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LATIN-AMERICAN UNIVERSITIES AND SPECIAL SCHOOLS

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,

Washington, D. C., November 8, 1912.

SIR: The relations between the United States and the Latin-American Republics south of us are constantly becoming closer, and the subjects of common interest more numerous. With increase of commercial interests there should come a like increase in intellectual and cultural interests. The value of commercial relations between two countries is not measured in dollars and cents alone. The exchange of ideas, the feeling of interdependence, the sentiments of friendship, fellowship, and brotherhood, and the broader outlook and fuller and richer life which come to the people of both countries are, or should be, no less important than the exchange of the products of mines, fields, forests, and factories and the material wealth gained thereby.

The highest ideals of a country are to be found in its universities and colleges, the home of the best that has come down from the past, the birthplace of the best that is to go forth into the future. Established and controlled by the spirit of conservatism, they are the training ground for the leaders in all lines of future progress. They are the power houses and transferring stations of civilization, in which new currents are generated and older currents and those generated elsewhere are transformed into the voltage required for the new work. Therefore, one learns the heart of a people most easily and most surely through a study of its colleges and universities.

Already young men and young women of the South and Central American Republics are coming to the colleges and universities of this country for work in agriculture, mining, electrical engineering, economics, and such other subjects as they believe they can pursue with advantage here, and for the knowledge of our language, customs, laws, and civilization which they may gain at the same time. One or more bulletins have been issued already by this bureau for the instruction of actual and prospective students of this kind. In like manner American students should attend the colleges and universities of these Republics in such numbers and to such an extent as will make common among our people a knowledge of the manners, cus-

toms, ideals, and the commercial and industrial possibilities of these peoples and countries, and furnish us a supply of men and women of ability and scholarship who are familiar with their language, history, literature, and traditions.

Though the history, traditions, purposes, ideals, and forms of government of our institutions of higher learning differ widely from those of the colleges and universities of these Republics, yet these last have many lessons for us, and we have known and still know all too little of them.

For these reasons I recommend that the accompanying manuscript, which is the result of a prolonged, careful, and intelligent study at first-hand of some of the more important colleges and universities of the Latin-American Republics, be published as a bulletin of this bureau.

Respectfully submitted,

P. P. CLAXTON,
Commissioner.

THE SECRETARY OF THE INTERIOR.

PREFATORY NOTE.

This volume is the result of personal observation and investigation. During the latter part of 1911 and the first part of 1912 I traveled in almost all the countries of Latin America, studying the institutions of higher and special education. I visited practically all the universities and a great many normal, commercial, industrial, and agricultural schools, with the ambition of observing at first-hand their organization, administration, curricula, methods, and physical equipment. In addition to interviews with administrative officers, instructors, and students I gathered all the printed matter available, such as official reports, curricula, laws, and statutes of the institutions, historical notes, university and student publications, and statistical memoranda. Even for institutions not visited I have had access in most cases to original official reports. It would therefore be useless to append a detailed bibliography, since it could only be an enumeration of university annuals and similar publications.

In referring to universities I have consistently designated them by the name of the city in which they are located, although that is not always their official and corporate name. The ecclesiastical foundations of colonial times uniformly bore the name of a saint: San Marcos, at Lima; San Felipe, at Santiago de Chile; San Francisco Xavier, at Sucre, etc. In very few cases have the old names remained. Some institutions have received the name of the country, as the University of Chile; others, the name of the city, as University of Cordoba. In order to avoid confusion and to indicate clearly the location of the institutions I have applied to each the name of the city.

In giving the cost of buildings and apparatus, the salaries of instructors, and in other cases when it is a question of money and prices, the figures uniformly indicate United States currency. It was not always possible to calculate accurately, since rates of exchange have varied in different years. The figures are designed principally for purposes of general comparison, and approximations were deemed sufficient.

The present treatise lays no claim to completeness. It is a general survey of the whole wide subject of higher and special education in Latin America, and is given to the public in the hope of conveying a comprehensive idea of Latin-American educational institutions and of provoking more detailed studies in an interesting field.

LATIN-AMERICAN UNIVERSITIES AND SPECIAL SCHOOLS.

PART I. UNIVERSITIES.

CHAPTER I.

THE FOUNDING OF UNIVERSITIES.

The Spanish settlements in America were provided with the means of higher education with celerity equal to if not greater than that shown in the English colonies. In less than a half century from the date of the first permanent settlement, schools for advanced education, as education was then regarded, had been established in due and permanent form, and by the end of the century there existed a chain of colleges or universities extending from Mexico and the West Indies to the southernmost colony of Argentina. From that time to the present, Spanish-America has been zealous in the establishment of institutions for training in the liberal professions, and during the past century Portuguese-America has kept pace with her neighbor. A brief survey of the circumstances under which the institutions were established is necessary to an appreciative understanding of their present status, methods, and accomplishments, since the motives for their foundation were as different as the eras that marked their birth.

The first universities.—As regards their foundation Latin-American universities fall naturally into three groups. The first comprises the colonial establishments. It is not easy to determine accurately the date of the old universities. Three events were all important in the early history of each institution, namely, the sanction of the church, the royal charter, and the actual inauguration of academic studies; the date of any one of these may be cited as the initial date of the institution. It is not surprising, therefore, that conflicting statements are found in authorities of equal value. The question is of little importance after all to the general student, since the variations are insignificant, and the date of the colonial universities may be stated approximately as follows: Mexico and Lima, 1551; Santo Domingo, 1558; Bogotá, 1572; Cordoba, 1613; Sucre, 1623; Guatemala, about 1675; Cuzco, 1692; Caracas, 1721; Santiago de Chile, 1738; Habana, 1762; Quito, 1787.

It is needless to look for individuality in these institutions. All owe their origin to the same influence, and their organization was essentially uniform. The church was the prime mover in their establishment, although influential laymen holding high political positions contributed notably to their foundation. The principal object of each university was to promote the cause of religion in the colonies by providing an educated clergy numerous enough to care for the spiritual welfare of the settlers and to further the work of evangelization among the natives. The central department of the institution was the faculty of letters and philosophy, through which all students must pass on their way to the professional schools. The latter were exceedingly limited in the colonial university. There was a department of civil and canon law, but the former was overshadowed in the ecclesiastical organization of the institution, and had to await the era of national independence before coming to its own. The university usually contained a professorship of medicine, but prior to the nineteenth century it was the medicine of the medieval school men, academic and empirical. The one professional school that flourished was the faculty of theology. It was for it that the university was created, and to it led all academic avenues.

Clerical in its origin and purpose, the colonial university was also clerical in its government. Theoretically the corporation enjoyed large autonomy, since it formulated its rules and regulations, chose its officers, and selected professors for vacant chairs. But this autonomy was largely illusory. The professors were almost exclusively members of the priesthood, and as such owed implicit obedience to the bishop, and, in addition, the election of officers and new professors required the confirmation of the prelate. University autonomy was, therefore, carefully circumscribed by church prerogative, and this equivocal form of government has been transmitted with little change to modern times, except that the State has taken the place of the church. Several universities of the colonial era owe their foundation to one or another of the great religious orders. In these cases the order equipped, manned, and directed the school, subject, of course, to papal authority and to the immediate oversight of the bishop.

The second group.—A second group of institutions of higher education sprang into existence in the era of national independence. After several abortive attempts extending over a period of 20 years, the University of Buenos Aires was definitely organized in 1821 by the consolidation of existing academies of law and medicine, and the erection of other faculties. In Peru the University of Trujillo was chartered in 1824, although not opened until 1831, and the University of Arequipa was founded in 1835. An institution was established at Medellin, in Colombia, in 1822. The famous Restrepo had conducted

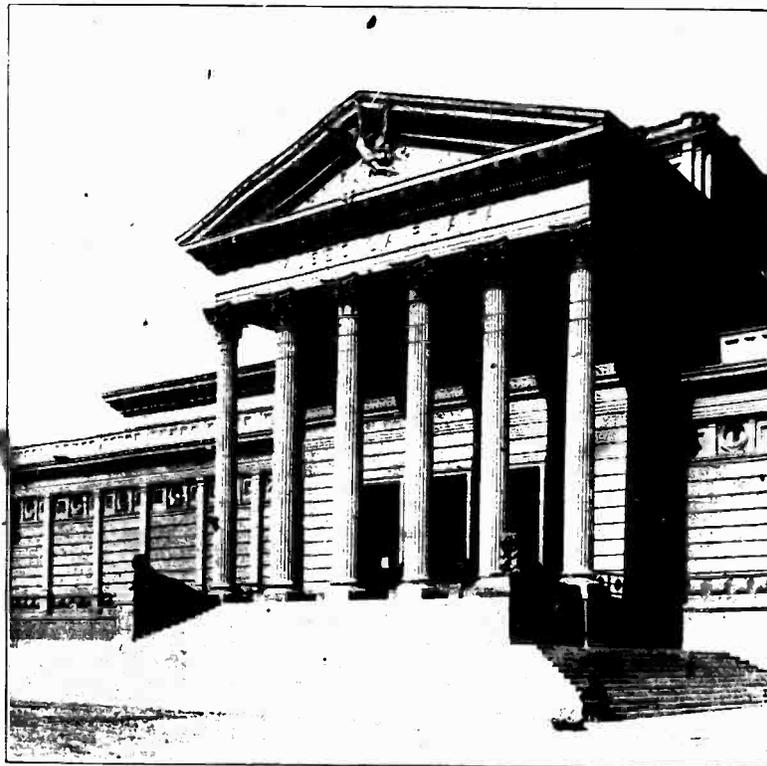
classes in philosophy there as early as 1814. Even after its formal organization the school was conducted under several different names, and it was not until much later that it assumed the title of university. None of these institutions, with the exception of Buenos Aires, had at their inception or have ever attained a full complement of faculties. At the present time Arequipa maintains departments of letters, sciences, and jurisprudence; Trujillo, letters and jurisprudence; Médellin, medicine and jurisprudence. In Brazil the university form of organization did not find favor. Professional schools were established, each independently of the other. Schools of medicine were founded at Rio de Janeiro and Bahia in 1808, and law schools at Sao Paulo and Recife (formerly Pernambuco) in 1827. The failure to establish professional or other schools of higher learning in Brazil during the colonial epoch is perhaps due to closer and easier communication with the mother country than existed between Spain and her continental American possessions.

Development of legal studies.—In the university establishments of the second period the church had no part, at least not as an organization. It was to secular influence that the universities and professional schools of the early part of the nineteenth century owe their existence, and from the first they have depended upon civil authority, either local or national. In this same period the old universities were taken over more or less completely by the state, and in many added importance was at once given to the subjects of medicine and civil law. By their break with the mother country the Spanish States were thrown upon their own resources in matters educational. The continuous stream of governors, judges, administrators, and physicians that had flowed for three centuries from the metropolis into the colonies was suddenly arrested. The supply must hereafter come from native sources. Moreover, in the flush of newborn independence there was engendered an intense feeling of local pride and a determination to become self-sufficient in culture as well as in politics. The rapid extension of law schools, the increased importance ascribed to this branch of study in the older universities, and the dominant position it has ever since held in the Spanish-American university, is in great measure the result of influence that gathered and pressed upon the public consciousness in those early years of national independence. Society was to be reconstituted, a new government to be organized, colonial thralldom to be replaced by civil and political liberty. What nobler mission for the sons of a new commonwealth than to prepare themselves by a study of jurisprudence and political sciences for their country's service! While ancient principles of law still subsisted and court procedure remained much the same, new codes were made in the several States and republican ideals were substituted for monarchical traditions.

