

## :: The Romance of Engine Fuels ::

**D**O we ever think, as we tip up the square can and let its colorless liquid contents run into the fuel tank of the auto or the gas tractor, of the story that runs through the passing of that liquid?

Life is made up of little things; the things that men call "great" are only an immense mass of small, microscopically small things, but each containing a reason, a story! The coral reef that lies hidden beneath the surface of the ocean rips the strake plates from the bottom of the lordly liner, gives her the death wound that sinks her to the hidden gloom and silence of the ocean. Yet that coral reef is naught—but a mass of dead animalculae, a collection of atoms that yet have power to exert themselves in a cohesive state though dead.

We watch the gasoline as we turn the handle of the pump and see it fill the measure at so much a gallon, and we can follow its suction from the tank through the carburetor, its mixture with the air suction, and its atomized evolution passing into the cylinder.

A brief second and the flying piston compresses its gaseous bulk back, back toward the cylinder head, then the electric spark—a nature power that we can only control, but cannot trace—flies between the two points and the ignited gas expands and expands, driving back the retreating piston and giving power, energy and inertia. Then, its work done, the exhausted vapor is ejected into the atmosphere apparently passing forever from the use of man. Yet that power came originally from the bowels of the old earth, even as all power comes. In that short word of five letters—"Power" there is a romance that can thrill the heart of anyone who has in him the far-flung fibres of imagination.

To-day we can fly in fancy back to the early ages of the world, we can see the tangled and gloomy depths of the primeval forests through which roamed and fought the mammoth animals of the prehistoric aeons.

We see, in the passing of centuries, the vegetation and tree life fade, the mighty trunks lie quiescent, sinking deeper and deeper into the putrefying surface vegetation. Time passes on and on and the vegetable decomposition sinks deeper and deeper through the damp soil, down, down to where no air exists. From the deep vegetation, dur-

ing the long years, new life—plant life—arises, but the layer of decomposed, vegetable matter sinks deeper and deeper and becomes, finally, what we know as peat. Peat ranges in character through time, from a brown fibrous matter to an almost black carbonaceous matter.

Ages pass and the peat sinks and sinks under the pressure of the superincumbent earth deposited through subsequent geological ages, compressing and preserving in many cases its vegetable structure, until, finally, it becomes what we call lignite. Peat and lignite belong to what geologists call the fossil age, and even before that age their earlier formations are that of bituminous coal, and, most ancient of all, the coal that we call anthracite.

It is needless for us to go into detail regarding the working and mining of coal, and its final transformation into power by combustion upon the firebricks of the steam tractor or the locomotive engine.

That story has been told so often; let us revert to the new power, the power of gasoline and atomized oils.

In considering gasoline, we find a colorless, highly inflammable liquid, the first and higher distillate of crude petroleum.

Therefore, that we may trace

its power from birth we must seek its parent—petroleum.

Petroleum is the general name given to an oily fluid found in different parts of the world; a mixture of hydrocarbons, chiefly belonging to the marsh-gas (C.H. 4) series. It is found in almost all localities where bitumen exists in quantity among the rocks, and the word itself is derived from the Latin "petra," a rock, and "oleum," oil. It is simply a mineral oil ranging in color from water white to a jet black. Many different theories have been advanced to account for the existence of petroleum, but no really satisfactory solution has been arrived at. For many years it was contended by geologists that petroleum was formed in the rocks by the decomposition of animal and vegetable matter, but of late years scientists support the idea that the formation of petroleum is due to the natural distillation of shales and hydrocarbons by means of the earth's internal heat.

Historically we find that petroleum is of great antiquity, and was known to eastern nations. The "slime" noted in the Old Testament, as employed in the construction of the Tower of Babel, was, without doubt, partially evaporated petroleum. The

ruins of Babylon and Nineveh prove to us that petroleum was used as a bond in cementing structures of brick in the year 2000 B.C. Herodotus, the Greek historian, mentions the oil springs on the island of Zante, and the asphaltic or bituminous deposits that were carried down by the River Is and which were collected by the ancient Babylonians. Bitumen, which we know as tar, was an article of commerce by the Dead Sea and was largely exported to Egypt in early Biblical times as the Egyptians used it for embalming purposes.

About the beginning of the Christian Era we have records that what was called "Sicilian Oil" was found upon that island, and was burned in lamps in the temple of Jupiter. This was petroleum and nothing else. Investigation has proved that petroleum was known and used in the early days of Galicia, Persia, India, China and Japan. On the Asperon peninsula on the borders of the Caspian Sea, there has been for centuries what the Persian fire worshippers called "holy fire," which is neither more nor less than burning natural gas or naphtha springs.

Such is a short account of the antiquity of petroleum, while we find in America that it was first discovered in 1627 by a French missionary who describes a famous petroleum spring in the west of New York state, and in 1767 a Moravian missionary records the presence of petroleum springs in Pennsylvania.

The artesian well driller has been an important factor in striking petroleum, while in the search for water, and we now find that petroleum exists in many of the states to the south of us, while Canadians all know of the vast fields in the Petrolea district of lower Ontario.

In 1858 Col. Drake, of the Seneca Oil Co., commenced boring an artesian well in order that he might tap the sources of oil strata among the rock layers of Pennsylvania, but he met many trials and difficulties ere, in 1859, he struck the first oil strata penetrated in the United States at a depth of 69½ ft. For a short time this well produced about 40 barrels a day, the product selling at \$20 a barrel. This discovery raised great excitement all over America and was the pioneer effort of the thousands of wells that exist or that have been pumped dry long ago. Pennsylvania, Louisiana, Kansas, Oklahoma, Colorado, Wyoming, Cali-

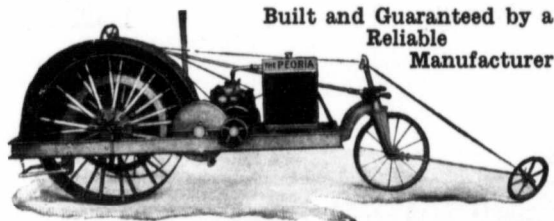
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