Keeping the air in the entire building pure and at the proper temperature is the important function of this machinery. Many of the tests which federal scientists are making require instruments that cannot stand great variations of humidity or temperature.

By William Lauderdale

AT THE United States department of agriculture’s new Southern regional research laboratory, 2100 Robert E. Lee Boulevard, a citizen army of 50 scientists and technicians, chosen for leadership in their respective fields, has been assembled. From all sections of the United States, it is mobilizing to search out new, basic American farm commodities in an effort to relieve shortages brought about by war conditions.

Their study limited to cotton, cottonseed, peanuts and sweet potatoes, these behind-the-scene workers for national defense, with the aid of the several bureaus of the federal government at their command, are armed with microscopes, hundreds of test tubes, the latest laboratory devices and volumes of the latest technical data collected and directed by a director from all parts of the world before the war spread.

Already they are attempting to solve problems that will help this nation become more and more self-sufficient, looking toward the day when foreign products may be wholly unnecessary.

Its cornerstone laid in December, 1939, the $3,000,000 laboratory has been nearly two years in the planning and construction. Even now, it is not complete. Its construction was slowed by a fire in March of 1940 which threatened to destroy this four-story brick, steel and stone building which already has taken its place among the rapidly increasing number of government establishments along New Orleans’ lakeshore.

Almost Complete

Administrative offices occupy the front part of the building. The lakeside wing, dedicated to laboratory research, is almost complete, lacking only the installation of small machinery and some laboratory devices. In the other, an industrial wing, where processes developed in the other wings’ main laboratories will be tried on an industrial scale, workmen are busy preparing to install heavy machinery, including a complete cotton spinning mill which will raise three stories from a concrete base at one end of the wing.

Even so, with construction still in progress, the laboratory now has 150 persons, or approximately half of its anticipated staff, including administrative officers, assistants, technicians and laborers. The director of the laboratory, Harry P. Newton, technical assistant to the director. His office adjourns that of the director, D. P. J. Lynch, whose task it is to direct and coordinate the multiple activities of this huge scientific plant.

In all divisions, research and experiments are being conducted. In the sweet potato products division, the chief of which is Paul K. Dawson, eager workers armed with data from the laboratory’s $35,000 library are tackling the problem of how to manufacture starch from sweet potatoes.

Would Spare ‘Bottoms’

Therefore, the United States has imported great quantities of starch, made mostly from tapiocas. It is estimated, that American commercial interest requires 400,000,000 tons of this commodity annually. With “bottoms” hard to get and domestic industry able to produce only about 25 per cent of this amount from sources already known, this division is devoting a major effort to development of an inexpensive, yet efficient method of obtaining starch from native sweet potatoes.

If obtained in industrial quantities, this starch by. potato examples, will be used in industries, on paper and textiles and wallboard.

In the cotton chemical finishing division, headed by Dr. Walter M. Scott, scientists and technicians are conducting a wide range of research to determine the reaction of cotton, both on the surface and inside the fiber wall, to certain chemical treatments.

Permanent Starch

In this line of research, experiment already has produced a plastic finish for cotton material which will act as a permanent starch. Thus, if industrial production is feasible, men’s wash suits, women’s wash dresses and other cotton clothing materials may be “starched,” that is, covered with a substance which will make them more resistant to soiling.

This division also has the task of developing new machinery to manufacture textiles, or developing improved machinery for use in current manufacturing methods. This division works on the theory that by reducing soiling and staining it may be determined which materials are best suited for certain articles of apparel.

Fast Many Angles

A “launderometer” will test the fabric under simulated conditions. A “shadeometer” will determine what types of cotton fibers, after laundering, will become stronger; thus it may be determined which materials are best suited for certain articles of apparel.

If more is known about the fiber itself, this division will determine the fundamental properties of the fiber and its behavior under changes in temperature and humidity.

In addition to these research divisions, the laboratory has two services divisions, the analytical, which, as its name implies, is divided into chemical, physical and instrumental departments, and the engineering and development division. These divisions are headed by Dr. E. L. Sloan and E. A. Gallow, respectively.

Experiment, Analyze

The analytical division is dedicated to acquiring the research divisions with the properties of the raw material and the results of these experiments will be published in future reports.

The engineering and development division takes the smaller scale development of the research division and applies it to the actual operation of the laboratory. In this respect, the engineering and development division must figure out how to operate this process on an industrial scale, if the processes are not adaptable to the industrial scale, it is considered worthless.

Out of the work of all these divisions, laboratory officials believe, may come new processes, new discoveries and ideas which may help to make America independent of all other nations by making it possible to utilize home grown products. Basically, the laboratory is interested in developing new uses of materials grown in the South, which, if developed on a wide scale will help to free the South of economic chains which have bound it for decades.