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MEXICANS STUDY ABROAD

A Report from James G. Maddox

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One of the important avenues by which new knowledge is entering Mexico is by way of the Mexicans who go abroad to study. Among well-to-do families it has long been customary to send intellectually-inclined sons, and a few daughters, to foreign countries for at least a part of their college education. In the days before The Revolution which started in 1910, when the intellectual atmosphere of the country was dominated by a few aristocratic families, the custom of sending some of the children abroad to finish their education was as commonplace and necessary to maintenance of social status as was the coming-out party in the United States. Both were social obligations, which were shouldered to maintain family prestige. Nevertheless, study abroad was even at that time an important source of new ideas, particularly in the fields of politics and medicine. Politics and medicine have long been areas which the sons of upper-class families could enter without loss of social prestige, and during much of the last century young Mexicans who went to France, England, and the United States to complete their education came into intimate contact with an intellectual atmosphere quite different from that which prevailed in Mexico.

With a breakdown of the old aristocratic agrarian society, a process which has been taking place quite rapidly in Mexico during the last two or three decades, the whole rationale for foreign study has undergone a complete change. Such study is no longer limited to the children of wealthy families. Moreover, it is not primarily a device for maintaining or establishing family social status. The sons and daughters of middle-class families are interested in foreign study because it will aid them in climbing the ladder of material success by qualifying them for better jobs, and because they feel that they have an opportunity to make a contribution to their country's welfare, now that the shackles of traditionalism have been broken and the country is well along the road to developing a modern commercial society. There is much less interest than was the case four or five decades ago in going abroad to study the humanities. Grammar, rhetoric, and abstract logic are losing ground to physics, chemistry, engineering, scientific agriculture, and economics. With these changes in the type of student who goes abroad, and the subject matter in which he is interested, has come a shift in the foreign countries to which Mexicans go for study. Whereas France was the intellectual mecca of last century, now the United States is the main center of attraction. During the 19 months from January 1955 through July 1956, the United States consulates in

Mexico issued more than 3,800 student visas permitting Mexicans, and other foreign nationals who reside in Mexico, to go to the United States for study. Many also go to Western Europe and Canada, and a few Mexicans go to other Latin American countries, particularly Chile, Brazil, and Costa Rica.

The great majority of those who go abroad for study pay their own expenses from personal or family funds, but others (and the number is significant) receive scholarships which defray all or a part of their expenses. Scholarships are available annually from both public and private sources. Most of them are in fields of study in which there is a shortage of well-qualified personnel in Mexico. Some scholarships are offered in conjunction with technical assistance activities, and nearly all of them are indirectly aimed at encouraging Mexico's economic development. They hold a special interest, therefore, for those of us who are focusing attention on those factors which help explain Mexico's rapid rate of economic growth.

There are seven fairly large and continuing fellowship programs available to Mexicans for study in the United States. They are administered by the following agencies:

1. International Cooperation Administration (Point IV)
2. International Educational Exchange Service
3. The Bank of Mexico
4. The Rockefeller Foundation
5. The Kellogg Foundation
6. The specialized agencies of the United Nations
7. The Institute of International Education.

Although the fellowships granted by these seven agencies constitute the great majority of those available to Mexicans for study in the United States, there are also other organizations which grant a few fellowships each year. Among these are: The Guggenheim Memorial Foundation, The Cordell Hull Foundation, the Harvard Club, the M.I.T. Club, the Cornell Club, and several business firms or related foundations, including Sears Roebuck, the Squibb Company, and Johnson's Wax Company. Moreover, a few fellowships are available from public and private agencies of Western European countries. In addition, the training activities of branch factories of some of the large foreign business firms often include the sending of selected employees to the home offices and factories for periods of special study. Finally, from time to time, various agencies of the Mexican government, and a miscellaneous group of service clubs and organizations interested in promoting international good will, give fellowships for travel and study abroad.

Obviously, there is no shortage of agencies that are offering fellowships. That there is a much greater demand for assistance than can be supplied by the available funds is not due to a lack of agencies, but to the small number of grants which most of them make available. As yet, there is no central point where a Mexican who wants to obtain a grant for study abroad can go to

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learn of the various types of fellowships available, but in Mexico City there is an informal committee sponsored by the Mexican-North American Cultural Center which acts as a loosely organized clearinghouse for information, and prevents considerable duplication and overlapping of effort among the major agencies in receiving applications and examining the qualifications of applicants.

It is difficult to obtain comparable data from the various agencies with respect to the number of fellowships granted each year. Some of the agencies operate on a fiscal year basis; others use the calendar year for their record-keeping; sometimes grantees are delayed in departing from Mexico; others are given extensions while they are abroad; some of the grants are for short periods of study while others may be for two or more years. When, however, we take account of the major differences, and make some allowance for fellowships granted by agencies which I have been unable to contact, it is safe to say that, during each of the past two or three calendar years, from 300 to 350 Mexicans have received grants for study in the United States. This does not include fellowships granted to Mexicans for study in other foreign countries and, as will become evident in later sections of this report, the majority of the grants were for relatively short periods. It is probable that not more than one-third of the scholarship recipients spend as much as nine months in the United States.

By examining some of the characteristics of the larger fellowship programs we can come to understand how they work, and gain some idea of their significance to Mexico.

