man team of government scientists.

Thus, potentially, the Pittsburgh area of the coal mining region could produce some 12,000,000,000 tons of oil that could be made into gasoline if the time ever comes when it is needed. This estimate is based on the best and latest calculation of the amount of recoverable coal in the Pittsburgh coal bed, which is placed at about 16,020,000,000 tons.

In a small, experimental plant at Pittsburgh, having a capacity of 100 pounds of coal a day, the U. S. Bureau of Mines chemists are taking coal in the powder form, mixing it with heavy oil, squeezing it to pressures of over 3,000 pounds to the square inch and heating it to 824 degrees Fahrenheit. Under the heat and pressure, extra hydrogen atoms are added to the coal molecules. Out of the treatment comes an oil suitable for conversion into gasoline.

The report on the percentage yields of coal from Pittsburgh seam coal was prepared by Dr. H. H. Storch, Dr. L. L. Hirst, C. O. Hawk, R. L. Boyer, P. L. Golden, I. I. Pinkel, J. R. Schaeffer, and R. H. Kallenberger. The work at the Pittsburgh hydrogenation plant is directed by Drs. Hirst and Storch, under the general supervision of Dr. A. C. Fieldner, chief of the technologic branch of the U. S. Bureau of Mines.

Science News Letter, September 10, 1938

GEOGRAPHY

New-Found Alaska Ice Field Covers Immense Territory

ICE AGE in the Twentieth Century: that is what the Alaska glacier field discovered by the Harvard University-National Geographic Society Expedition turns out to be. It is the largest non-polar ice cap on earth—a latter day piece of the Pleistocene. It stretches over a distance of 235 miles, or as far as from Washington to New York.

It has never been seen before because it is cupped in a vast nest of mountains which include some of the loftiest and most difficult peaks in North America. Only the coming of age of the airplane as an instrument of exploration has made its discovery possible.

Science News Letter, September 10, 1938

• Radio

Every Friday at 7:30 p. m. EDT, 6:30 p. m. EST, 5:30 p. m. CST, 4:30 p. m. MST, or 3:30 p. m. PST, Science Service cooperates with the Columbia Broadcasting System in presenting over the Columbia coast to coast network a new series of "Adventures in Science" presenting dramatizations of important scientific advances and discussions by eminent scientists.

ARCHAEOLOGY

Find One-God Pharaoh In Strange Company

BRITISH archaeologists, digging at an ancient fort-town called Sesebi in Egypt, recently unearthed three temples. In depths of one, they entered a crypt. On the walls they found some extraordinary paintings of Pharaoh Akhnaton.

There sits Akhnaton keeping company with Egypt's god of immortality, Osiris. In another scene he poses with Geb, god of earth. Farther on, he amiably sits with more gods.

If this were some other Pharaoh, it might be commonplace. But Akhnaton is famed in history as the religious reformer who swept out Egypt's legion of specialized gods, and proclaimed one god.

Defying Egypt's most powerful priests, Akhnaton worshiped a god formless and eternal, but showing himself to his children in the golden sun disk and life-giving rays of sunlight.

It was a religious revolution, no less. The idealistic king built a brand new capital city down the Nile at El-Amarna. In roofless shrines, his court worshiped the sun.

To find this king consorting with various gods is, therefore, an unusual sight. The explanation, of course, is that the temples date from early in his reign, about 1370 B. C., before he broke with the old faith.

Akhnaton even dedicated the temples at Sesebi to the old gods, for cornerstone deposits have been found. They bear the name he used at the start of his reign—Amenhotep IV. Since that name honored Amen, the god he most hated, he naturally took another when the upheaval came.

The temples unfold an early chapter in Akhnaton's career. But we will never know the most interesting thing of all: what the young king thought when he dedicated those temples, and inspected his portraits taken with the old gods.

Science News Letter, September 10, 1938

ARCHAEOLOGY

Exploring Is Slow in Ancient Land of Sheba

HOW VERY little the world knows about Southwest Arabia is emphasized by the recent journey across it from the Red Sea to the Indian Ocean by the British explorer H. S. Philby.

Here is presumably the land ruled by that romantic lady, the Queen of Sheba. The Queen's fabulous wealth and her visit to King Solomon are familiar enough after 3,000 years to figure in crossword puzzles and quiz games. And yet her cities, palaces, and even documentary proof of her existence remain to be dug out. Arab resistance to intrusion of foreigners remains a barrier to systematic programs of digging such as archaeologists like to plan in order to restore the ancient history of a region.

Meanwhile, Mr. Philby has made discoveries which many people would have supposed were commonplace knowledge. All of Arabia, for example, has been credited with having only one river worth the name. But he saw half a dozen rivers flowing continually from lofty sources in this darkest—that is least known—corner of Arabia.

Arabia's most beautiful oasis has heretofore been unknown, also, or practically so. Najran, in Mr. Philby's estimation, deserves the highest praise for beauty. He spent two weeks at Najran. One foreigner had been there before him—a Frenchman in 1869. Castle ruins mark a great city there, awaiting archaeological explorations.

Even the Arab steed has been misunderstood, it may be, for the explorer paused at many inscribed rocks to copy the writings and sketchy pictures. And he was struck by the pictures of fighting men and hunters mounted on horses.

These records he has turned over to experts. But he hazards a guess that horses came to Arabia long before the sixth century A. D., which was the earliest time for their appearance that old literary sources definitely proved.

Science News Letter, August 27, 1938