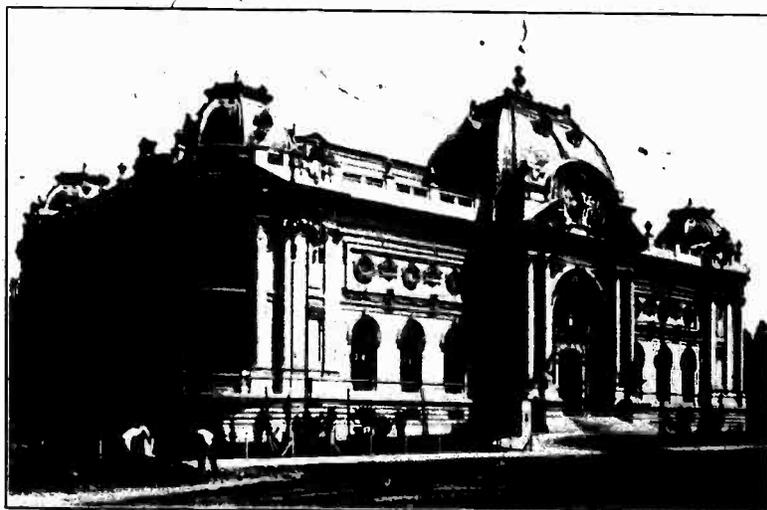
It was absolutely necessary for the young Republics to train their lawgivers, jurists, and public officials in the atmosphere of democratic institutions. National self-preservation demanded national schools of jurisprudence. Consequently, in the old universities, as well as in the newly created ones, the faculty of law and political sciences assumed such importance that it soon overshadowed the other faculties and came to be considered by far the most important department of higher education.

Medical studies.—The definitive organization of the medical faculty as a distinct department of the university dates also from the same period as that of law. It has been stated that the schools of Rio de Janeiro and Bahia were founded in 1808. The medical faculty of Guatemala places its beginning in the year 1804, Lima considers 1811 the date of its final organization, and Caracas counts from the revised statutes of the university in 1826. In Buenos Aires a school of medicine was founded in 1801 and enlarged in 1813. In 1821 it amalgamated with the new university. Political independence did not have the same overwhelming influence on medical studies that it did on the study of law, but separation from the mother country could not fail to encourage the development of local institutions in a subject so important as that of medicine.

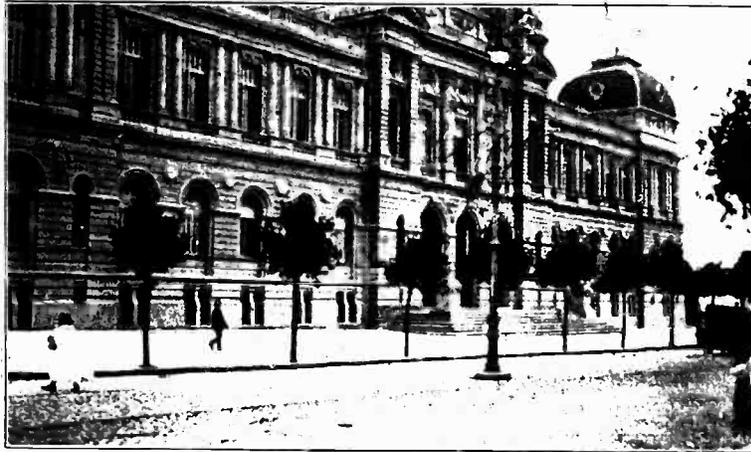
The sciences.—At about the same period the department of mathematics, including physics and astronomy, was introduced into several universities. At first the department consisted of a single professorship, but with the advance of scientific study it developed into the *facultad de ciencias exactas*, embracing all physico-mathematical sciences. When it exists as an independent institution it is commonly called the polytechnic school, or the school of engineering. This latter appellation is often used even when it forms a part of the university, to the disregard of the official nomenclature *facultad de ciencias exactas*. The origin of this faculty owes nothing to political or national development, but is rather to be traced to the academic influence of the Encyclopédistes of France, who urged the importance of mathematical and scientific studies, and whose ideas were in great part incorporated into the French system of education under the First Republic, to be imitated later in the Spanish republics of America. In fact, it may be affirmed that the dominant influence in the educational life of Latin-American countries since their emancipation, as well as in their social and political life, has been French and not Spanish. The continuance of the monarchy and monarchical ideas in Spain, added to the animosities remaining from the war of independence, have kept the Spanish-American republics estranged from the mother country, while the advance of democratic ideas in France has appealed strongly to the New World democracies and led to a close imitation of the French in all social activities.



A. MUSEUM, LA PLATA, ARGENTINA.



B. NEW PALACE OF FINE ARTS, SANTIAGO, CHILE.



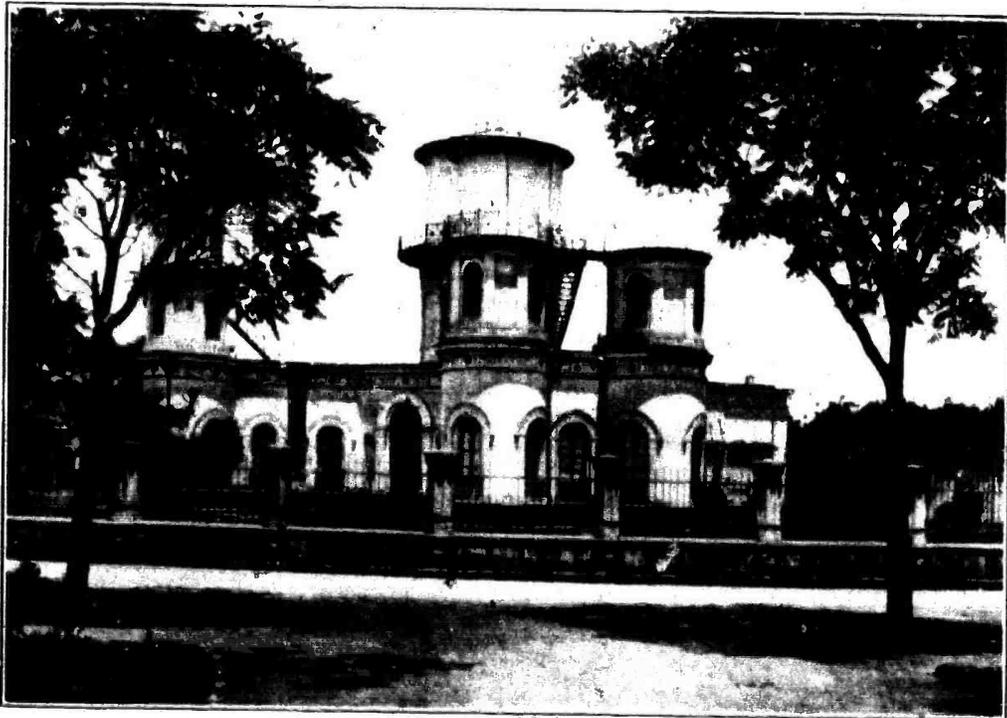
J. PRINCIPAL FAÇADE OF THE NEW UNIVERSITY BUILDING AT MONTEVIDEO.



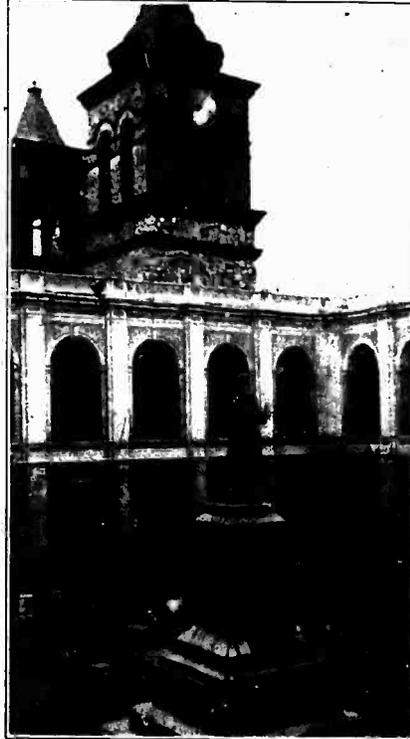
K. UNIVERSITY OF CHILE, SANTIAGO.



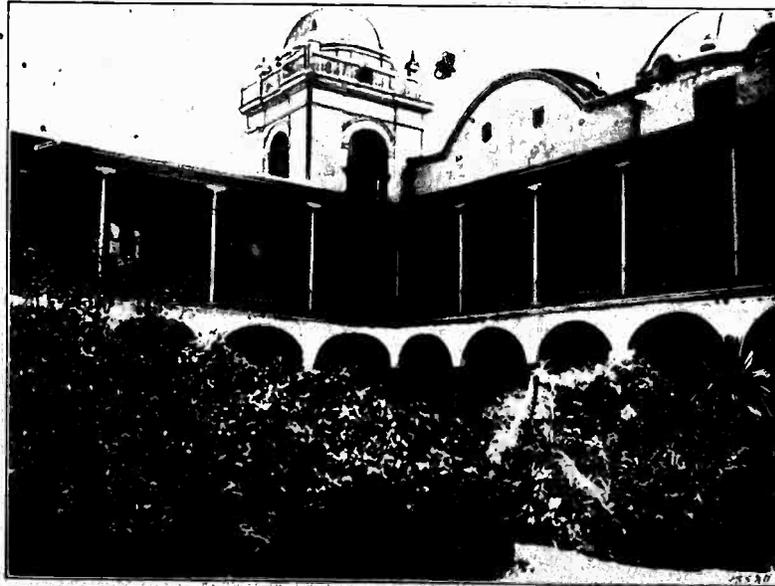
A. PATIO IN THE UNIVERSITY OF CARACAS, VENEZUELA.



B. OBSERVATORY IN THE ALAMEDA, QUITO, ECUADOR.



A. UNIVERSITY OF CORDOBA, ARGENTINA.



B. PATIO OF SAN MARGOS UNIVERSITY, LIMA, PERU.

The third group.—Institutions of higher education which have been founded in recent times in Latin America owe their existence to a variety of circumstances and motives. The University of Montevideo, beginning with a law school in 1849, marks the final crystallization of Uruguayan nationality, and should perhaps be classed with the second group, although founded much later. A movement looking to the establishment of a university in Uruguay was started as early as 1830, and the institution was almost a fact in 1836, when internal dissensions caused the postponement of the project. The university contained no other faculty than that of law until 1876. In this year a school of medicine was organized, and in the following decade a school of engineering.

The proclamation of the Republic in Brazil in 1889, and the subsequent federation of its component States, have slowly wrought a change in the status of higher education in that country. The States are almost wholly autonomous. The federation is looser even than that of the United States of America. In matters of education the National Government is theoretically responsible only in the Federal District. Elsewhere public instruction is a prerogative of the respective States. It is true that the four so-called national schools of law and medicine have remained under the jurisdiction of the central Government and continued to receive their financial support from the national treasury, but this anomalous situation will be corrected by recent legislation. State autonomy, coupled with the rapid growth in wealth and population of many parts of Brazil, has made the principal State capitals centers of much more importance than they were in the days of the empire. Educational progress has followed material advance, and groups of professional schools have grown up in Bahia, Bello Horizonte, Sao Paulo, Recife, and Porto Alegre. Up to the present time there have been no universities in Brazil, the professional schools having remained independent faculties, but the new educational law enacted in 1911 favors the university form of organization, and it is possible that in each educational center the various faculties may soon consolidate.