POINT IV TRAINING GRANTS

The largest of the scholarship programs is administered by the International Cooperation Administration (ICA) as a part of its broader program of technical co-operation. ICA is the agency of the U.S. government which is responsible for technical assistance to underdeveloped countries. Its regional office for the Western Hemisphere, known as the Institute of Inter-American Affairs (IIAA), was started during World War II as a part of the Office of the Coordinator for Latin American Affairs. Early in its life the Institute initiated a program of training grants to aid Latin Americans to visit the United States for periods of study. From 1943 through 1951 the Institute made study grants to only about 90 Mexicans, mainly in the fields of health and sanitation. With the passage in 1950 of the Act for International Development, the U.S. government's technical assistance activities were greatly expanded and the training of foreign nationals began to receive increased emphasis as a means of aiding underdeveloped countries. As a result the training program in Mexico is now one of the large and important parts of the whole Point IV effort. From 20 to 25 per cent of the total U.S. funds for technical assistance to Mexico during the past three or four years has been used for grants to Mexicans to study in the United States. About 560 study grants have been awarded in the past five fiscal years. Most of these have been made in the past three years. Fields of study, and the amounts of funds involved, are shown in the following table:

Number of Mexican trainees sent to the United States and funds obligated for training by the U.S. technical assistance program in Mexico during the fiscal years 1954, 1955, and 1956

<u>Field of Training</u>	<u>Number of Trainees</u>	<u>Funds Obligated</u>	
		<u>Total¹</u>	<u>Per Trainee</u>
Agriculture	32	\$ 93.3	\$ 2,916
Industry	207	248.9	1,202
Transportation	5	14.0	2,800
Labor	133	314.4	2,364
Health	16	61.5	3,844
Education	18	39.0	2,167
Public Administration	21	40.6	1,933
Miscellaneous	<u>21</u>	<u>24.6</u>	<u>1,171</u>
TOTAL	453	\$ 836.4	\$ 1,846

Almost three-fourths of the total number of trainees were in the fields of industry and labor. This emphasis is probably more pronounced in Mexico than in most Latin American countries, but it points up an important and relatively new aspect of the U.S. training program. During the first ten years -- that is, from 1943 to 1953 -- the major emphasis in the Point IV training activities in Latin America was on reaching technicians in the fields of agriculture, health, and education, which were the main areas in which the Institute of Inter-American Affairs was providing technical assistance. Grants for study in the United States were linked closely with ongoing technical assistance projects in these fields. In Mexico, health projects were the major field of activity in which the Institute was co-operating with the Mexican government, hence most of the study grants were in the fields of health and sanitation. In 1951, with the organization of the Technical Cooperation Administration, there was some broadening of the field of interest, but it was not until the organization of the Foreign Operations Administration (FOA) in 1953 that a new philosophy of training became evident, which among other things has resulted in heavy emphasis on short-term training grants in the fields of industry and labor.

A substantial number of the key men in FOA, the U.S. government agency that preceded ICA in administering the bilateral technical assistance program, had had experience in the Marshall Plan for rehabilitating Western Europe. There the emphasis was on increasing the productivity of industry, and one technique that was developed for coping with the problem was the sending of productivity teams to the U.S. to study manufacturing methods, management techniques, and labor relations. These teams, usually made up of

¹ In thousands of dollars.

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plant managers and foremen, were often organized into traveling seminars, and spent most of their time observing and discussing industrial problems in U.S. factories. This technique of training was brought into the Latin American scene, and has turned out to be the largest part of the Point IV training program for Mexico.

The productivity teams from Mexico usually spend about six weeks in the United States on a tightly planned tour which is aimed at showing them those aspects of U.S. industry on which the particular team is focusing attention. The subjects of study have covered a wide range of topics -- from the management of filing systems in large offices to industrial safety techniques. Most of the teams, however, are organized to give the trainees insights into some fairly narrow aspects of commercial or industrial operations in the United States. A typical example is that of a team of 13 members, which went to the United States for five weeks in August and September 1955 to study U.S. methods of transporting, storing, and preserving fresh fruits and vegetables. Six members of the team were businessmen engaged in the handling of fruits and vegetables in Mexico; three were employees of the Mexican government in posts which pertained to fruit and vegetable marketing; one was a professor of agriculture in the Technological Institute of Monterrey; one was a student of agriculture in the national agricultural school near Mexico City; one was the president of a society of agricultural producers in a vegetable-and fruit-growing area; and one was a farmer. As is customary, the team was assigned a project manager from the Washington staff of the training division of the ICA, who met the men at Los Angeles, their first point of arrival in the United States, and remained with them throughout their visit. They were also provided with two interpreters.

This particular team spent three days in the Los Angeles area visiting the plants, warehouses, and transportation facilities of three large companies engaged in buying and selling fruits and vegetables. Chartered buses were used for the trips to these plants. The team then traveled by train to Berkeley, California, to spend eight days visiting the plants of business firms, offices of the State Health Department concerned with the inspection of foods, the food technology division of the University of California, and in seminar discussions about what had been seen and learned. The team then went to Salem, Oregon, where it spent two days visiting fruit-and vegetable-packing companies, before it departed by plane for Chicago. It stopped in Chicago for a week and made more visits to private firms and public agencies concerned with the marketing of perishable foods. It then went to New York for three days before proceeding to Washington, from where -- after a week of visiting a few more private firms and listening to speeches by various government experts, mainly from the Department of Agriculture -- it returned to Mexico.

The productivity teams for industrial workers focus major attention on technical operations and management problems of business firms, with some minor attention to the work of government agencies that service or regulate the particular industry being studied. There is considerable question about how much any group can learn during these short, whirlwind tours, but the focus of attention is on technical methods and techniques. At the same time, of course, it is hoped that the visitors will be favorably impressed with the United States. The creation of good will may be secondary to the aim of transferring technical knowledge, but it is nevertheless present. In the case of the labor teams, the second largest category of trainees sponsored by the

Point IV program, the objective is a little more clearly that of creating good will and impressing Mexican labor leaders with the values and functions of a free labor movement in a private enterprise system of production. The labor training program grew out of the recommendations of Dr. Milton Eisenhower, brother of the President, following his official visit to the Latin American countries in 1953. It is frankly aimed at offsetting communist influence among Latin American labor unions by encouraging closer relations between organized labor in the United States and the Latin American countries.

The labor teams, of which there have been 14 from Mexico during the past three years, usually stay in the U.S. for three months. A typical example is that of a team of five members of the Union of Workers of the Radio Broadcasting, Television, and Allied Industries of the Republic of Mexico, which went to the United States about the middle of November 1955 for a three months' study of trade union organization and labor-management relations. Four of the five members of the team were employed by the industry -- two as announcers, one as program director, and one as radio engineer. The fifth was the full-time secretary general of the union to which all of the members of the team belonged. Their program was planned by the Office of International Labor Affairs, U.S. Department of Labor in Washington. They had a two weeks' orientation seminar at St. John's College at Annapolis, Maryland, which included: the history of the development of the trade union movement in the United States; a study of collective bargaining and other aspects of labor-management relations; a discussion and study of the social, economic, and industrial structure of the United States. They then set off on a planned tour of the United States, which took them to New York, Buffalo, Chicago, Detroit, Los Angeles, San Francisco, Lexington, Knoxville, back to Washington, D. C., and thence to Mexico with a three-day stopover in Miami. At each of their principal stops they had a planned schedule of visits to radio and television stations, discussions with representatives of the broadcasting companies, visits to union headquarters, and both formal and informal visits with various types of radio and television employees. They also attended the merger convention of the AFL and CIO as special guests of the unions, visited a few industrial plants, one of the TVA dams, and numerous points of general interest to the foreigner.

