

New Industries for Oklahoma

By F. C. Wood

IN the summer of 1935, the working policy of the Oklahoma Geological Survey was expanded to include a department of Industrial Research. In fact, the program was so arranged by Robert H. Dott, director, that the Survey became a true service organization and as such has assisted many of the state departments, municipalities, individuals and others in solving economic problems related to mineral resources, water supply, manufacturing possibilities and similar items.

It is well to mention here that, while this economic or service work is being stressed by the Survey, the continued scientific studies of the geology of the state are not being neglected. A number of interesting contributions to local geological knowledge have been made and more are in the process of completion.

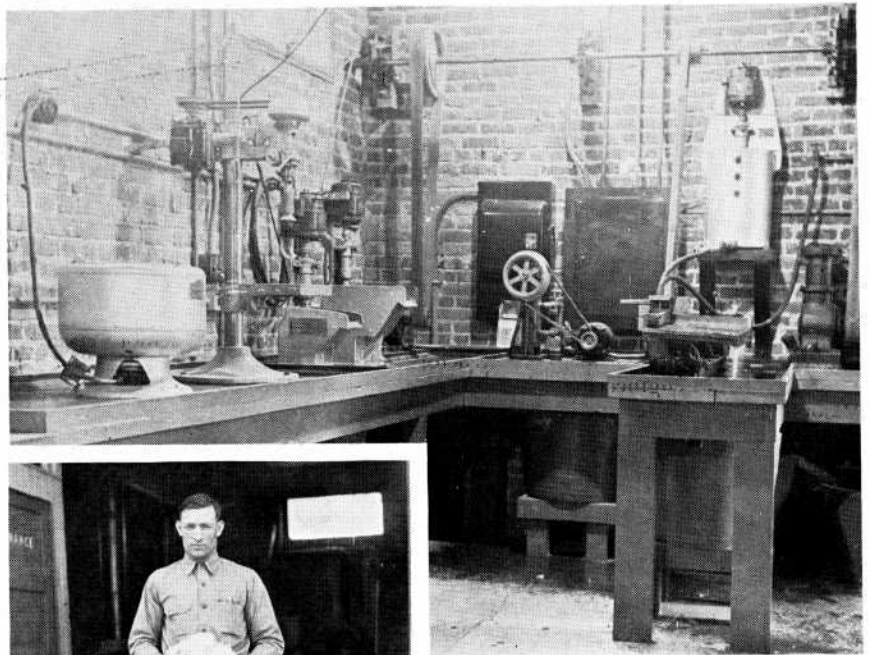
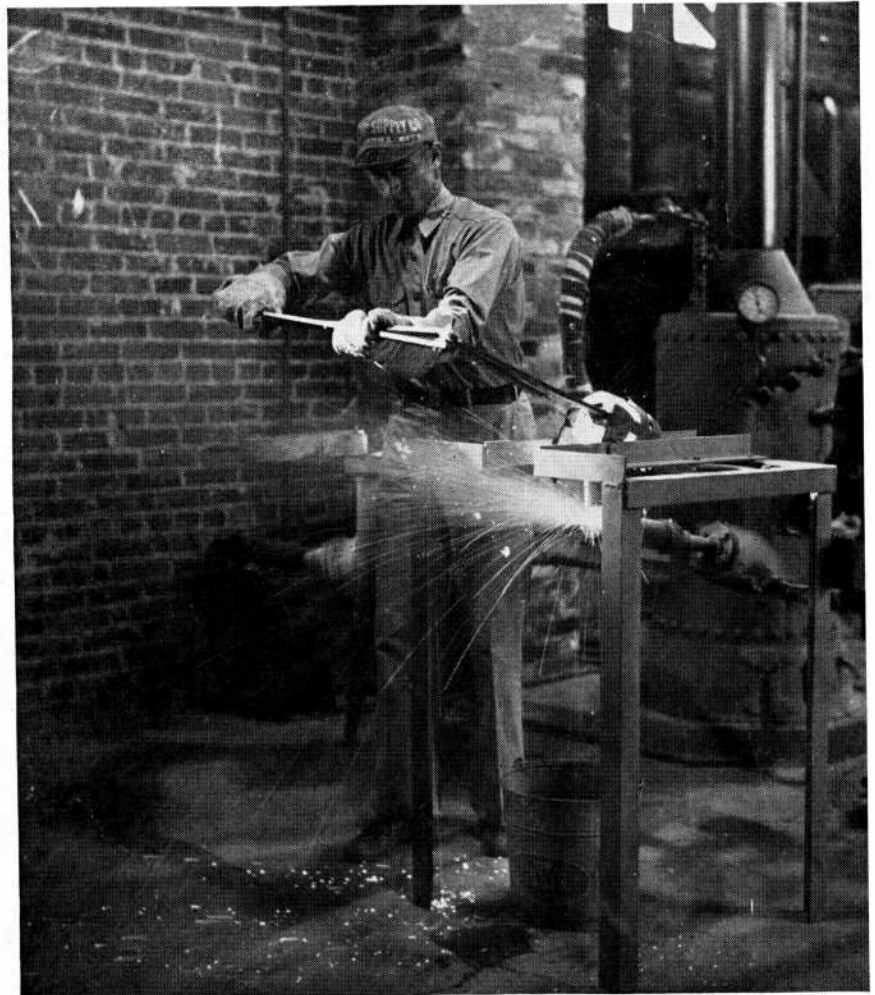
For many years the production of oil has been the major factor in the industrial life of Oklahoma. Oil completely overshadowed the other mineral resources of the state and the development of these other resources has consequently been somewhat neglected. When the oil industry was growing and new fields were being rapidly discovered in the state a large percentage of our industrial workers depended directly or indirectly upon that