Professional faculties in Brazil.—An enumeration of the professional schools organized in Brazil during the past two decades gives some idea of the interest shown in this form of higher education and the distribution of the different schools. A medical school (the third in the Republic), including departments of pharmacy and dentistry, was founded at Porto Alegre in 1899. A school of pharmacy has long been a regular adjunct of a faculty of medicine, and a dental school has lately been created in each of the old medical faculties of Rio de Janeiro and Bahia. Additional schools of pharmacy have been established at Belem (Para), Ouro Preto, Juiz de Fora, and Sao Paulo. The latter contains also a section of den-

tistry and is on the point of expanding into a complete school of medicine.

Law schools were founded at Rio de Janeiro in 1882 and 1891, at Bahia in 1890, at Bello Horizonte in 1892, and Porto Alegre in 1900.

The first scientific school of Brazil was founded at Rio de Janeiro as early as 1810, but for several decades it was a military engineering school only. After passing through several metamorphoses it finally acquired, in 1868, its present organization and the name of Escola Polytechnica. Several other engineering schools have recently been established—Recife, 1892; Sao Paulo, 1894; Porto Alegre, 1894; and Bahia, 1896. All have followed in name and organization the model of the one at the national capital.

Other foundations.—The foundation of such universities as that of Santa Fé, in Argentina, in 1890; of Guayaquil and Cuenca, in Ecuador; and of Los Andes, at Merida, in Venezuela, are due to local pride and ambition, coupled with difficulties of communication with older university centers. This latter consideration has led to the establishment of many independent faculties in Bolivia, where there are schools of law at La Paz, Cochabamba, and Potosi, and a medical faculty at La Paz, in addition to faculties of law, medicine, and theology at Sucre, the old capital. The latter in colonial times were combined, forming the old historic Universidad Mayor de Francisco Xavier, but are now independent schools.

Panama has not as yet established any school of university grade, but all the Republics of Central America possess colleges of law (in Nicaragua there are no less than three) and all except Costa Rica maintain medical schools. These institutions are of comparatively recent foundation except those of Guatemala, the old official metropolis of Central America under the colonial régime. They owe their origin to the dissolution of the Central American Confederation about the middle of the nineteenth century and the subsequent development of local nationalities.

Reasons for multiplication of universities.—There is an unmistakable tendency in Latin America to increase the number of higher educational institutions, although conditions economic and otherwise do not always warrant the new foundations. New centers of population are zealous to complete their attractiveness by adding a university to their civic advantages. Regional jealousies and local politics contribute also to strengthen the movement. As indicated in a preceding paragraph, the natural barriers that divide many South American countries into distinct regions and the very great difficulties of travel and communication between the capital and the Provinces have sometimes led to the establishment of minor universities when the total university population and the financial condi-

tions of the country were inadequate to support more than one. The provincial universities of Cuzco, Arequipa, and Trujillo, in Peru; of Guayaquil, Cuenca, and the law school of Loja, in Ecuador; the two faculties of medicine and the half dozen faculties of law in Bolivia; the minor universities of Merida in Venezuela and Cartagena, Popayan, Medellin, and Pasto in Colombia, all owe their existence to the broken topography of the country as much as to local ambitions. The support of these provincial universities is a severe burden on the national treasury and presents disadvantages of an educational order, but the regions they serve are remote from the chief university center of their respective countries and their suppression would entail great hardship on the youth that frequent them. In many cases it would be a national misfortune. Bolivia has struggled with the problem, but to no avail. Professional schools have increased in number instead of diminishing. In her difficulties Bolivia has pointed with envy to Chile with her one central State university, unmindful that the latter country is beginning to feel the same influences and there is probability of the creation of two other institutions. Recent ministers of public instruction in Ecuador have inveighed against the plurality of universities, pointing out that for each student enrolled the nation expends annually \$350. The Andean Ranges that divide the country form an insurmountable argument in support of the existing system.

Another reason that operates for the establishment of provincial universities would be devoid of weight in the United States. In Spanish America a national capital exerts an indescribable attraction on the cultured and educated classes. Professional men prefer to live poorly, if necessary, in this center of social refinement rather than to enjoy opulence in a provincial town. Lawyers, doctors, and others whom a State has educated at great cost abound in the capital, while the countryside lacks necessary professional service. The young men who go from the smaller towns feel the lure of the capital with its large university so strongly that after graduation they remain there. The Provinces lack educated leaders and trained public servants. This is the reason ascribed for the foundation of the law school of Santa Fé, in Argentina, which has recently added other departments of instruction and promises soon to become a complete university. Neither great distance nor difficulty of travel separates it from the National University of Buenos Aires on the south or Cordoba on the west. In Chile this same reason, coupled with local city pride and the fear that the church might preempt a promising field to the exclusion of the state, has caused the foundation of schools of law at Valparaiso and Concepcion. The prediction is freely made that the latter will develop very shortly into a full-fledged university. In view of the relatively large university

population in Chile and the intelligent interest shown in education, there would be more reason for this additional institution than for some that now exist in other South American countries.

The situation in Central America is unfortunate. No one of the five small Republics is populous enough or rich enough to maintain a complete first-class university. A solution of the problem of higher education there might be found in the reestablishment of the old federation and the exercise of the policy of distributing the various branches of the Federal Government among the States in order to allay local jealousies, as has recently been done so successfully in British South Africa.

University of La Plata.—This university, but recently established, is unique both in spirit and in organization. The story of its foundation and an account of its policies and methods can be given only in outline, but deserve larger space.

In 1882 the Province of Buenos Aires transferred the seat of the provincial government from the city of Buenos Aires to the town of La Plata, distant an hour's ride by rail from the Federal capital. Local pride was stirred to the highest pitch of enthusiasm. The new city was to rival in beauty and in importance the national metropolis. A pretentious street plan was evolved, parks were established, boulevards stretched away in magnificent distances. The provincial government constructed fine public buildings, paved the streets, and provided modern systems of water, electricity, and sewerage. The town grew rapidly, but the lure of the great Federal capital only 30 miles away was very great, and in order to retain educated public servants and enhance the attractiveness of the new metropolis, there was established in 1897 a provincial university, embracing the faculties of law and social sciences, of physics, mathematics, and astronomy, of agronomy and veterinary medicine, and of chemistry and pharmacy. To which was added in 1900 a faculty of medicine. A practical agricultural and veterinary school was also affiliated with the university, while an extensive astronomical and meteorological station, and a splendid museum of ethnology and natural history completed the educational equipment.

This organization continued for eight or nine years. The number of students was always small. There could be but little academic spirit. The element of vigorous emulation was wanting. The Province lost its first enthusiasm for the educational enterprise, and as the institution was simply a miniature copy of the great university of Buenos Aires, there was no real need for its existence. As early as 1902 the Province began to relinquish its responsibility in favor of the National Government. At this juncture a band of Argentine educators, imbued with the spirit of pure scholarship, conceived the idea of converting the institution into a university more nearly approaching

the European and North American types. Through their influence the Province was induced to transfer the university with all its buildings, grounds, equipment, and endowment to the National Government. In 1905 the institution became the "Universidad Nacional de la Plata" and started out on a new career, under a very different organization and with changed policies. The school of medicine was wisely abandoned. The proximity to the University of Buenos Aires rendered futile the continuance of a professional school which required extensive laboratories, large chemical facilities, and great hospitals. The school of law was incorporated into the broader faculty of social and juridical sciences, in which law is but one section running parallel with a teachers' college and a college of philosophy and arts, while above the three sections is an advanced course leading to the degree of doctor. The engineering school is organized on a different plan from that usually followed in South America, and scientific study occupies a large place. The natural sciences, so called (chemistry, botany, zoology, geography, etc.), are grouped in one faculty that offers courses varying in length from three to five years, and the physical, mathematical, and astronomical sciences comprise another faculty with several lines of study ranging from two to six years in length. The school of natural sciences prepares pharmacists and professors of the respective sciences; the school of physical sciences prepares civil, electrical, mechanical, and architectural engineers, and professors of mathematics and physics. The pedagogical character of the university is very marked. Its avowed policy is to train scientists, scholars, and teachers, rather than lawyers, pharmacists, and engineers. Its aim is scholarly—not professional, and its organization is planned to produce this result. In the traditional university of Spanish America social sciences are studied only in the law school with the view of their application to jurisprudence; natural sciences are pursued only in the medical school for their bearing on medicine; and physico-mathematical sciences are found only in the engineering school. In the various faculties the tendency is to put the application of the science above the science itself. In La Plata the policy is exactly the opposite: the subject comes first, and, above all, scientific method is insisted upon whether the studies are natural, physical, social, or juridical sciences.

The institutions of higher learning in Latin America can therefore be classed historically as colonial and clerical, national and provincial. Every effort to understand their organization and spirit must start with the colonial type, since the national universities were originally but a secularized form of the old institutions. It is true that the emphasis was shifted from philosophy, letters, and theology to jurisprudence and later to medicine and science, but the organization remained much the same, while methods of instruction and the aca-

democratic spirit evolved but slowly. The same type of organization and the same ideals have passed into the provincial universities, so that these are only miniature copies of the larger educational centers. This does not imply that educational ideals have remained stationary since colonial times. It means simply that evolution has been gradual, that much of the old is still evident in the institutions of to-day, and that the present conditions, methods, and ideals can be understood and explained only by an acquaintance with the former types. In the University of La Plata only has tradition been disregarded, but even here it has unconsciously molded many policies.

CHAPTER II.

STUDENTS, STUDIES, AND DEGREES.

Enrollment.—The rapidly increasing enrollment in institutions of higher learning is a phenomenon as striking in several countries of Latin America as it is in the United States. The only difference is that in the latter country the faculty of letters, philosophy, and pure sciences shares in the increase, while in the former the drift is wholly toward the professional faculties. Chile, with a population of only 3,000,000, enrolls annually almost 2,000 students in the national university and upward of 700 in the Catholic University, a gain of 50 per cent in a decade. Argentina, with a population of 7,500,000, enrolls in her four universities 7,000 students, of whom about 5,000 are matriculated in the University of Buenos Aires alone. A quarter of a century ago the total university population was less than 800 and the enrollment at Buenos Aires 600. At Lima there are 1,100 students in the university and in the detached schools of engineering and agriculture, while the three provincial universities of Peru add about 400 more. In Brazil the number of law and medical students is disproportionately large, and the Government is seeking some practicable method of checking the constant increase. In the four greatest faculties of law (Sao Paulo, Recife, and the two at Rio de Janeiro) the annual matriculation approaches 3,000. The two national faculties of medicine (Rio de Janeiro and Bahia) enrolled last year 2,245 students in medicine, 461 in pharmacy, and 423 in dentistry. The lesser schools of law and medicine, located in the smaller centers and patronized by the States in which they are situated, will increase very considerably the number of students. Complete statistics to date are not available, but it is probable that in the entire Republic of Brazil there are no less than 4,000 students of law, and an even greater number in the schools of medicine, pharmacy, and dentistry. Other Latin-American nations in proportion to their population show a large student enrollment, and the number is everywhere a surprise when one considers the economic, social, and racial disadvantages under which some countries labor. It must be remembered, too, that the figures include only students of real university rank, since admission to the university or to the independent professional faculty is invariably based on the completion of the

secondary school curriculum. In fact the liceo diploma is not always sufficient in itself; some universities insist on their own examination in addition, not for the purpose of requiring more than the secondary school offers, but merely to insure that the preparation satisfies the university standard.