On their return to Mexico, they prepared a five-page report about their trip, which made a few obvious comments about the labor movement in the United States; mentioned the competition between radio and television; and thanked the various organizations and individuals who had helped make their trip a success. Judging from the tone of the report and a long conversation which I recently had with the secretary of the union who had acted as the team leader while the group was in the States, I have the impression that all members of the group were favorably impressed with what they had seen and heard. They felt that they had made too many visits to too many broadcasting stations, in each of which they had seen about the same thing. They had been so occupied with these affairs, that they had been cut short in learning about some of the general economic and social characteristics of the United States in which they were interested. The union secretary spoke highly of the seminar at St. John's College, but apparently this kept the group occupied for only about two hours each day and time hung a bit heavily on their hands. They felt that the tour could have been shortened to about six weeks with no loss to them. This was a point which the team made in its report, and which the secretary of the union reiterated to me two or three times during our conversation. He had obviously been bored by seeing too much of the same thing. When I asked if he could give me concrete and specific examples of things he had learned that

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could be applied either to the management of union affairs with which he is primarily concerned or to the programing and production of radio and television broadcasts in Mexico, he responded at length with a discussion of the many differences between the industry in Mexico and the U.S. -- differences that center largely around the amount of money which advertisers are willing to pay for programs. However, he did say that his union was seriously studying the possibilities of trying to institute an industry-wide contract between the union and the broadcasting companies to replace the present system of individual contracts. This was an idea which he had picked up on the tour, and it was about the only thing that he could think of which may eventually be a specific result of the trip.

Although trainees in the fields of industry and labor account for about three-fourths of the total number of Mexicans coming to the U.S. under the auspices of the Point IV program, those in other fields of study may be more significant bearers of new technical knowledge. Trainees in such fields as agriculture, health, education, and public administration are usually fairly well trained in their particular area of specialization, before they are selected for Point IV assistance. Many of them are employed in technical jobs with Mexican government agencies at the time they are selected. A high percentage of them participates in special short courses arranged in the United States by agencies of the U.S. government, but a significant proportion enrolls in U.S. universities. In the latter cases, the grants are usually for a full college year of study, and it is because of these longer-term grants that the costs per trainee, shown in the preceding table, are relatively high for the fields of health and agriculture. Before the recent emphasis in the training program on industrial and labor trainees, it was the scientists and technicians in government agencies administering action-type programs who were most likely to receive Point IV grants for study in the U.S.

Clearly, the Point IV training program is aimed at two different types of objectives. On the one hand, it has a "bulk operation," represented by its activities in the fields of industry and labor. These programs send large numbers of people to the United States for short periods of study. The recipients of these grants usually get "the grand tour treatment," and there is about as much emphasis on impressing them favorably as on increasing their technical knowledge. On the other hand, the program also has a "quality operation," in which small numbers of carefully selected technicians and scientists are sent to the United States for serious study. They usually stay for six months to one year, and either attend a special course designed by some of the U.S. government agencies, often in co-operation with one or two universities, or they take regular courses, though perhaps, as special students, at a U.S. university.

It is noticeable that the Point IV program has not centered its attention on building up the teaching and research staffs of selected institutions of higher learning within the Latin American countries. Had such a program been started ten years ago, there would now be in Mexico and several other Latin American countries enough well-trained faculties to provide much of the training which Mexicans are now going to the U.S. to obtain. Throughout the history of the Point IV program, since its beginning in Latin America as an emergency measure in the early 1940's, its administrators have been in a hurry and have centered emphasis on programs that were aimed at getting immediate, action-type results. To some extent the training program has been caught up in this same kind of psychology.

Two important questions in connection with any scholarship program for foreign students are: (1) Do the recipients of the training grants improve their knowledge, techniques, and abilities by their period of study in the U.S.?; and (2) On their return to Mexico are they able to put to use what they may have learned? Neither question is subject to a precise answer. In an attempt, however, to throw some light on the problems suggested by these questions, the training officer of the ICA mission in Mexico recently sent a short questionnaire to 447 of the former trainees aimed at getting their own evaluation of their training experience. Approximately 50 per cent answered all or parts of the questionnaire. All except two of the former trainees said that they had profited from their period of study in the U.S. Of the 227 who answered the question: "Have you been able to apply what you learned in Mexico?" 173 said "yes" while 54, or almost 24 per cent, responded negatively. Among the public administration trainees, 75 per cent indicated that they had not been able to apply what they learned in the U.S. after their return to Mexico, and among the trainees in the field of labor the corresponding proportion was 44 per cent.

Most of the trainees in public administration had been statisticians, and had taken a special course sponsored by the Census Bureau in Washington. It was a course which involved a combination of practical work and college-level courses in statistics, and is probably one of the best of the specialized courses offered foreign students by U.S. government agencies. Yet when the Mexican trainees returned they found little opportunity to put their new knowledge to use. There was neither the inclination on the part of their superiors to make changes in the ordinary routines of assembling and processing statistical data, nor were modern tabulating and sorting machines available in their Mexican offices for handling statistical data by the methods which they had learned in Washington. There were also analogous difficulties among several of the public administration trainees who were not statisticians. Government practices and procedures in most Mexican agencies are so vastly different from those of the United States that it will probably be many years before there will be any substantial direct transfer of U.S. techniques of public administration to the Mexican scene. Efficiency in the routine operations of government, according to U.S. standards, is largely a matter of increasing productivity per man-hour of labor. In a country such as Mexico where labor -- even of the white-collar variety -- is plentiful, where government jobs, even though low-salaried are often easy and carry substantial fringe benefits, where organized government workers are of importance to the ruling political party, and where there are traditions of "featherbedding" and of "padding" of government payrolls, modern ideas about increasing efficiency fall on rather barren soil.

