Instituto De Oleos Do Brasil

BRAZIL possesses an educational and research institute which is unique in its aims and degree of specialization. The Instituto de Oleos do Brasil, now more than two decades old, is an agency of the Ministry of Agriculture but functions closely with the University of Brazil. The Institute was established by decree of President Getulio Vargas, September 22, 1931, to provide specialized training and foster research in the field of vegetable oils, waxes, and allied products. Joaquim Bertino de Moraes Carvalho, who is well known in the United States, was appointed director of the Institute, and it has been under his guidance and leadership that it has attained its present important and unique position.

The Institute was established as an outgrowth of various courses in physics, chemistry, and technology of vegetable oils and waxes presented in the Escola Superior da Agricultura e Medicina Veterinaria as early as 1928.

The Institute performs a variety of functions, foremost of which is the training of young men and women for employment in industrial and governmental positions. The students receive training at university level in various basic sciences in addition to specialized courses and laboratory work in the chemistry and technology of glyceride and essential oils and the natural waxes which abound in Brazil.

At the time the Institute was visited by the writer, in March and April, 1952, there were in attendance 12 undergraduate students from the Department of Chemistry of the University of Brazil and 10 graduate students. Recently the Brazilian Congress made available 10 scholarships to graduate students from states outside of Rio de Janeiro, and in 1951 the government decreed that the Institute could receive students from other countries on a scholarship or fellowship basis.

Selection of students is made with care, and the standards of scholarship are high and rigidly enforced. Students failing to meet these standards are dismissed, usually at the end of the first year. The dismissal rate may be as high as two out of three students originally entering the Institute.

IN addition to its functions as a training center, the Institute is designated by law as the government research center for oils, waxes, oilseeds, paints, varnishes, and similar products. It is empowered to enter into cooperative agreements with other government agencies and with private institutions.

Basic courses are given in mathematics, physics, optics, electricity, physical chemistry, colloid chemistry, photometry and colorimetry, microscopy, analytical chemistry, chemical technology, chemical engineering, botany, economics, and vegetable oil chemistry and technology.

Recognizing the importance to the vegetable oil industry of heat transfer, instrumentation, evaporation, distillation, steam deodorization, and unit process operations, the Instituto de Oleos inaugurated a special course in chemical engineering. Beginning with B. J. G. Mascarenhas, M.S. Vanderbilt University, the course was continued by F. M. Tiller, director of engineering and professor of chemical engineering at Lamar State College of Technology in Beaumont, Tex., who taught in the Institute from June to September, 1952. The Institute hopes to carry on this phase of its activities.

The physical facilities for teaching and research, both theoretical and applied, are exceedingly good. Laboratory equipment and instrumentation are representative of the best and most modern attainable from the United States, England, and Germany, particularly in the field of electricity, microscopy, and spectrophotometry.

Work benches, hoods, and other permanent installations are much below the standard of those encountered in comparable research institutions in the United States. This is however no accident, but the result of a policy of allocating as much as possible of the available funds for importing the best equipment obtainable and to improvise or construct locally such accessory facilities as may be needed for housing and operating it.

Pilot plant equipment is available for almost every type of operation from the extraction of oil-bearing materials to the manufacture of paints, varnishes, vegetable shortening, and soap. Some of this equipment is old and in some instances obsolete by modern standards, but it is adequate for teaching the principles of oil technology.

Library facilities are excellent, and there is no dearth of modern technical books, monographs, and current periodicals. The last mentioned include most of the important scientific journals of the United States, England, Germany, France, and Italy, and especially those pertaining to fats, oils, waxes, and allied products. Many of these journals are complete from the first issue.

THE Institute has conducted and published a large variety or research of rather high quality. Much of this work has appeared in the Boletim de Divulgação do Instituto de Oleos and other publications of the Institute. Because the bulk of the research of the Institute has been published in Portuguese, it is little known to English-speaking workers except through the medium of abstracts. The best known work of the Institute pertains to chaulmoogra and related oils, carnaúba, carandá and licuri (ouricury) waxes, ucuúba butter, cashew nut oil, babaçú and numerous other palm kernel oils, oiticica, and such essential oils as lemon grass and sassafrás. Work on these and other native fats, oils, and waxes is currently in progress.

Perhaps the greatest handicap of the Institute is the lack of a full-time teaching and research staff. At present only the director and two research workers devote full time to the Institute. The other 20 members of the staff divide their time between lectures at the Institute and other activities, such as teaching at the University of Brazil or other educational institutions or employment in various capacities in other government agencies.

The Institute is desirous of obtaining specialists in fat and oil chemistry and technology both for teaching and directing research. No doubt, there are a number of outstanding individuals in industry, the universities, and private as well as government research institutions who are qualified by training and experience and who would be interested in devoting a year or so to teaching and directing research in one or more branches of fat and oil chemistry and technology, including paints and varnishes, at the Instituto de Oleos. Such an assignment would be of mutual benefit to the individual and the Institute. If anyone should be interested in an assignment of this type, he should communicate with Dr. Bertino, Director Instituto de Oleos, Ministerio da Agricultura, Av. Maracanã 252, Rio de Janeiro, Brazil, setting forth in particular his qualifications in the field of chemistry and technology of fats and oils, paints and varnishes, or other specialty.

KLARE S. MARKLEY.

(EDITOR'S NOTE: *Dr. Markley is a vegetable oil specialist of the Institute of Inter-American Affairs, a U. S. Government Point 4 agency. As a member of the technical pool of the Division of Agriculture and Natural Resources, Dr. Markley is at present in Paraguay assisting with the development of seed and vegetable oil industries there, after which he will serve in a similar capacity in other Latin American countries.*)

Advance Work on Oils

A TOTAL of 32 papers on oilseeds, oils, extraction, refining, hydrogenation, food and nutrition, soaps and detergents, surface coatings, and so on were presented at the Symposium on Oils, Fats, and Allied Products held in Bombay, India, February 27-28, 1953, under the auspices of the Oil Merchants' Chamber Ltd. with Chhotabhai S. Patel, president, Bombay Oilseed Crushers' Association, and vice president, Vanaspati Manufacturers Association, as presiding officer. A message was read from D. P. Karmarkar, minister for commerce.

Previous symposia had been sponsored by the Central Laboratories of Scientific and Industrial Research, Hyderabad, in August, 1950, and of the National Chemical Laboratory of India at Poona, in November, 1951. It was suggested by Mr. Patel that the next symposium be held in Madras State.

The total annual production of oilseeds and oil-bearing nuts in India is estimated to be more than seven million tons, according to Mr. Patel. Problems facing the industry, he said, included the improvement of the quality of oilseeds and oils, the raising of the efficiency of the crushing industry, the search for various uses of vegetable oils for industrial purposes, the devising of better transport and storage, the export of processed oil instead of crude oils, and so on.

Stressing the need for more research, Mr. Patel suggested more laboratories devoted to oils and oilseeds in central locations and the establishment of a technological institute in each of the oilseed producing regions.

A.O.C.S. CALENDAR

1953—New Orleans, Roosevelt hotel, May 4-6.
Chicago, Sherman hotel, Nov. 2-4.
1954—San Antonio in spring. Minneapolis in fall.