Secondary schools.—Secondary education in Latin America usually covers six years and is based on an elementary school course of equal length. In a few countries the elementary course extends over seven years, and in some the secondary school is reduced to five. The two school periods never exceed 12 years, and in some nations comprise but 11. It is not the province of this work to treat of secondary schools, but in order to define somewhat the university entrance requirements it may be said that the Latin-American high school offers less in mathematics and considerably less in laboratory science than the corresponding institution in North America, but, on the other hand, it regularly includes such subjects as psychology, logic, political economy, and philosophy. In very few countries are the ancient classics taught, but everywhere much importance is given to modern languages, and at least two are included in every high-school course that leads to the university. The secondary school curriculum is therefore comprehensive, and the student should enter the university possessing a reasonably broad mental vision. The age of the liceo graduate is about the same as that of the American boy when he finishes the high school. The Latin American is perhaps superior in breadth of vision, cosmopolitan sympathy, power of expression, and argumentative ability, but, on the other hand, perhaps inferior in the powers of analysis and initiative and in the spirit of self-reliance.

The university faculties.—The full complement of faculties in a Spanish-American university comprises letters and philosophy, theology, law, medicine, and science or engineering, to which is sometimes added agriculture. However, in many institutions the faculty of letters and philosophy has ceased to exist; in others it is, in reality, a higher normal college, as in Chile and Argentina. In Peru, although still of full university rank, this faculty has become to a considerable extent a special preparatory course for students of law, who are required to complete two years of work in the faculty of letters before they enter upon their legal studies. Generally, therefore, the Spanish-American university contains only professional schools. Of these theology, the first and most important in the old universities, has been almost everywhere eliminated. With the passing of the universities in the nineteenth century from the control of the church to that of the state, and with the ever-growing sentiment among the ruling classes in favor of complete separation of church and state, the faculty of theology in national universities no

longer offered sufficient guaranties for the orthodox instruction of the clergy. In its place, bishops founded diocesan seminaries for the training of priests, and the archbishop established a *gran seminario* for advanced study. The faculties were then left without students. Most universities retain, however, the empty name. Some note that the studies in this faculty are done in the archbishop's seminary and in States where the relations between church and state are still cordial, students from the seminary occasionally present themselves before the university faculty to receive the degree of doctor of divinity, but more often they go, or are sent by the prelate, to Rome to complete their theological studies and to receive there the final academic sanction. Taking into account these deductions, it will be observed that the university of to-day usually comprises in reality only the schools of law, medicine, and engineering. In many countries the department of agriculture is an entirely separate institution, but always of university rank.

Degrees and examinations.—The student is usually a bachelor of letters or science when he enters the professional school, since in Latin America these degrees represent the completion of secondary studies as they do in France and some other European countries. In many law faculties there is an intermediate degree of bachelor of laws, which may be obtained after about three years of study. It is a purely academic distinction, as it does not mark the end of legal studies and does not confer the privilege of practicing the profession. It is a traditional custom and is universally recognized as superfluous.

The final university degree in each faculty is that of doctor; Chile alone confers no doctorate or similar title of distinction, but grants a simple certificate of graduation with the corresponding professional title of *medico*, *abogado*, etc. In common usage, however, a physician in Chile is spoken of, and so, as *doctor*. In Central America the title of a law graduate is not *doctor*, but *licenciado*, following the old Spanish nomenclature, and despite the awkward length of the appellation, its use is required in formal address and in print.

The right to practice a profession is conferred by the university or professional faculty. The graduate may have some additional forms to observe, but they are only forms and imply no further examination. This usage, which differs from that of the United States, arises from the fact that in the latter country the university is merely a corporation chartered by the State for the purpose of instruction. In Latin America it is a part of the civil administration, and is empowered not only to instruct, but also to license professional men.

In countries where the doctorate is conferred in law and scientific faculties, it is not always synonymous with the professional title. The latter is *abogado*, *ingeniero*, *arquitecto*, or *agronomo*, while the doctorate of laws or sciences is conferred as the result of a second ex-

amination presupposing advanced and additional studies. In the law school, however, the student usually strives to become a *doctor* and can often win this degree in the same time that is allotted for the acquisition of the professional title. The University of La Plata is battling against this tendency in Argentina by compressing the regular law course into four years (instead of five or six years, as usually required) and demanding two additional years of strictly postgraduate studies for the doctorate.

The departments of pharmacy and dentistry everywhere grant only the professional titles of pharmacist (*farmaceutico*) and dentist (*dentista*).

In all departments of the university the degree or professional title is conferred only after an oral, public examination before a committee of the faculty, usually presided over by the dean, but in the smaller institutions by the rector. The examination may cover the entire range of studies pursued by the student in the department. A printed thesis is also required for the doctorate and usually for the lesser degrees and professional titles. Often the examination consists chiefly in the defense of the thesis. These examinations and degree-conferring practices have been inherited from Europe and have undergone little or no change for centuries. Although the final examination is comprehensive and may cover the entire range of studies, oral examinations are held at the end of each year in each subject, and a student can not proceed to a higher class unless he passes the examinations of the year. The year-end examinations are also held before a committee of the faculty. A student is passed (*aprobado*), conditioned (*desaprobado*), or failed entirely (*reprobado*). A conditional student is given the opportunity of taking another examination before the opening of the succeeding year. No tests are given during the year. Written examinations are not in favor. Occasionally they have been tried, but always abandoned. The oral examination conducted by a *jury* composed of at least three members of the faculty is the only form that satisfies students, professors, and parents.

Academic honors.—The title of doctor, little matter in what department it is earned, is highly esteemed in Latin America. Its possession confers social distinctions and, if it be in law, a decided political prestige. It was for this reason and in the hope of promoting democratic ideals that Chile abolished university degrees altogether. Notwithstanding this action, the prestige of a university education abides there as elsewhere. Sons of upper-class families are expected to study medicine or law whether they intend to practice the profession or not. In fact, a very large proportion do not, and either remain landed proprietors or devote themselves to some form of public life, politics, diplomacy, or journalism. The faculties of engineering and

agriculture do not receive the same uniform aristocratic patronage, and their degrees are considered less ornamental and more utilitarian.

Methods.—In all the faculties the lecture method is used almost exclusively, even in the first years, and there is no control of the student's application to study save the year-end examination. There are no quizzes, no mid-term tests, and promotion depends entirely on the oral examination. Even attendance at lectures is largely a matter of option. It is true that the university prescribes that a student absent from a certain proportion of lectures or laboratory exercises can not come up for examination at the end of the year, but as "reasonable excuses" for absence are admitted the rule becomes exceedingly flexible.

CHAPTER III.

UNIVERSITY ORGANIZATION.

In its internal organization and administration the Latin-American university has adhered closely to the traditional system adopted in the first ecclesiastical universities and copied by them from southern Europe. Within certain bounds it is autonomous, making its own internal regulations, defining the details of its work, and fixing its own requirements, providing they do not conflict with the national school laws. Every educational institution, whether university, normal school, or other special institution, has two sets of regulations. The one is general, defining the form of its organization, duties of its officers, scope of its work, and general scholastic requirements. This code is formed and promulgated by the executive authority of the State. The other set of regulations is for the internal government of the institution and is drafted by the institution itself. It must be in harmony with the State regulations, but can take into consideration local conditions. There is no intermediary between State and university, no board of trustees, curators, or regents. Officials and professors receive their commission directly from the chief executive, through the minister of public instruction. The rector, vice rector, secretary, and treasurer are either appointed by the Government, or, if elected within the university, the choice must be confirmed by the President of the Republic. Their terms of office are short; in some institutions they may be reelected or reappointed indefinitely, but more often the offices rotate among the professors. The internal government of the institution is vested in a council composed of two or three members from each faculty and presided over by the rector. The council is formed sometimes by election, sometimes by governmental appointment. Each faculty has also its council, presided over by the dean. In general it may be said that the smaller the State and the institution the closer the governmental control; in the larger universities it tends to become a matter of form. In spite of the direct and intimate dependence of the university upon the State, very rarely does political domination interfere with the legitimate functions of instruction.

Professors and tenure of office.—The final, formal appointment of professors is made in much the same way as that of the officers, viz,

election within the university itself and confirmation by the State. A common method is for the faculty to nominate through the rector to the minister of public instruction three eligible candidates. Sometimes the faculty has the right to indicate its preference. Once appointed, the professor is not removable except for neglect of duty or misconduct duly proved. The chair is spoken of as the property of the professor (*propriedad del catedrático*), a phraseology which has descended from an epoch when only few professorships were filled for life, the others being thrown open every few years and refilled after a competitive examination (*oposición*). In those days life tenure was an unusual honor, and a professorship *en propiedad* was a distinction. The distinction no longer exists, but the honorary phraseology remains. In many States of Latin America the tenure of the teacher's office is rigorously guarded, sometimes even to the extent of producing ridiculous situations. It is told that in one case a professor was duly appointed to teach a certain branch in a designated institution. Later the subject was discontinued in that school and the Government proposed to transfer the teacher to another where the subject was retained. He refused to be transferred, alleging that his appointment was for the designated school only; he appealed to the courts, the appeal was sustained, and the teacher has since spent his time pleasantly in Europe, while continuing to draw his stipulated salary.

Teaching hours per week.—In order to appreciate the position and duties of a Latin-American university professor, as well as the manner of his selection, some explanations are necessary, since in all these matters there is wide divergence from North American practices. First of all, it must be noted that in Spanish America a professorship is limited not merely to a single subject, but to *one single general course* continued throughout the year. If a subject runs through two or more years, each year constitutes a separate professorship and is usually taught by a different instructor. In some universities a class meets every day; in others, but three times a week. A professor's hours therefore are at the most six per week, more often but three. In the case of foreign professors "contracted for" abroad, and also for certain special professorships, especially in medical schools, the hours per week devoted to instruction exceed the maximum given above, but the statement in its generality is nevertheless correct. In those institutions where the three-hour course is in vogue, a professor may occupy two chairs, but this is unusual. So strong is the tradition in favor of single chairs that often the limitation has passed into legal statute.

No teaching profession.—The next consideration to be noted is that teaching in the universities is not a distinct profession. This may be the cause or the result of the regulation forbidding plurality of

chairs. In either case the condition remains to the serious detriment of higher education. Teaching but three, or exceptionally six hours, per week the professor's stipend is naturally too small to constitute a livelihood. There are, therefore, no professors, not even the officers of the institution, who devote their entire thought and activity to teaching. In the law faculty the teachers are practicing attorneys, judges, editors, or Government administrative officers; in the medical faculty they are practicing physicians, pharmacists, dentists, and amateur scientists; in the engineering school, practicing engineers, pharmacists, architects, and surveyors; in the faculty of letters and philosophy (where this faculty remains), lawyers, editors, and publicists. Where the faculty of science exists apart from the engineering school, the natural science chairs are occupied by pharmacists, the biological by physicians, and the mathematical by engineers. Arguments can be adduced in favor of filling some chairs in professional schools with men who are also engaged in the active practice of their profession, but the universal custom as followed in Latin America presents serious disadvantages. It is perhaps less fruitful of evil in the law school than elsewhere, and as this was the first of the modern secular faculties to be developed, and the real nucleus of the university, the custom of to-day is perhaps but the extension to other schools of a practice which, although pernicious in its present general application, was not wholly inappropriate in its original form. What is still more disastrous at present, and contrary to the basic principles of pedagogy, is the extension of the practice to the secondary school, as is the case in most countries. Here, too, the subjects are subdivided into many chairs, and the professors are drawn, according to the nature of the chair, from the various professions. They may and usually do know their subject, but as teaching is not their profession few make any effort to learn how to teach. The lamentable result is that pupils receive instruction in a form that frequently defies assimilation, and which fails to become education in the best sense of the term.