Somewhat the same situation prevails with respect to the labor trainees. The labor movement in Mexico is mainly a political movement. It is not a "trade union" movement in the U.S. sense of that term. Few of the unions have welfare programs for their members. Neither do they have statistical or research departments to aid them in negotiations pertaining to wages and working conditions, nor educational divisions to assist with membership or public relations problems. Many of the big and important wage negotiations become disputes that are settled by a government representative determining the wage level. It is commonly said that many of the unions receive some subsidy in one form or another from the government, and it is clearly evident that they are important cogs in the dominant political party -- a party whose major

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candidates have never suffered defeat. Although members of the labor teams that go to the U.S. may pick up some good ideas about how to operate a union, how to improve labor-management relations, or even how to increase productivity in the particular firms where they are employed, few such ideas could be put to use in Mexico until there are changes in the total environment in which organized labor and industry functions. Such changes may be speeded up a little by the Point IV training program, but of this no one can be certain. Moreover, it is extremely difficult to learn with any degree of assurance how effective the program has been in creating good will for the U.S. There is little doubt that most members of the labor teams have enjoyed their trips to the United States, have been favorably impressed by most of the things that they saw, and are probably in a better position than before to understand and interpret the day-to-day news about U.S. events and policies. This in itself may be quite a worthwhile achievement. The real question is: Could the same results be achieved, and the labor unions of Mexico also be aided in improving their functions, by a program which would put more emphasis on assisting them with union management and operating problems and less emphasis on "selling" them on the United States?

Among the trainees, other than those in public administration and labor, a significant majority said that they had been able to apply what they learned in the U.S. after they returned to Mexico. The highest ranking group in this respect were the 18 people in the field of education. Most of these were college professors at the time of their selection, and had gone to the United States for advanced study. Only two said that they had been unable to apply what they learned after they returned to Mexico.

As further information on the extent to which foreign study had aided the trainees it was possible to compare the job status of 226 of them in the spring of 1956 with the positions which they had held at the time they were selected to receive study grants. Of this number, 147 were in the same or essentially equivalent position, whereas the remaining 79, or 35 per cent, had better jobs. However, except in the health and sanitation fields, there seemed to be little relation between either their field of study or the length of time they spent in the U.S. and the fact that they now have better jobs. Several of the health and sanitation trainees had been connected with the joint U.S.-Mexican health program of technical assistance, and some of them had been granted scholarships as a means of preparing them to take over more responsible positions in that program. Thus, 60 per cent of the health and sanitation trainees had better jobs in the spring of 1956 than at the time they had been selected to receive study grants. Except in cases of this nature, however, it is highly probable that there are many factors other than study in the United States which influence the rate at which ex-trainees climb the occupational ladder.

It is interesting to note the major suggestions made by the trainees for improving the program. A total of 204 responded to the question asking for their suggestions. The main comment of 77 was to the effect that the program was a good one and should be made available to as many Mexicans as possible. Practically all spoke approvingly of the program, but 84 made fairly specific suggestions for its improvement. The most common was that the period of training should be lengthened: 37 made this suggestion. Another 15, all of whom were from industrial jobs and had gone to the U.S. for short periods of observation and discussion, suggested that more time be spent in each plant visited, and 7 wanted practical on-the-job training as a part of the work of

the productivity teams. Ten of the trainees suggested that a special orientation course on customs and ways of living in the U.S. would be a good thing before the trainees left Mexico, or that some way should be worked out whereby they could spend time in private homes while they were in the U.S. Other suggestions included one for the establishment of some kind of mechanism in Mexico through which ex-trainees could teach some of their fellow citizens what they had learned in the States; and a few of the former trainees thought that the ICA should establish some sort of specialized employment bureau to help trainees toward better jobs after their return to Mexico.

Although the data from this survey, plus the other information that I have been able to bring together from conversations with ex-trainees and U.S. technicians connected with the program, hardly provide the basis for a definitive judgement, I feel reasonably certain that the training program is one of the best Point IV activities in Mexico. In many respects it is emphasizing the superficial, and it certainly is failing to strengthen the colleges and universities of Mexico, which in the long run must be the direct and indirect sources of most of the technically trained manpower which the country needs. Nevertheless, the program is making a worthwhile contribution, and it can have an even greater impact if its administrators will reduce the volume of trainees while lengthening the period and quality of study in the States.

INTERNATIONAL EDUCATIONAL EXCHANGE SCHOLARSHIPS

The U.S. Government finances a second scholarship program, which is administered separately from that of the Point IV organization. It is under the jurisdiction of the International Educational Exchange Service of the Department of State, and is aimed primarily at promoting a better understanding of the United States in foreign countries. This program had its embryonic beginnings at the Inter-American Conference for the Maintenance of Peace, held in Buenos Aires in December 1936, where a Convention for the Promotion of Inter-American Cultural Relations was signed. Among other things, this Convention provided for the exchange of graduate students and professors among the countries that were signatory to the Convention. It was not until 1941 that the actual exchange of students and professors began, and it was not until the passage of the U.S. Information and Educational Exchange Act of 1948, and subsequent legislation, that the program grew to sizable proportions.

Three categories of persons are sent to the United States for study by this program: (1) selected public leaders, research scholars, and specialists; (2) primary-and secondary-school teachers; and (3) graduate students. The leaders, scholars, and specialists are usually given grants for only three months, and unless they supplement their funds from private sources or receive appointments as visiting lecturers at U.S. universities, their periods of study are ordinarily limited to visits to points of interest and discussions with U.S. colleagues in their particular fields of work. The primary-and secondary-school teachers usually spend six months in the U.S., one-half of which is taken up by visits to and observations of different school systems and methods of instruction, while the remaining three months is spent in study at the college or university level, usually in special courses pertaining to educational methods and techniques or to problems relating to the teaching of English as a second language. These teachers are recommended by the Mexican Minister of Education, and are given six-months' leave with pay from their regular jobs. Their final selection is made by the staff of the International Educational

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Exchange Service in Washington from which organization they receive eight dollars per day for living expenses while they are in the United States, plus transportation. A graduate student usually is granted a scholarship for a full year of study at a college or university.

