

Science at Work

By G. L. CROSS

Acting Director, Research Institute

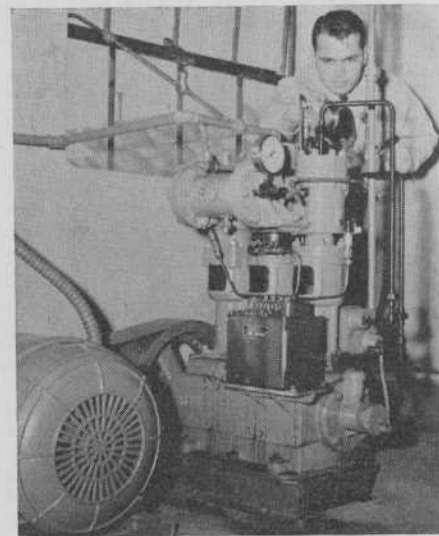
THE RESEARCH INSTITUTE was incorporated under the laws of the State of Oklahoma on March 29, 1941. The incorporators hoped in this way to make the research facilities of the University available for use in the development of the State's natural, industrial and human resources. It can now be stated with confidence that the plan was a good one.

The Institute has grown and developed steadily, even remarkably, during the first two years of its existence, a fact which may come as a surprise to many who had feared that progress could not be made because of the War. The War has had an effect, but certainly not in the sense that the demand for research has decreased. On the contrary, the demand for research of the type that the Institute can provide has been almost amazing, and our program could be doubled or trebled if increased personnel, equipment and laboratory space were available.

The possibility of securing additional laboratory facilities does not appear bright as far as the immediate future is concerned. Funds to construct a building in which to house the Institute were appropriated by the State Legislature in 1941, and the architect's plans were completed and approved by University authorities during 1942. However, because of priorities, it finally became necessary to delay construction until after the War.

The possibility of obtaining additional personnel within the next year or two likewise appears remote. As a matter of fact the Institute has lost a considerable portion of its staff to the war effort. The Director, Homer L. Dodge, was called to Washington to head the Office of Scientific Personnel of the National Research Council, and Royden Dangerfield, Secretary of the Institute, was made Acting Director on September 1, 1942. Early in December, 1942, Dangerfield, too, was called to Washington, and G. L. Cross became Acting Director. Thus, in less than one year, the affairs of the Institute have been handled by three different directors. Other losses of personnel include Professor G. A. Van Lear, who has gone to the University of Michigan to work on a war research project of the National Defense Committee, and Don Smith, Research Fellow, who was called to the Chemical Division of the Naval Research Laboratory at Washington, D.C. At the present time it is practically impossible to secure trained scientists or research fellows.

Despite these difficulties the Institute has undertaken twenty-three major research projects, most of which have been sponsored



NATURAL GAS PROJECT

Dehydration or removal of water from natural gas is one of 23 projects undertaken by the Research Institute. Technical supervisor for the project is Laurance S. Reid, engineering professor, shown reading a meter on the gas compressor used in the research.

and financed by industrial corporations located in the Southwest. Twelve of these projects have been completed, and in many instances requests for renewals have been received from the various companies. The eleven projects now in progress are distributed in the fields of Physics, Chemistry, Plant Sciences and Chemical Engineering; in the Physics Department, which has long suffered under a most severe lack of space and which has recently lost more than half its staff, full capacity has been reached, or perhaps even stretched a bit.

The companies which have sponsored and financed the projects are fairly representative of Southwestern Industry, although not all of them are located in Oklahoma or even the Southwestern Area. Included are: the Reynolds Manufacturing Company, the Halliburton Oil Well Cementing Company, the Stimson Reflector Company, Kenyon's Nursery, the Southern Natural Gas Company, the Commercial Solvents Corporation, the Phillips Petroleum Company, the Hercules Powder Company, the Lederle Laboratories, the Ethyl Corporation, and the Funk Brothers Seed Company. Projects have also been sponsored by the Naval Research Laboratory at Washington, D.C., the Oklahoma State Health Department and the Oklahoma State Chamber of Commerce.

The members of our technical staff who have supervised various phases of the research are: J. Rud Nielsen, G. A. Van Lear, Jr., Loyd Harris, R. L. Huntington, L. S. Reid, A. C. Shead, J. S. Walton, Samuel

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Glasstone, Bruce Houston, O. J. Eigsti and William Schriever.

The total amount paid or payable to the Institute for the support of the twenty-three projects is approximately \$36,000.

The greatest demand has been for research concerning the development of spectroscopic and polarographic methods of analyzing materials which are used in various phases of the petroleum and chemical industries. A project is just getting under way in which spectroscopic methods are being developed for controlling certain phases of the manufacture of synthetic rubber. These techniques for using the spectograph and polarograph have been developed by Professors Nielsen and Glasstone, respectively; they are receiving increasing application also in the analysis of dust, blood and urine. The usefulness of infrared spectroscopy in solving industrial and war research problems is becoming so widely appreciated that the Institute has undertaken to manufacture two large infrared spectrographs for the Phillips Petroleum Company and for the Naval Research Laboratory. The construction of these instruments is being supervised by Professors Nielsen and Schriever.

There has been a considerable demand also for research dealing with the dehydration of natural gases, and for studies of iron and lead corrosion. The data obtained are being put to practical use in the oil and gas fields of the Southwest.

It is logical that many of the projects submitted should come from the petroleum industry, but the use of the facilities of the Institute by other branches of industry and by agriculture is increasing. A request that the Institute conduct comprehensive experiments in the Southwest with several strains of hybrid corn was received recently from the Funk Seed Company. A breeding nursery, under the direction of Professor O. J. Eigsti, has been established at Norman. New strains produced here will be planted experimentally and studied in various parts of Oklahoma and the adjacent states. A special effort is being made to develop a strain of corn which will mature into at least a fair crop regardless of weather conditions.

The account of these activities will give an idea of what has been accomplished during the first two years of the life of the Institute. In the future, with increased personnel and facilities, it is thought that the Institute may: (1) increase its research service to the smaller industrial and commercial companies of the State which are not in a position to develop research departments of their own; (2) continue to provide research of special types to supplement the work of the research divisions of larger companies; and (3) take increasing initiative with respect to independent research programs designed to develop and utilize the natural, industrial, and agricultural resources of the State of Oklahoma. The achievements of the past two years provide considerable promise for the future.

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