Duties of a professor.—The limited duties and responsibilities of a professor, compared with those of his North American colleague, are a natural corollary to his divided interests. He reports in the secretary's office before the daily or triweekly lecture and signs the roll as proof of attendance. The lecture given, he returns to his office and resumes the practice of his profession. He conducts no quizzes, gives no tests during the year, and consequently has no examination papers to engage his attention. At the end of the scholastic year he does duty on the oral examination commissions, and at times throughout the year he may be drafted for service at special examinations. In both instances responsibility is shared with two colleagues. Unless he is a member of the council in his faculty

or of the central university council, he has nothing to do with the administration of the institution, and even service on the councils is not onerous. The hour with the class is in no sense a recitation; the professor simply lectures, and beyond this he assumes no responsibility for the progress or application of his students. Repeating as he does year after year the same course, the professor has every temptation to stereotype his matter and even the form of its presentation. The system instead of producing specialists, which is the reason urged in its behalf, seems to tend rather to fossilize both the subject and the instructor. If the subject includes laboratory exercises, these are supervised by a laboratory director. The time, thought, and attention that the professor gives to the university and its work is therefore limited, and necessarily so, since the university claims little and pays accordingly.

Professional prestige.—On the other hand, the position confers a distinct honor on the holder, gives him prestige in his profession, and puts him before the public in a favorable light. It is a known stepping-stone to political preferment. For these reasons it is often possible to fill the professorial chairs with distinguished men from the very best families of the nation, who, if they are not primarily educators, yet possess a reputation for scholarship and general ability, and a prestige that dignifies the lecture-room and commands the respect and often the admiration of the students.

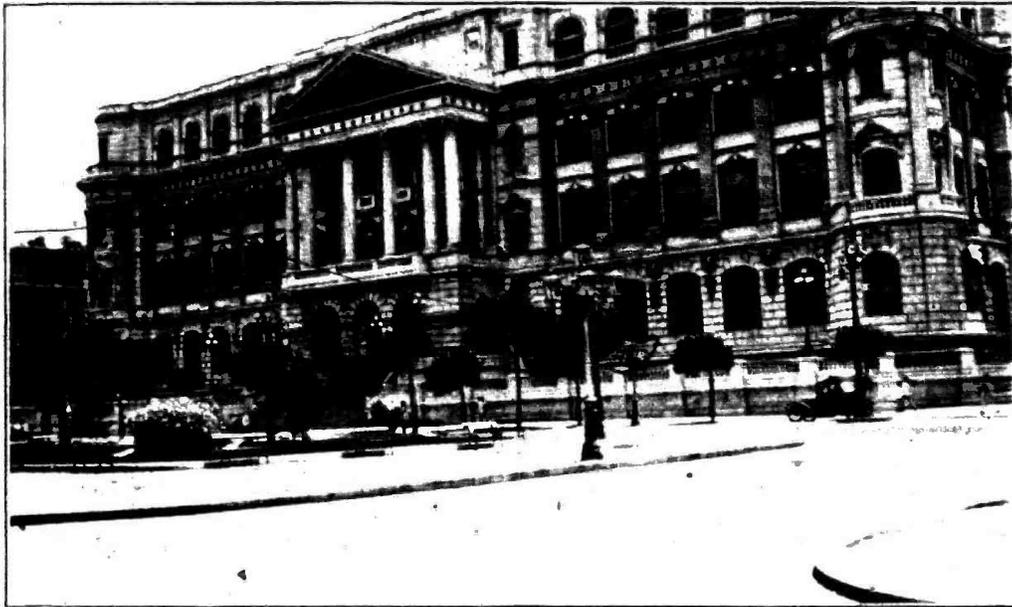
Methods of choosing a professor.—The position of professor in a Latin-American university, his limited duties and responsibilities, the methods of instruction, and the importance given to examinations explain many points in the university organization and administration that appear anomalous to a foreigner. But upon no point do they throw more light than upon the system employed for filling a vacant professorship. These systems show considerable variation, but the principle upon which each is based is the same. Since the professor is not primarily a teacher, the question of scholarship is the only point considered, to the exclusion of teaching experience, personality, and didactic ability. Moreover, as the chair includes but one subject, or even a part of a subject, the scholarship test is limited to a narrow scope. It is specialization in the strictest sense of the terms.

An ancient custom.—The final appointive act is the prerogative of the Government, but the initiative usually belongs to the university. In no case does the rector or dean have the exclusive privilege of nomination, much less of choice. The form of procedure is derived historically from the old system of *oposición*, which operated as follows: Notice of the vacancy was published in accordance with a prescribed form, and the date was announced when applicants would be heard. The candidates assembled in the presence of the faculty

or a committee of that body and proceeded to examine each other in the subject for which a professor was sought. Each tried to propound questions that his rivals could not answer, but which he could readily resolve himself. Members of the faculty could also put questions to each of the candidates in turn. After this intellectual tournament, that candidate was chosen who had best parried the thrusts of his rivals and whose own intellectual armor exhibited the fewest dents.

A modified system.—This ancient procedure is now happily obsolete, but a modified form of the "opposition system" is still used in some Latin-American institutions. Candidates for the vacant professorship appear before the faculty at the same time, but instead of putting and answering questions each in turn presents a detailed program of the course as he would give it, enumerating the topics in the order he thinks they should be presented to the class and offering whatever remarks and explanations he may desire. Each program is criticized by the other candidates, also by members of the faculty, and the author is expected to defend his position. The candidate is then assigned a topic from his program and allowed a certain time, usually 2½ hours, to prepare the lesson. This lecture is given in public, and the faculty, or a committee appointed by the faculty, judges the candidate's ability to present clearly, logically, and happily his subject. This system, while savoring much of the ancient *oposición*, gives some consideration to the pedagogical aspect of the question. Since a professor gives but one single course and the lecture method is the accepted form of instruction, it is important that the instructor have a logical program and a convincing address. The system, however, has grave defects, and its disadvantages have been tersely stated in a recent report of the rector of the University of Arequipa. He argues that the program submitted may not be original; at the best it must be modeled upon others, and in either case is no adequate criterion of the author's knowledge of the subject, while the oral lesson is more a test of oratory than of pedagogy.

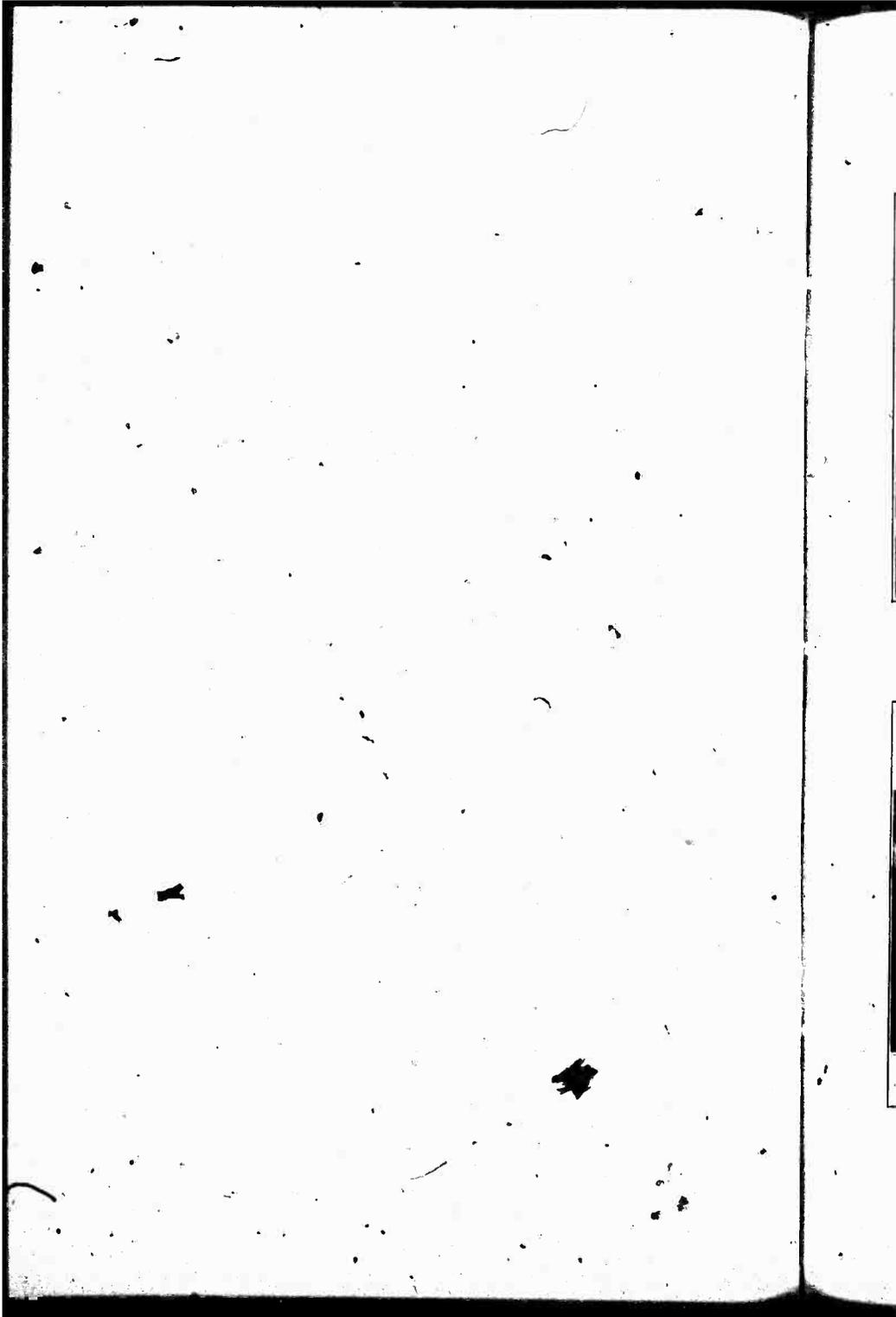
A further modification.—Even this modified form of *oposición* has fallen into disfavor in the larger universities, and a further modification has been instituted. The candidates for a vacant chair submit to a committee of the faculty a record of their scholastic achievements, a list of their publications, and also a detailed topical program such as has already been described. There is no confrontation of the candidates. The committee is composed of those professors whose chairs are most closely related to the one to be filled. It examines the records, publications, and programs in private sessions and reports its findings to the faculty. The oral lesson is retained, but only the candidate whose scholastic attainments, best