The number of Mexicans who have gone to the U.S. in each of these three categories during the past three fiscal years is as follows:

	<u>1954</u> <u>12</u>	<u>1955</u> <u>19</u>	<u>1956</u> <u>12</u>
Leaders, scholars, and specialists			
Primary and secondary teachers	11	12	4
Graduate students	<u>8</u>	<u>12</u>	<u>12</u>
TOTAL	31	43	28

In addition to these, two Mexicans go to the U.S. each year under the terms of the Buenos Aires Convention. Obviously, this International Educational Exchange program is not large, but it reaches some rather important groups in Mexican society. It is interesting to note the fields of study of the 32 graduate students. Thirteen studied some branch of engineering; four studied some branch of agriculture; an equal number took chemistry; three studied physics; and there was one in each of the following fields: economics, public health, business administration, music, mathematics, medicine, industrial design, and metallurgy. As compared with some other Latin American countries for which I have seen similar data, this shows a heavy concentration of students in scientific and technical fields. It is a distribution which one might expect to find among the grantees of the Point IV training program, which is presumably particularly interested in the transfer of technical knowledge. The leader-scholar-specialist program has put considerable emphasis during the past three years on grants to journalists, and persons occupying high positions in radio and television broadcasting. The members of this group are, of course, important formers of public opinion. But there have also been scientists, lawyers, engineers, and public administrators.

BANK OF MEXICO SCHOLARSHIPS

In 1944, the Bank of Mexico started a program of scholarships for foreign study, which has steadily expanded until it is now second in size only to the Point IV program. Almost 400 Mexicans have received grants for study abroad from the Bank of Mexico during the past 12 years. This program emphasizes study at the graduate level and in those fields in which Mexico recognizes a need for more well-trained manpower. The program was originally started as a small effort to provide the Bank with better-trained personnel in economics and bank administration. It was soon enlarged in scope, however, to provide training for scientists and technicians in numerous fields of knowledge that can directly contribute to the economic development of Mexico. Two types of fellowships are granted each year: those that cover all expenses for travel and study abroad, and those that supplement the trainees' private funds or grants from some other source.

The following tabulation shows the number of scholarships of each of the two types, by fields of study, for the period from 1947 to 1952. Summary data for the more recent years are not available, but I have been assured by

the director of this program that the fields of study during the past four years have not been greatly different from those of the earlier period.

<u>Field of Study</u>	<u>No. of Complete Scholarships</u>	<u>No. of Supplementary Scholarships</u>
Natural Resources	6	7
Agriculture and Forestry	32	5
Industrial Technology	21	23
Public Health and Medicine	9	13
Public Services	26	16
Miscellaneous	<u>4</u>	<u>12</u>
TOTAL	98	76

Clearly, a large proportion of the scholarships has been concentrated in the three fields of agriculture and forestry, industrial technology, and public services. Within each of these general fields there has been a wide range of specialization. For instance, among students interested in agriculture, 11 specialized in some aspect of sugar production and processing, 5 in problems pertaining to tropical fruit production, 5 in forestry, and 2 in soils. In the general field of industrial technology, 18 of the students specialized in some aspect of chemical engineering or closely related subjects in an attempt to increase Mexico's supply of qualified manpower for one of its newer industries. But five students were concerned with textile engineering or design, and others studied food processing and conservation. Among the scholarships in the field of Public Services were a large number of economists and a few students of international law, but the list also included several architects, port engineers, and specialists in highway- and bridge-construction.

Although there are no hard and fast rules for the selection of the people who receive Bank of Mexico scholarships, practically all of the recipients have finished their undergraduate training and are granted scholarships for postgraduate study. Most of them are employees of some agency of the Mexican government, of a university or technical school, or of an industrial plant in which the government has substantial investments. A few, however, are recent graduates of universities or technical schools and have not yet started to work at the time of their selection, and a few are chosen from private business firms. Most of them are from 22 to 30 years of age. In the selection process major emphasis is given to two factors: the academic and employment records of the applicants, and the country's need for trained manpower in the various scientific fields. No fellowships are granted for study in such fields as art, music, and literature. The program is aimed directly at enhancing Mexico's supply of skilled scientists and technicians. Just about half of the fellowships are for periods of two or more years of study abroad. Nearly all of the remaining ones provide for one year of college study, but sometimes the student is given a preliminary month or two abroad for the purpose of perfecting his knowledge of English.

The Bank of Mexico, which has several important functions that are

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only indirectly related to the ordinary activities of central banking, is one of the most highly respected government agencies in the country, and its scholarships program is held in high esteem by all with whom I have talked. As contrasted with the Point IV training program, it centers major attention on assisting men who show unusual intellectual promise to take full-time graduate studies in the better universities abroad. Many of the best-trained scientists and technicians in Mexico have received at least a part of their graduate training on scholarships provided by the Bank of Mexico.

In 1952, the Bank published a study of scholarship programs in the agricultural sciences, which contains some miscellaneous findings that may be of interest in U.S. educational circles.*

For instance, the authors of this study obtained the grades of 100 of the agriculturists who had received scholarships from the U.S. government, the Bank of Mexico, or the Rockefeller Foundation. None of the students made A's during the first term or semester of foreign study. In the second semester, however, 67 per cent of the grades for those on a one-year scholarship were A's and 35 per cent of the grades of those with two-year scholarships had risen to A's. For the latter group, 87 per cent of the grades were A's at the end of the third semester. These findings suggest that the students had a difficult time adjusting to their foreign situations during the first few months, but after getting their feet on the ground they did remarkably well. A part of the adjustment problem was the lack of complete fluency in English, but the authors of the study point also to different methods of teaching, and the lack of understanding on the part of the students as to what was expected of them.

The ex-trainees were asked to rank in order of importance those aspects of their training abroad which they considered to be most important or helpful. Almost 45 per cent ranked their professors as the most important element, and an additional 37 per cent put the objective nature of the teaching they received in first place. Laboratories, libraries, social environment, and texts were clearly of secondary importance as compared with the professors and their methods of teaching.