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In the top picture on the right, rock wool is being produced in the shops of the Oklahoma Geological Survey. The middle picture shows part of the Survey's laboratory



On the left are F. C. Wood and Lloyd Powers, of the Survey, and Mayor Finley McLaury of Snyder, with the Survey's water location apparatus. Right, Frank King, Survey laboratory technician, with a sample of Oklahoma rock wool



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industry. In recent years the number of new oil fields discovered has decreased rapidly, areas of potential or possible new production are not too numerous, and exploration has become a highly technical and expensive operation with machinery and equipment refined to a high state of efficiency.

All of these factors tend to decrease the number of workers needed by the oil industry and consequently many men have been forced to seek other employment or move to other sections of the country. The Oklahoma Geological Survey hopes to assist in the establishment of new industries in the state which will both absorb workers and offer new opportunities for capital investment.

A most important tool necessary to any physical research program is an adequately equipped laboratory. Although handicapped financially the Survey has, with the assistance of several public spirited manufacturers, equipped a small but efficient industrial research laboratory. All essential instruments are available such as crushing and grinding equipment, screens, furnaces of various types and heating capacities, assay furnaces, ceramics kilns, and so on. A complete ore dressing experimental plant is available including flotation cells, jigs, concentrating tables, and filters. Special equipment is constructed when necessary for specific problems.

This is the only laboratory of its kind in the state and, while designed for the use of the Survey staff, it is available to any competent engineer who has problems to solve affecting the state's resources. No charge will be made for such accommodation except for current supplies, such as chemicals and similar items. Any projected work must, however, be approved by the director of the Survey.

In 1936 and 1937, with the assistance of the Works Progress Administration, a very comprehensive mineral survey or inventory was carried on throughout the state. Some six hundred men were employed in this work and thousands of records and samples representing every county of the state are now in permanent files and available for further research. This information is so voluminous that it may not be published in bulletin form, but both records and samples are available to the public and the Survey will try to answer any inquiries regarding specific minerals in specific locations.

One of the first possibilities that occurred to the staff of the Survey was that of producing rock wool from local materials. Many samples of various kinds of rock from all parts of the state had been analyzed chemically and it was not

difficult to pick out several hundred samples that might make rock wool. Some special handling and steam blowing laboratory equipment was designed and constructed to approximate actual manufacturing conditions and tests were started.

The first such test made produced a good quality of rock wool and since then some seventy different deposits scattered throughout the state have been proved to be good sources of wool rock. The quantity of such rock is almost unlimited and in many instances the cost of mining would be exceptionally low. At present most rock wool factories use coke for fuel. Because of Oklahoma's large supply of cheap natural gas, a new process was devised and drawings have now been completed for a gas burning plant of fifty tons daily capacity.

The first of these plants will probably be completed in Oklahoma this spring, and a bulletin on rock wool possibilities in this state will be issued this summer.

Another accomplishment of the research department of the Survey is the development of prospecting for underground supplies of water by use of an electrical resistivity method. As used by the Survey, this system has been highly successful and many new sources of water supply have been found for municipalities in all parts of the state. This electrical method has also given very good results in the investigation of proposed dam sites and bridge locations. It is hoped that experimental work now in progress will increase the efficiency of the method so that much greater depths can be accurately explored than is now considered possible.

A large tonnage of bleaching clays is annually imported into this state. Laboratory tests have shown that a number of clay deposits in Oklahoma are suitable for such use and further research in co-operation with the School of Petroleum Engineering at the University of Oklahoma may develop a new clay industry.

Another industrial opportunity is in the field of ceramics. Very little is known about the physical properties of the clays and shales of the state but the Survey laboratory is now equipped to make the necessary investigations and a research project will be started in the near future.

Large areas of farm land in Oklahoma are deficient in phosphate content. In co-operation with the Extension Division and the Experimental Station of the Oklahoma A. and M. College, the Survey is endeavoring to locate deposits of phosphate-bearing rock in the state and to devise methods of production and treatment that will make the phosphate cheaply available for agricultural use. A number of rather low grade deposits have now been found and analyzed, but their economic value has not yet been determined.

Only a few of the possibilities opened up by industrial research have been mentioned here. There are many others.

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