A. NATIONAL LIBRARY, RIO DE JANEIRO.



B. SCHOOL OF FINE ARTS AND ART MUSEUM, RIO DE JANEIRO.

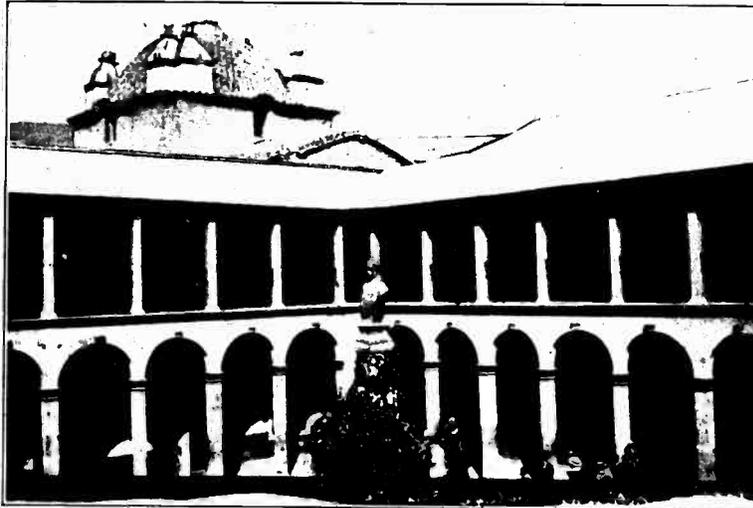




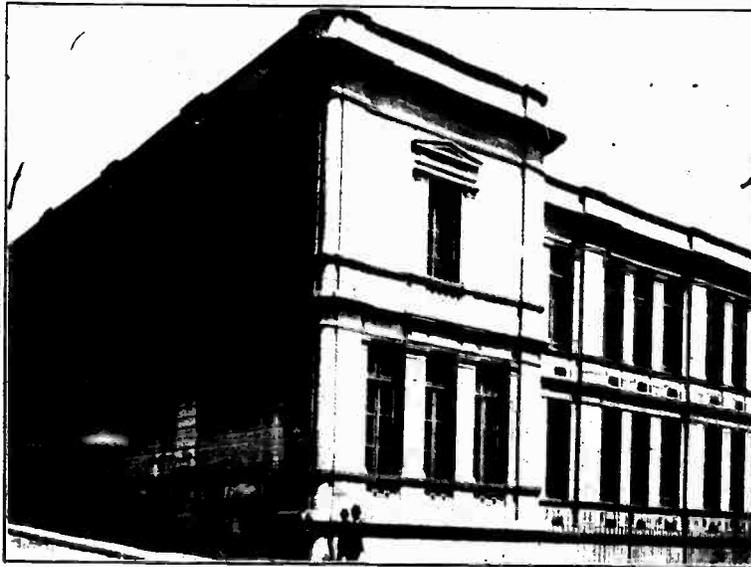
A. OLD SEMINARY AT SAN JOSE, COSTA RICA.



B. BOYS' HIGH SCHOOL, RIO DE JANEIRO.

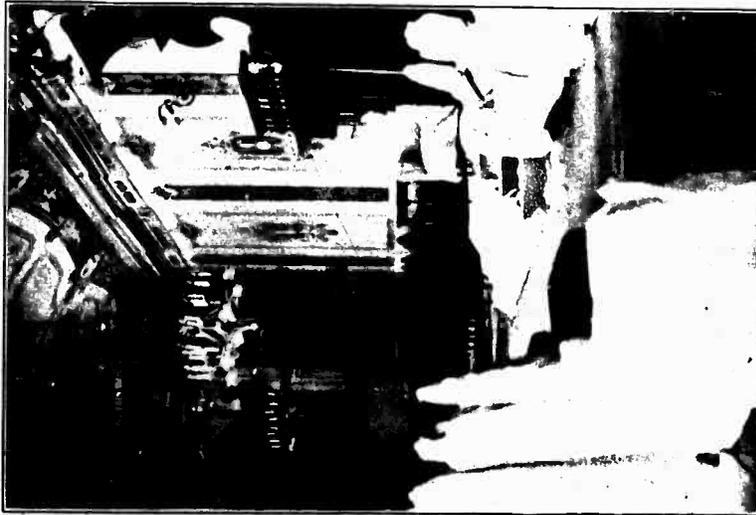


A. PATIO OF THE BOYS' HIGH SCHOOL AT LA PAZ, BOLIVIA.



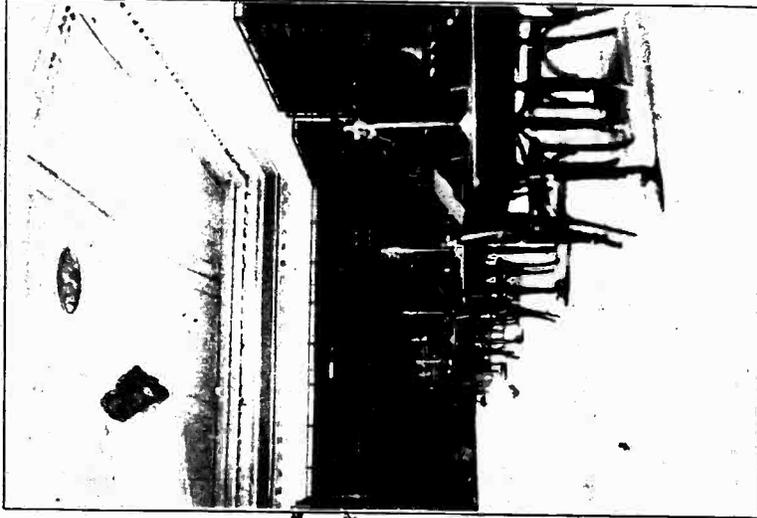
B. THE NATIONAL COLLEGE, ASUNCION, PARAGUAY.

BUREAU OF EDUCATION



A. SALÓN DE ACTOS, UNIVERSITY OF CORDOBA, ARGENTINA.

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B. READING ROOM IN THE LIBRARY OF THE UNIVERSITY OF CORDOBA, ARGENTINA.

meet the judgment of the committee is invited to give the public lecture, which, in fact, is commonly regarded as a mere form—an empty tradition.

The substitute professor.—A further departure from traditional methods is observed in the tendency to apply the last-named procedure to the selection of the substitute professor (*el suplente*), who succeeds as a matter of course to the chair in case it becomes vacant. The substitute professor is a constant element in most Latin-American faculties, and the position is not in the least anomalous when it is remembered that the regular professor is lawyer, physician, engineer, or publicist, and that the exigencies of his profession may at times prevent him from fulfilling his duties as professor. These reasons make it advisable, if not absolutely necessary, to have another ready to take up the work. The substitute when chosen may not, and usually does not, have any regular duties. He simply holds himself in readiness to assume the class in case the *catedrático* through absence, sickness, or other reason is unable to give the lectures. The position is an honorable one in itself and places the occupant in a favorable position in case of a vacancy, even in those institutions where the succession is not fixed by university statute.

Government confirmation.—In all cases the successful candidate is still subject to confirmation by the State authorities. The recent reform of higher education in Brazil will make an exception there to this custom. The new Brazilian law grants to individuals and societies the right to incorporate for the purpose of founding universities independent of the State. The corporation, within certain well-defined and necessary limitations, can prescribe the course of study and the length of the term, elect the professors, and expend its revenue in the manner it chooses. The law puts higher education on much the same basis as in the United States and is in direct contrast with the older and prevalent Latin-American policy of governmental control and monopoly. The traditional custom has had the advantage of preventing the unlimited creation of professional schools, and Brazil may witness under the new law the foundation of mushroom medical and engineering schools lacking scientific equipment and granting unworthy certificates of graduation. Federations of sovereign States, such as Brazil and the United States, necessarily experience legal difficulties in establishing uniform national regulations.

Decentralization in the universities.—In enumerating the institutions of higher education in Latin America repeated reference has been made to both universities and independent faculties, and it was stated that some countries adhered to the first system and others to the second. As a matter of fact, this distinction exists more in

name than in fact, and everywhere the faculties are to a very large degree independent each of the other, and all of the central organization. The university is a loose federation of separate schools, and the larger it becomes the greater is the centripetal force.

In the North American University the administrative officers, as distinct from the professorial staff, constitute a strong element of unity. President, secretary, and registrar belong equally to all departments and give their entire time to the interests, scholastic and financial, of the institution. The president especially is a bond of union. He is a man of more or less eminence, an educational leader, an authority, not in a single line of letters, politics, or science, but in the broader field of educational and administrative policies. The Spanish-American university has a different type of organization. Its officials are little more than professors. They give but little time to the work of administration, because under the system there is little to be done. The rector is a lawyer, a physician, or a publicist, as are the professors, and the direction of the university is secondary to the practice of his profession. As he usually occupies the office but for a short term and then becomes simply one professor among many, he seldom acquires during his term as rector any additional prestige. Moreover, he is not expected to become an educational leader. He merely stands at the head of his colleagues for a short time and represents them before the State and the public. In many different ways the absence of a university president is a distinct loss in Spanish-American higher education, but in no respect more than in the unifying influence he might exert in the university organization.

Departments scattered.—Another decentralizing influence in the Spanish-American university is the material separation of the schools. No tract of ground was set aside for future buildings, and as the university outgrew its first home, faculty after faculty was transferred to other quarters, often in quite different and distant parts of the city. In the Universities of Montevideo, Buenos Aires, and Santiago no two faculties occupy the same building, and no two buildings are in the same part of the city. In other universities the same tendency is likewise noticeable, one or more faculties having been forced into other and often distant buildings.

The first always to develop the separatist tendency was the faculty of medicine. From the beginning, its practical work was done in the hospital, and many professors found it convenient to give their lectures there, in improvised classrooms. As laboratories were developed, special buildings were required for their installation, and a separate medical college was erected, if possible in close proximity to the hospital. Following the segregation of the medical school came that of the engineering faculty, accelerated also by the labora-

tory problem. If a school of agriculture was formed, it must necessarily be located in the country or in the outskirts of the city. Thus widely separated in distance, with students entering the different faculties directly from the liceo without passing through any common faculty of arts and sciences, the various schools had little in common, and it is not to be wondered at that they have grown apart. Each has its dean, who is a rector in parvo, each its secretary, its special library, and its student society. In the large universities the rector and general council do little in the way of general administration save proportioning the annual revenue among the various schools; in other matters the faculties exercise almost complete independence. The tendency is well illustrated historically; Sucre, once the seat of a noted university, now has only separate faculties. The same is true of Guatemala. During several years the University of Salvador was officially conducted as separate schools, and has but lately returned to the university form of organization. The ease with which the change is made from one system to the other shows how loose is the university organization.

Another condition that accentuates the separatist tendency is the lack of a real department of letters, science, and philosophy. A distinguished Chilean describing the University of Santiago writes: "Although the university charter contains all the necessary provisions to make of it a general scientific institution, it is, in fact, no more than a confederation of professional schools whose courses of study qualify the graduate for the profession of lawyer, engineer, etc." The professional schools have nothing in common, and there is no strong central faculty corresponding to the college of liberal arts in the United States.

Academias.—There exists in some universities, notably in Buenos Aires, an institution different in organization and function from anything in a North American university. In each faculty there is an "academy" composed of 25 members chosen among those professors who have served on the faculty council, or who have distinguished themselves in scientific or scholarly research. The latter class must have been in the service of the university not less than 10 years. Membership is for life and the society is self-perpetuating. The duties of the society are to study questions of university policy and advise the administrative officers; to discuss and report on administrative and scientific problems that may be submitted to the society; to maintain the standard of instruction in the faculty; to initiate reforms in the curriculum; and, in general, to strive for the betterment of the university. In so far as the academy touches the administration, it is merely an advisory board to the council. In matters of general scholarship, it is an academy in the ordinary sense of the term. In actual practice, it serves to connect the university

with the public, since professors who leave the chair for public service retain their membership in the academy. It advances the interests of scholarship by placing this ideal before professors; and, by the election of honorary members, which is one of its privileges, it enlists the sympathy of scholars in distant parts of the country and serves as a means of communication with learned societies in other countries.