As a part of the study the ex-trainees were asked to list the advantages and disadvantages of studying abroad. Forty-three per cent mentioned only advantages, while an additional 48 per cent suggested both advantages and disadvantages. Among the advantages were the following:

1. Study at a more advanced level than was possible in Mexico, and direct contact with scientific investigators.
2. Objective teaching which was focused on problems of practical interest.
3. Dominating a new language, and thus opening doors to new sources of technical knowledge.
4. Technical knowledge taught directly to students by world authorities.

* Programas de Becas para Estudiantes Mexicanos de Ciencias Agricolas, by Baldovinos and C. Perez Castro.

Among the disadvantages of studying abroad the following were the most important:

1. Loss of time in the sense of being unable to apply what they had learned to the Mexican situation, and the loss of contact with the Mexican professional environment.
2. Differences of customs, food, ideology, and concepts of the people in other countries.
3. Difficulties of acceptance and recognition in Mexico of foreign degrees, and the hostility or apprehension which the returned trainee often meets on the part of fellow professionals and some high authorities.

Seventy-three per cent of the ex-trainees said that they had had difficulties in getting themselves reincorporated into Mexican professional circles and ways of working. A few were quite bitter about the way they had been received when they returned from their foreign study. The three big complaints were: the shortage of facilities for carrying out scientific investigations; a bad administrative environment in which to work -- poor organization, lack of interest and co-operation on the part of fellow-workers; and, finally, insufficient salaries. Notwithstanding the difficulties, most of the trainees apparently return to posts where they can make a contribution with their new-found knowledge. The authors of the study reported on the work which 81 of the ex-trainees were doing after their return from abroad. Forty-eight were engaged in research or teaching or related fields that were directly concerned with their specialization. Twelve were either in agricultural extension work or were farming. Fifteen had administrative posts in government, and six were in private commercial jobs.

SCHOLARSHIPS THROUGH THE INSTITUTE OF INTERNATIONAL EDUCATION

The Institute of International Education is a nonprofit organization with headquarters in New York. It promotes the international exchange of knowledge by aiding foreign students and professors to come to the United States and by helping similar groups within the U.S. to go abroad for periods of study. Through contractual arrangements it administers the nonpolicy aspects of the scholarship program financed by the International Educational Exchange Service of the State Department. Likewise, it acts for a large number of colleges and universities in the United States which have scholarships available to foreign students by maintaining offices in foreign countries where applications can be made and through which applicants can be investigated. After such investigations, the Institute makes recommendations to the institution awarding the scholarship and informs the applicant of the final decisions. The Institute operates in Mexico through the part-time services of a member of the staff of the Mexican-North American Cultural Center, and a five-member scholarship committee. In its scholarship activities it acts as a clearing-house and administering agency, but does not itself have funds from which to make grants for foreign study.

During the past three or four years, it has been able to offer 7 to 10 scholarships each year for study in the U.S. Most of these are made available by relatively small liberal arts colleges, by service clubs, local community groups interested in international relations, and a few U.S. business

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firms. Often the funds for a given scholarship may come from two or three different sources. For instance, a college may offer free tuition, a local fraternity may provide board and room, while a service club or business firm will pay the additional costs involved in bringing a Mexican student to the campus.

There is considerable variation in the requirements for the scholarships made available through the Institute of International Education, because much depends on the interests of the financing agency. Most of the scholarships, however, are available only to graduate students, although a few are customarily made to undergraduates. The student selected must have high grades -- usually grades of B or better are required -- and a good command of English; and the selection committee must be convinced that he is a serious student who will be a good representative of Mexican culture. Those selected for post-graduate study must be between 20 and 35 years of age, and undergraduates must be between 18 and 22 years old.

Although the selection committee in Mexico receives many applications each year, it is somewhat difficult to find students in medicine, architecture, engineering, and business administration who meet the high requirements for the few scholarships offered in these fields by colleges and universities in the U.S. If more applicants were available in the arts and humanities, the Mexican director of the program would find the task of selection somewhat easier. There are numerous scholarships in these fields, some of which go begging for want of applicants. Nevertheless, most of the graduate students who receive scholarships through this program go to the U.S. to study science, mathematics, and engineering. Undergraduates, on the other hand, are concentrated mainly in the arts and humanities.

The program is small in scope as compared with some of the other scholarship programs available to Mexicans, but it is of significance because it continues from year to year, and can often be used to aid some particularly promising student who for one reason or another does not meet the requirements of the other programs. The fact that a few scholarships can usually be found in any one of a large number of fields, for the really exceptional student, means that this program provides a minimum of assurance to such students that they can go to the United States for study, even though their field of specialization may not be of particular interest to other scholarship-granting agencies.

KELLOGG FOUNDATION SCHOLARSHIPS

The Kellogg Foundation of Battle Creek, Michigan, regularly makes available from eight to ten scholarships each year to carefully selected Mexicans for study in the United States. The Foundation is interested primarily in improving the quality of dental and medical care. Therefore, its scholarships are limited mainly to persons interested in some phase of medicine, dentistry, nursing, hospital administration, or closely related subjects. Moreover, the Foundation usually interests itself in the improvement of the staffs of selected medical institutions, and requires that applicants for scholarships have a position or staff connection with these institutions. Applications for Kellogg scholarships are commonly made through these institutions, and the Foundation tries to work with each of them over a period of time so as to have a continuing impact in strengthening its staff in the particular areas of medicine in which it has the greatest need.

Among the institutions in which the Foundation has shown interest during the past two or three years are: the Hospital for Nutritional Diseases in Mexico City; the ABC Hospital in Mexico City, an institution that is used extensively by the American and English groups; the Medical School in Morelia; the Institute of Cardiology and the Children's Hospital, both in Mexico City. Scholarships have also been granted, however, to members of the faculty of the School of Medicine in Monterrey, and to an institution in Guadalajara. Thus, although Mexico City institutions may receive a lion's share of the scholarships largely because the political capital is also the medical center of the country, organizations in other cities, such as Morelia, Monterrey, and Guadalajara, are not left out of consideration.

