

# GRADUATE TRAINING IN AGRICULTURE IN MEXICO

By Henry Tucker

Mexico, with almost half of its 45 million people engaged in Agriculture, faces a problem of providing enough food for a nation with the highest population growth in the Western Hemisphere.

With only a limited amount of available land, the key to success in the immediate future rests in intensified use of its present resources. One resource which can be expanded considerably is trained agriculturists, capable of working with farmers in developing improved practices and carrying on the research needed to meet the changing demands and conditions.

The 2500 students attending seven institutions with undergraduate programs in agriculture form a nucleus for the technical corps that is needed.<sup>1</sup> The only national source of specialists with advanced training is the Graduate College of the National School of Agriculture at Chapingo, Mexico.<sup>2</sup>

## Initiated in 1959

The graduate program at Chapingo was initiated in 1959 and the degrees of M.S. in Agricultural Science and M.S. in Science are offered in Botany, Phytopathology, Entomology, Agricultural Economics, Genetics, Soils and Statistics. Applicants to this program must have a professional degree, or have completed the course work and subsequently received the professional degree.

The professional degree, generally Ingeniero Agrónomo, is awarded after four years of course work plus a fifth year of research with the formal presentation of a thesis, and generally represents a higher degree of training than is obtained by the U. S. student with a B.S. in Agriculture. While there are some differences in the quality of presentation and preparation of teachers, graduate students in agriculture at Chapingo generally are at an academic level which is comparable with U. S. graduate students.

About 75 students presently are enrolled in graduate work at E.N.A.,

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almost half being non-Mexicans. Even when the numbers of Mexican students doing graduate work elsewhere is added to the 50 at Chapingo, this represents a relatively small number of potential master's degree candidates for the openings available.

In many cases, students are invited to take jobs as soon as they have completed their course work. Thus many fail to complete the degree requirements. Employers generally contend that they need a larger number of persons with lesser degrees, and only a few leaders with higher degrees to do the work that is needed in Mexico today. Salary differentials for additional degrees are relatively small, and offer little incentive for a person with the title "Ingeniero."

## More Personal Attention

With small enrollments, students receive more direct attention in classes than in the U.S. Textbooks are mostly English or translations of American texts and are currently comparable with those in U.S. land grant colleges. Course contents are also simi-

<sup>1</sup> Undergraduate programs, with year of founding in parentheses are: Escuela Nacional de Agricultura, Chapingo (1854), Hermanos Escobar de la Universidad de Chihuahua (1906) Instituto Tecnológico de Monterrey (1948), Universidad de Coahuila (1953), Universidad de Nuevo León (1956), Universidad de Sonora (1953), Universidad de Sinaloa (1960).

<sup>2</sup> A graduate program in parasitology is offered at Instituto Tecnológico de Monterrey and professional work in Veterinary Medicine is offered at the Universidad Nacional Autónoma de México.

lar. Course requirements are approximately three courses per semester for three semesters, followed by a research thesis and final oral examination before a three-man faculty committee. The major differences between the Mexican and U. S. graduate programs rest in the training of the faculty and the relationship between faculty and students.

With less than 10 percent of the total faculty in agriculture in Mexico with Ph.D. degrees and less than a dozen such degrees at Chapingo, it is doubtful if the overall training received by graduate students there is comparable to that received in the U.S. While graduate students have a closer relationship with their professors at Chapingo than at most Latin American schools, the shortage of qualified people in so many activities in Mexico places heavy demands on the faculty. Often their work takes them away from the campus and students more than is desirable in a good graduate program.

## Future Plans Aim High

Plan Chapingo, a program aimed at developing the school's academic and research facilities to a center of excellence for Mexico and Latin America, should strengthen the graduate program in many ways.

A combined effort of the Mexican government, private U. S. foundations, banks and other organizations, is aimed at establishment of a completely new campus, and bringing to that campus the research work and the offices of the Ministry of Agriculture. Then research facilities in all areas can be enlarged, and the financial structure for supporting students at all levels likewise will be strengthened.

The plan includes proposals to increase faculty salaries, create opportunities for faculty members to take advanced degree work at leading U.S. institutions, and to bring visiting professors to the campus. This should greatly strengthen the graduate program.

## Enrollment to Increase

Enrollment is expected to grow considerably and thus provide a broader base for the graduate program.

Within a few years, Mexico will be able to produce Ph.D.'s in all the agricultural sciences to help meet the ever-present shortage of trained teachers and research workers.