Close relation between the university and secondary schools.—Universities have had no preparatory schools such as formerly existed in the United States and exist still in some localities. However, there was often a close relation between the university and the national liceo of the same city or town that made of the latter a preparatory department to all intents and purposes. In referring in preceding paragraphs to the frequent disappearance of the faculty of letters, philosophy, and pure science, it was stated that its place had been taken in a certain measure by the improved secondary schools. The theory that higher literary studies are not a subject for school methods—a theory developed in France at the time of the Revolution, and tersely expressed by Napoleon in the words: *Le goût et le génie ne peuvent s'apprendre. On comprend un cercle, un salon, même une académie, ou quelqu'un professe et disserte, tout cela s'applique non à l'instruction proprement dite et à l'exercice d'un état spécial mais à l'agrément de la société*, seems to have been imitated, or spontaneously evolved, in Latin America. The liceo is very generally looked upon as a department of higher instruction, especially if it is a liceo of the first grade, i. e., offering a complete course, covering the full regulation time, and entitling its pupils to the degree of *bachiller*. Very naturally the best institution of this grade is to be found in the capital, or other university towns, and often under the very shadow of the higher institution. Students pass from it directly into the professional faculties. There has not been, and very rarely is there to-day, any actual administrative bond between the two. Each has its own budget, its own officials and professors; and each depends separately upon the department of public instruction. But this mutual relation to the State creates in itself a certain bond, since in the minister's office one bureau is intrusted with both secondary and higher education, while to another is allotted primary and normal instruction.

Material contact.—Material circumstances, too, have served to connect the university with the local high school. In the early days of secular education, when the university was usually small and lodged in some old monastery taken over by the State, the liceo was naturally established in another part of the same vast structure. As the university grew and expanded it was the faculties of medicine and engineering that removed to modern quarters, while the second-

ary school remained and shared the old convent with the faculty of law and the remnants of the faculty of philosophy and letters. This condition has not yet entirely disappeared, and even where it no longer exists customs engendered by it have nevertheless persisted. Close proximity brought mutual relations. A professor in a faculty not infrequently occupied a corresponding chair in the liceo, and in the public mind both institutions were looked upon as of the same grade.

Movement in favor of preparatory schools.—In administration, however, university and secondary schools continued distinct. It is only recently that a tendency has developed in the university in favor of creating a special preparatory department. The movement is in no sense local, but the manner of effecting the reform has assumed different aspects in different States. Argentina was the first to give the movement tangible form. The policy was strongly advocated by the new University of La Plata, which was founded for the purpose of promoting in Argentina the modern spirit of scientific study, and not as a mere group of affiliated professional schools, as were the old universities. The faculty of La Plata contended that in order to foster scholarly ideals and to prepare its future students for the scientific studies of the university a special preparatory school was a necessity. Accordingly, in 1907, the department of public instruction transferred to the three national universities the liceos of Cordoba, Buenos Aires, and La Plata, to be conducted by them as preparatory departments, while at the same time retaining their character of national high schools.

The liceo of Cordoba, which adjoins the university, had always maintained a close alliance with the higher institution, and the official action of 1907 changed its position more in name than in fact. In Buenos Aires the situation was different, and the difficulties that arose retarded the actual transfer there until 1911. It was urged with reason that if the university required a special preparatory department, it would be better to create such a school; that to combine the two forms of education would denature both; and that the old national high school possessed a history that could ill be lost. In La Plata all was comparatively new, both liceo and university, so that no difficulty was experienced in the change of administration, and the preparatory department has from the first been a decided success.

A similar school for girls was established at the same time. The preparatory departments are not coeducational, but women are admitted to the university proper, and in some departments they enroll in large numbers. The two preparatory schools have their own principals, but these officials are responsible to the dean of the department of pedagogy, and the avowed object of the university is to use

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the preparatory departments as model schools for its teachers' college. One of the ambitions of the university is to train teachers who will make teaching their sole profession; hence its large interest in its secondary school and its intense desire to make of it a model liceo in all senses of the term. In order to further enhance the utility of the boys' preparatory school, it has recently inaugurated on a limited scale the cottage system. Two cottages have been built, each housing about 35 boys, who live together as a self-governing community, each presided over by a "house father," who is at the same time a professor in the liceo.

As stated above, the three university preparatory departments are to retain the character of national high schools, and their studies are to be so ordered that a student may pass from any national secondary school into the corresponding class of the university school without loss of time or standing. This regulation prevents the universities from arranging the curriculum with the exclusive view of higher education, since the national high-school course is uniform throughout the five years. However, the universities have been permitted to extend their secondary school course to six years, and in the last year they arrange several parallel lines of study adapted to entrance into the various faculties of the university. Notwithstanding these concessions to the universities, the question is still unsettled in Argentina, and the faculty of La Plata at its last convocation voted in favor of a distinct intermediate course between the high school and professional studies.

The Chilean project.—In educational circles in Chile a project is under discussion for organizing a junior university which students may attend for two years following their secondary training. The object of the institution will be to prepare the student for the particular faculty in which he expects to matriculate. The school will have three or four separate and parallel courses; some subjects will be common to all and others will be designed to give special preparation in the line the student elects. This plan, if adopted, would correspond very closely to the practice which now obtains in the best American universities of requiring at least two years in the college before admission to the professional school. It is contended in Chile that for the two years spent in the junior university a corresponding reduction of time could be made in the professional schools without loss to professional training. A further argument in favor of the project is that many separate laboratories now maintained in different schools could be combined, which would result in greater efficiency of laboratory studies and in greater economy of installation and maintenance.

The Uruguayan plan.—Uruguay has already adopted a similar plan, but without attempting to reduce the length of the professional

courses. There, as elsewhere in Latin America, a strong effort is making to lessen the number of young men entering the liberal professions, and one of the means employed is to lengthen the time required to obtain a professional title. The Uruguayan reform goes into operation in 1912, but its provisions will not be retroactive, i. e., students who entered the national high school before 1912 will enter the professional faculties under the old requirements. Some years must therefore elapse before the results can be properly judged. The two years of additional studies, to be known as the National Preparatory School, will comprise three lines of study, leading, respectively, to the three faculties of law, medicine, and engineering. Some studies will, of course, be common to all. The faculty will be of university grade, but the work will be done in the national liceo of Montevideo, which occupies a block adjoining the university proper, and with its new building and complete scientific equipment is admirably adapted to inaugurate the new policy.

The problem involved in all these different projects and reforms is the same that has agitated American schoolmen and the public for the past two decades: Can the high school and the university preparatory school be successfully combined? In the United States the question has been tentatively answered in the affirmative, but there is always a likelihood that the vote will be reconsidered. In South America the question is apparently being answered in the negative.

CHAPTER IV.

UNIVERSITY BUILDINGS.

In the matter of material equipment there is a wide divergence of conditions in Latin-American universities. The first universities, founded by the church, adopted the European monastic type of architecture as well as of organization. When, in the nineteenth century, they became secular and national, the State appropriated the buildings as well as the institution, and studies were continued in the same monastic environment. The old monasteries were so solidly constructed and have resisted so well the ravages of time and the elements that many stand to-day as firm as three centuries ago, and still serve for some part of the university work.

Universities and faculties established in the era of national independence or in the decades immediately following were usually housed in monasteries confiscated by the State, and were often less fortunate in their location than the old universities. The latter possessed monastic quarters built for school purposes; the newer faculties were sometimes placed in convents that were not primarily designed for scholastic uses.

Modern buildings for medical schools.—During the past century there has been a fluctuating evolution toward modern conditions—an evolution controlled by the expansion of the university, by the resources of the State, and by interest in higher education. The old cloistered convents were not ill suited to the first studies pursued in the universities. The faculties of philosophy, letters, theology, and law could be conducted without serious disadvantage in the ancient monasteries, but with the rise of medical and scientific faculties not only the increased number of students and professors, but also the very nature of the studies, required enlarged and different buildings. The medical faculty was usually the first favored, and for it were built modern and commodious quarters. In some States this enlargement and modernization of the medical school buildings began a half century ago; in others it has come in the last decades. Even the smaller countries show a lively interest in medical education and have followed the general movement for providing the best material facilities. Uruguay has recently completed a magnificent medical college, built after the most approved plans and furnished with a thoroughly modern equipment. Salvador is building beside her

splendid hospital a home for the medical faculty of her university that will reflect great credit on that sturdy little Republic. In general, it may be stated that the Spanish-American medical college of to-day enjoys adequate facilities, and indeed some schools are almost luxuriously housed.

The engineering school.—The formation of a school of engineering, sometimes established as an independent institution, but usually developed from the faculty of pure sciences, demanded more space and different conditions than were afforded in the old university home. A separate building was the natural solution of the new problem, and in this way there frequently came another material growth in the university. The engineering schools can not boast of buildings as palatial as those of several medical faculties, but in all the larger universities they occupy separate quarters and possess the necessary facilities for the prosecution of their work. In those institutions where increase in numbers has not necessitated greatly enlarged facilities the ancient buildings are still much in evidence. The façade may have been changed to present a modern appearance, but within are vaulted roofs and cloistered patios indicative of the history of the building and even of the institution itself.

Notwithstanding the material progress that has marked the past few decades, the demolition of ancient structures and the erection of new ones, there are but few of the older institutions in which some remnant of monastic architecture may not be found. Even in such a thoroughly modern university as that of Buenos Aires it is not wanting. In the center of the irregular block of buildings that constitute the engineering school, surrounded by constructions of comparatively recent date, stands the thick-walled, arch-roofed chapel of a colonial convent, now used as a chemical laboratory.

Modern buildings.—The States have usually been generous in the material equipment of the universities. Interest in higher education preceded, as a rule, the development of primary schools. The first quarters of the universities corresponded adequately to the requirements of the times. With changing conditions the States responded whenever national resources permitted. In proportion to wealth and revenue, the expenditures for buildings and equipment for higher education during the past decades will compare favorably with that expended for the same purposes by North American Commonwealths. Few Latin-American universities have been the recipients of private benefactions. National or local governments have borne not only the current expenses of higher education, but have also provided the original equipment, which represents a very considerable sum. The value of the grounds, buildings, and equipment of the University of La Plata is estimated at \$10,000,000. The new medical school of La Paz was provided with a suitable building in 1909 at a cost of

\$60,000. A like sum is to be expended in the erection of the new pavilion of the medical college at Lima. Uruguay has appropriated \$240,000 for the College of Veterinary Surgery, after having just spent more than a million in new buildings for the National University and the Agricultural College. Thirty years ago Venezuela renovated the old university building at Caracas and added a new wing for the engineering department. More recently a new hospital and special laboratories for the medical school have been erected on the outskirts of the city. Mention has already been made of the new medical college building in Salvador. Some years ago the Medical College of Bahia, in Brazil, was almost entirely rebuilt and enlarged. The Law School of Recife has just taken possession of a magnificent structure. Sao Paulo has provided its Polytechnic Institute with a splendid building and material equipment. The National Government erected one new laboratory for the Medical College of Rio de Janeiro some years ago, and has just appropriated a large sum for the construction of a modern building on the site of the old convent that the school has occupied for a century. These are but examples of what the different Latin-American countries have done and are doing toward equipping their institutions of higher learning. The financial burden involved in this extensive plan of building appears even greater when it is known that the current expenses of the universities are large and the cost per student greater than in the State universities of the United States.

CHAPTER V.

BUDGETS AND SALARIES.

The Latin-American Republics believe so strongly in the efficiency of higher education that they are content to pay the cost however great, and both in proportion to the total revenue and to the amount expended for education of all grades, the sums destined for the universities appear strikingly large. In justification it can be urged that these institutions are something more than mere schools. On the one hand, they are administrative departments of the State, directing and controlling the professions, and, on the other, they partake of the nature of academies fostering general culture in countries where the agencies that make for culture are not as numerous or as pervasive as in older nations. Such functions deserve liberal support from the State.