The Kellogg Foundation does not maintain a permanent representative in Mexico, but the director of its Division of Medicine makes an annual trip to Mexico, usually in September of each year, for the purpose of interviewing all applicants who have been recommended by the sponsoring institutions. Although I have been unable to talk with anyone directly connected with the Foundation, it is quite clear that even though this is a small program it is of real and lasting significance. Both the recommending institutions and the individuals connected with them are carefully selected. Moreover, the recipients of scholarships are placed in those particular medical schools and hospitals in the United States which can make the greatest contribution to their particular fields of specialization. Finally, the persons who receive a Kellogg scholarship are usually financed for a full year of study, and some of them are given a grant for a second year of work. All of them are mature, qualified, and experienced people, usually in their middle or late thirties. The program is aimed at providing special training for the person who is already a recognized specialist. It is an important avenue, therefore, by which advanced medical knowledge flows into Mexico from the United States, and indirectly from other countries.

ROCKEFELLER FOUNDATION SCHOLARSHIPS

Another privately-financed scholarship program emanating from the United States is that of the Rockefeller Foundation, which for many years has been interested in improving health conditions in many parts of the world, and which has had a long history of providing assistance to selected scholars from many foreign countries for study in the United States. In 1943, the Rockefeller Foundation entered a new type of activity. It started, in cooperation with the Mexican government, a long-range program of research to improve the production of basic food crops in Mexico. This has grown to be a large, complicated, and highly successful research undertaking, with experimental projects in practically all of the major agricultural areas of Mexico. The main research work is in the fields of plant breeding, soil science, plant pathology, and entomology. The crops on which principal attention have been centered are corn, beans, and wheat, but experimental work has also been carried forward with vegetable and forage crops. New, high-yielding, disease-resistant varieties have been developed, and Mexico's food supply has quite evidently been expanded as a result of the Rockefeller Foundation program.

An important objective of the program is to train agricultural scientists of Mexico and other Latin American countries. The research and training program is carried out by an organization called the Office of Special Studies, which is a dependency of the Mexican Department of Agriculture but which is under the direction of the chief of the Rockefeller Foundation pro-

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gram in Mexico. It is jointly financed by the Foundation and the Mexican Department of Agriculture. The bulk of the training offered by the Office of Special Studies is in the nature of work experience on the part of young scientists assigned to the research projects, but there is also a fellowship program which sends selected students abroad. Each year 15 to 20 agriculturists come to Mexico from other Latin American countries and spend nine months to one year in the experiment station and laboratories of the Office of Special Studies in order to gain experience in scientific research methods. In addition to these men from other countries, the Mexican Department of Agriculture commissions about an equal number of promising young Mexicans to work in the program. Usually these men are graduates of the best agricultural and technical schools in Mexico. They are given jobs by the Office of Special Studies, and participate directly in the field and laboratory investigations. Their tenure in these jobs is usually for a one-or two-year period, during which time some of them finish their theses, which are required for professional degrees, and all of them gain valuable research experience. After a year or two with the program, the students who show special aptitude for research and have become fluent in English are usually offered a scholarship for 15 months of graduate study in the United States. Commonly a grantee enters a university in the U.S. in July, where he takes an easy schedule of courses during summer school and starts the regular course in September leading toward the Master's degree in his field of specialization. If a student is unable to finish the requirements for the Master's in one year, but is doing good work, and is recommended by his major professor, the Foundation will usually extend his fellowship for three or four months. At the end of the 15 to 18 months of study, the men return to Mexico and are commonly employed again by the Office of Special Studies until they can find suitable jobs in Mexico. If, after two or three years, a man continues to show promise and wants to take further graduate work leading to the Ph.D. degree, the Foundation stands ready to provide additional assistance for foreign study.

The process of selecting scholarship recipients only after they have worked with the program in Mexico for one or two years, of sending them to the U.S. for graduate study for a full year or longer, and of again employing them when they return to Mexico until they find suitable jobs in their field of specialization are important aspects of this program. They indicate the care and seriousness with which it is administered. It is clearly aimed at providing Mexico with a corps of well-trained agricultural scientists, and it is accomplishing its major purpose. For instance, a large proportion of the agricultural faculty at the Institute of Technology in Monterrey, one of the best institutions of higher learning in Mexico, are former Rockefeller Foundation fellows. Likewise, several faculty members of the National School of Agriculture at Chapingo, near Mexico City, received fellowships for study in the United States from the Foundation. Most of those who receive fellowships stay in research and teaching, although a few have joined private firms which manufacture and sell agricultural supplies and equipment. There are also a few employed by the national agricultural extension service.

Fifty Mexican agriculturists studied in the United States or Canada on fellowships granted by the Foundation during the period 1945 to 1956. All of these had been carefully selected after they had worked at least one year as research employees of the Office of Special Studies. Several of these men received a second or third grant to continue their graduate studies after having finished the requirements for the Master's degree. In addition to these young men who are in the early stages of their professional careers,

about 40 mature agricultural scientists from Mexico have been awarded short-term grants to travel and study in the United States. The Rockefeller Foundation program is obviously not a large one, but it emphasizes quality and is having a noticeable impact on Mexican agriculture.

UNITED NATIONS SCHOLARSHIPS

The specialized agencies of the United Nations that are engaged in technical assistance work in Mexico often grant scholarships to Mexicans for foreign study. These are usually closely related to some ongoing technical project in which one or more of the UN agencies are participating. Most of them are aimed at providing an expert staff of Mexican technicians to carry forward in some particular line of work after UN assistance has been withdrawn, but some of the agencies also grant scholarships in areas in which they do not as yet have projects. The number of scholarships for foreign study granted by the various UN agencies during 1953, 1954, and 1955 were as follows:

<u>Agency</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>
UN Technical Assistance Administration	18	4	11
International Labor Office	4	1	3
Food and Agriculture Organization	-	-	8
UN Educational, Scientific, and Cultural Organization	2	20	2
Int. Civil Aviation Organization	7	-	-
World Health Organization	<u>8</u>	<u>13</u>	<u>37</u>
TOTAL	39	38	61

From these data it is obvious that the agencies which account for most of the UN scholarships are the United Nations Technical Assistance Administration (UNTAA), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the World Health Organization (WHO). The number and type of scholarships for foreign study which are made available by the UN agencies commonly depend on the status of particular technical assistance projects, because many of the grants for foreign study are for the purpose of giving Mexicans a year of foreign study in preparation for taking over more responsible roles in these projects. Most of the scholarships, therefore, are for carefully-selected mature persons, who have already started their professional careers. In this respect they are somewhat similar to the scholarships granted by the Kellogg and Rockefeller Foundations. Their purposes and objectives, however, are somewhat more variable, and the number of UN scholarships fluctuates widely from year to year.

