Poet Turgenev, previous record holder. (See next page.)*