PERSPECTIVE

The whole phenomenon of Mexicans going abroad to study should be visualized against a background of two other closely related developments. First, there is a great expansion of educational activities in Mexico. It is still true that one-half of the children of school age do not attend school,

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largely because of a shortage of teachers and schoolhouses, but great strides have been made in recent years in improving the educational system of the country. Second, urbanization is moving ahead, and the whole economy is developing at a rapid rate. The search for foreign knowledge is in part a result of these two developments. In turn, the ideas, methods, and techniques from abroad are important stimulants to economic development, and appear to be having some effect on Mexico's educational system, particularly in institutions of higher learning. Knowledge from abroad is entering Mexico through many different channels, but Mexicans who go abroad to study provide one of the most important avenues, and it is safe to predict that in the future there will be an increasing number of Mexicans wanting to study in the United States. Mexico is in a great transitional stage from an agricultural, feudal-like society to a modern, commercial society based on scientific, as distinguished from traditional, knowledge. New ideas are in demand, and though they often run up against walls of social inertia and the accumulated ignorance of many generations, they are having effects in many different facets of Mexican life.

There is no easy way in which to measure or summarize the multiplicity of impacts of this new knowledge from abroad, but it appears evident that ideas and methods of a scientific and technological nature are rapidly being put to use on the Mexican scene. On the other hand, the humanities and the social sciences, except in business and commercial practices, are not receiving as much stimulus from abroad as are the physical and natural sciences and the applied technologies based on them. This is a phenomenon that will bear watching and needs careful study. The danger is that the lack of modern economic, social, and administrative knowledge may become a bottleneck to the efficient functioning of the new industrial and commercial society -- a bottleneck of such importance that productivity will be slowed down while population continues to increase at a rapid rate. One of the most commonly heard complaints in Mexico, for instance, among both foreigners and Mexicans, is to the effect that government administration is bad. Sometimes the bureaucrats are accused of dishonesty, though this charge is much less common than during former administrations. But even the friendliest critics complain of administration being too centralized, of government workers being inefficient in their routine work, and of salary scales being so low that there is little hope for improvement. Although many of the complaints may be the ordinary, healthy criticisms of a free citizenry against some rather vague thing called "the government," it is, nevertheless, symptomatic of a major weakness in Mexican society. Moreover, it is not only public administration which could bear some improvement. Essentially, the same problems exist with respect to private enterprise. One of the noticeable contributions which foreigners and foreign-trained Mexicans make to the development of industry and business is in the field of management and administration. If both public and private administration could be improved, national efficiency could be stepped up. Here is a major area of society which needs new knowledge, and the knowledge that is pertinent to the problem is of a type which stems from the social sciences and the humanities.

Although it is difficult to generalize about the social and economic status of the Mexicans who study in the United States, it is quite clear that they are no longer limited to the sons and daughters of wealthy families. The industry and labor teams, which account for a large proportion of the trainees sent to the United States under the Point IV program, are made up of lower middle-class people, who would probably have no other opportunity for foreign travel. Of the college students chosen by the public and private scholarship agencies, most appear to come from upper middle-class families. They are

representatives of the group which will supply the future scientists and technicians of Mexico -- the trained manpower on which the country must rely for providing the know-how involved in operating the industrial and commercial society which is rapidly developing. Among that large group of students who study in the United States without scholarship assistance are many from families with some special tie to the States. The most obvious of these are the sons and daughters of U.S. citizens who are residing for a few years in Mexico, but who think of the States as their permanent home to which they will some day return. There is another group, however, both from the United States and from Western European countries, who are the "old-timers." They, or their parents, came to Mexico 40, 50, or 60 years ago. They usually have permanent, and often important, business interests here. This is their home. Yet it is quite common for their children to go to the United States, Canada, or England for all, or part, of their education. They usually return to Mexico and enter a profession or business, and many of them represent important connecting links between the two cultures. Somewhat similar to these are the children of families in which one of the parents is a more or less recent arrival from the States while the other is Mexican. Children of these families commonly go to the States for a part of their education. There are, however, families whose lineage is purely Mexican, who send one or two of their children to the United States for schooling in order that they may learn English and become acquainted with the customs and cultures of Mexico's northern neighbor. This practice sometimes stems from the very practical desire to have a son in the family business who knows how to deal with the gringos. In other cases, however, it is a cultural handover from the days when the sons of the elite families studied abroad as a recognized social obligation.

That educational activities are rapidly expanding in Mexico, that Mexican society is becoming more urban and industrial in nature, and that a goodly proportion of Mexicans who go to the United States to study are from the growing middle class suggest that educational institutions in the U.S. may have an expanding opportunity to influence and contribute to Mexico's development. The Mexican scene daily becomes more like that which U.S. colleges and universities are accustomed to serving. Mexicans are increasingly interested in matter-of-fact, empirical, immediately-applicable knowledge. As yet, their own educational system is not emphasizing, to the degree that is common in the United States, the kinds of knowledge and the methods of teaching and experimentation which are most conducive to implementing and undergirding the type of society which they are developing. Of course, there is a tremendous gap, both in terms of cultural values and material achievements, between the United States and Mexico. There will not be easy and direct transfers of much U.S. know-how to the Mexican scene. Important adaptations are often in order. It is probable that one of the major weaknesses in the training which Mexicans now get in the U.S. is lack of guidance toward an understanding of where in the scale of national progress their country now stands, and of what it is that has been learned in the U.S. that can be applied without too much frustration and strain to present-day Mexico. This is a problem meriting the attention of U.S. educational institutions.

James G. Madley