Reasons for favoring the universities.—The fact that the universities are designed especially for the education of the upper classes is another reason that explains the liberality of the State. The same classes that govern the country profit most from the advantages of the university. However, selfishness is not the only motive for the liberality exhibited, for some States support just as generously institutions for the special education of the lower classes, such as trades and commercial schools. The explanation is rather to be sought in the paternal character of Latin-American government. Private and individual initiative are little esteemed. In every enterprise of importance the State is expected to take the lead. In a matter so transcendent as professional education (and, as previously explained, the universities are almost exclusively professional schools), no power but the State is considered worthy of leadership. Distrust of the church is another impelling influence. The ruling classes all pass through the university, and the Republics desire that they come to their task free from the bias of ecclesiasticism, which unfortunately is considered inimical to republican institutions.

Annual budgets.—The annual appropriation for the current expenses of university education in different representative countries will convey an idea of the generosity of the States in this branch of public instruction. Ecuador expends \$125,000, with an enrollment of 340 students. Argentina devotes more than two millions with a student enrollment of 7,000. This figure does not include the income

derived by the universities from endowments and matriculation and examination fees. The University of Buenos Aires expends annually about a million, and the University of La Plata a like sum. For the University of Chile the annual current expenses amount to \$375,000.

The three professional schools of the University of Montevideo, which enroll about 800 students, receive annually from the State some \$250,000, while for the agricultural and veterinary schools there is appropriated \$75,000 more. In Mexico the budget for the university at the capital alone in 1911 amounted to \$335,000.

Proportional cost and enrollment.—The cost per student is greater than in the State universities of the United States. This fact is explained in part by the virtual absence from the Latin-American university of the college of liberal arts, which in North America includes such a large proportion of the total student population. Professional schools, especially the schools of medicine and engineering, are more expensive both in equipment and maintenance than a faculty of arts. On the other hand, conditions of climate and temperature render the upkeep of the average Latin-American institution much less onerous, and as there is no campus another element of constant expense is eliminated. The fact that there are many institutions with a very small enrollment would tend to raise the average cost per student, but this disadvantage is counterbalanced by the other fact that most of the small institutions are schools of law only, and the law faculty is the least expensive to install and operate.

Large teaching staff.—The real explanation of what appears to be the excessive cost of higher education in Latin America is the form of organization. The personnel is too numerous, from servants and janitors through all the hierarchy, up to the administrative officers themselves. The system of dividing instruction into small parts and assigning but one part to an instructor necessitates a large professorial staff, and even if the pay of each is modest the total cost to the institution is greater than if a few devoted all their time to instruction and were paid a liberal salary. In the schools of engineering and architecture of Santiago there are 400 students and 75 instructors. The schools of medicine, pharmacy, dentistry, etc., enroll some 700 students, while the teaching and administrative staff number about 140. And yet in this respect conditions are better in Chile than in many other countries. In the University of Guayaquil, one-third of the total revenue is spent in administration, and with something fewer than 100 students there are no less than 18 professors.

Few teaching hours.—The conditions of instruction in the Latin-American university do not, however, arise from excessive salaries, but from excessive subdivision of the work and the little time that

required of each instructor. Salaries vary enormously, not so much on their face however as in relation to the teaching hours. Usually they are estimated by the month, and payable for each of the 12 months. A few examples drawn from different countries and representative institutions may be instructive.

Professors' salaries.

| Institution. | Salary per month. | Hours per week. |
|---------------------------------|-------------------|-----------------|
| University of Quayaquil..... | \$100 | 6 |
| University of Cordoba..... | 120 | 3 |
| University of Cuzco..... | 50 | 6 |
| University of Buenos Aires..... | 120 | 3 |
| University of Montevideo..... | 100 | 3 |
| University of Santiago..... | 100 | 6 |
| Law faculties of Brazil..... | 250 | 5 |

These figures are necessarily approximations, since in some institutions salaries are not uniform. In certain departments they may be higher than in others. There may also be a graduated scale of increase depending on the length of service. In a general table it is impossible to take into account all such details, but notwithstanding these reservations the figures are sufficiently accurate. In striking averages, no account has been taken of salaries paid to foreign professors contracted for by the Government for special service. These men receive much larger salaries and are supposed to give all their time to instruction, investigation, or administration; hence they fall outside the realm of the present comparison.

Some comparisons.—The small salary, the few hours devoted to teaching, the subdivisions in the subjects taught, and the tradition of but one subdivision to a professor are all interrelated parts of a system that seriously hampers university instruction. The professor is assigned few lecture hours, not that he may have time for study and independent investigation, but because tradition, or the law, forbids a plurality of chairs. In a small law school, such as that in the University of Cordoba, there are 2 professors of Roman law, 2 of commercial law, 2 of international law, 2 of legal procedure, and 4 of civil law, i. e., a separate instructor for each year that the subject is studied. If a professor were to confine himself to teaching as his only profession, the salary would be insufficient for a livelihood. He is not underpaid in proportion to the time he gives to the university, but he would be badly underpaid if he gave all his time and received no greater salary than at present. It will be noticed from the table above that in the larger institutions, located in important centers, the average stipend for a three-hour course is \$100. If the professor taught 10 or 12 hours (which may be taken as a low average in the North American State universities), a proportionate remuneration

would bring his annual salary to \$4,000 and upward, which is larger than in similar institutions in the United States. The Spanish-American universities have been slow to see that a teaching profession devoted solely to the one vocation would raise the standard of instruction and at the same time provide a body of scholars that would pursue independent scientific investigations and reflect credit on their countries in the learned world. Few scholarly and scientific works are produced in Latin America, partly because there are no men who can devote their entire time and talents to scholarship or science. The need of such work is felt, but the learned institutions have not shaped their organization in a way to make it feasible. In late years La Plata has done something by emphasizing the scientific spirit, but it is hampered in its struggle by the retention in large measure of the traditional practice of subdivided chairs.

The Uruguayan policy.—It has remained for the University of Montevideo to recognize the root of the evil and to inaugurate a different policy. A law promulgated in 1911 authorizes an increasing scale of salaries for those professors who devote all their time to scholastic pursuits and produce works or conduct scientific investigations of recognized merit. During a period of four years the salary will remain \$100 per month, as at present, but after that time it may be doubled if the professor meets the requirements of the law. A second increase of \$100 may be granted after a further period of three years, providing the professor continues scholarly work, and even a third is possible after another three years. It will be possible, therefore, for an instructor to attain after a few years a salary of almost \$5,000. It will be noted that the teaching hours are not increased; the premium is conditioned solely on "production," although it is stipulated that instruction must be satisfactory. It is reserved for the faculty itself to judge whether a professor meets the conditions of the law, and this decision is controlled by the university council and the rector. It is in this provision that the new policy is probably the weakest, and it remains for experience to show whether the regulation can be administered with justice and impartiality.

CHAPTER VI.

THE LAW FACULTY.

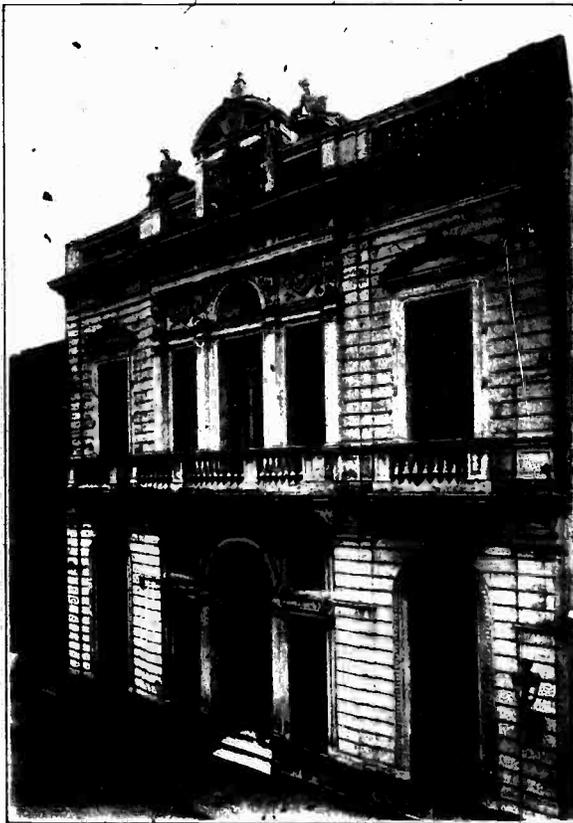
This department has constituted since the beginning of the nineteenth century the veritable nucleus of the Spanish-American university. It differs widely from the North American law school in methods, curriculum, and purpose. The difference is manifested in the very name of the department—Faculty of jurisprudence, as in Peru, Mexico, and other States, or faculty of juridical and social sciences, as in Argentina, Brazil, etc., or faculty of law and political and social sciences, as in Chile and some other countries. In very few countries is the official nomenclature simply "school of law." As the various names imply, the institution is designed to be a school of wider range than the American law school, less practical and more educative, less professional and more philosophical. The predominance of the law school has in recent years been seriously challenged in the largest universities by the faculty of medicine. The enrollment and influence of the latter have increased in much greater ratio on account of the concentration of medical studies in one institution. Law studies, however, are pursued in all universities, not to mention the many separate schools of law. Another reason for the rapid growth of the great medical faculties is the existence of affiliated schools of pharmacy and dentistry. For these reasons the enrollment of students in the medical faculty of Buenos Aires is more than twice the number in law, while in Santiago and Lima the numbers are about equal. Historically, however, the law faculty enjoys a great prestige, and the legal profession is the most aristocratic of all callings.

Physical equipment and libraries.—In the matter of material equipment the law school is the least favored of all the faculties. Since its activities have not developed peculiar physical needs, it has either been retained in the original monastic quarters of the old university home or been relegated to a rented building that has no scholastic atmosphere and is often ill suited to the needs of the school. These undesirable conditions are liable to continue, for the desire of the Governments is to encourage scientific studies, and the moneys available for educational purposes are diverted in this direction. The law school is already too popular.

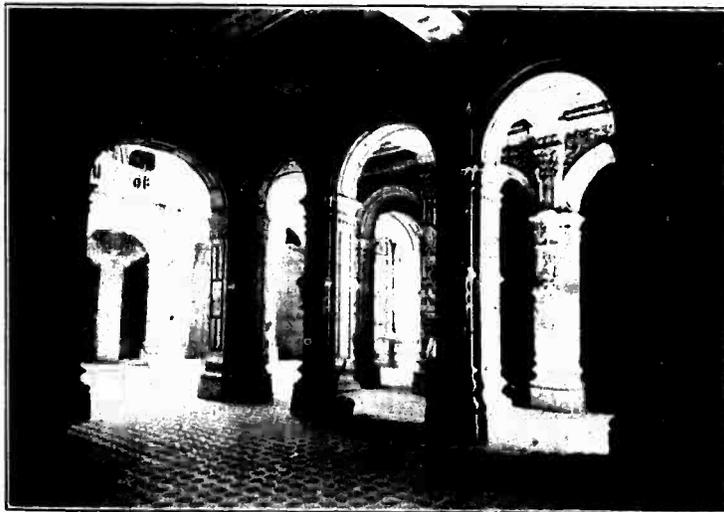
In one particular, however, the equipment of the law faculty is generally good. On account of its long history and the commanding position it has held, the faculty has in many universities accumulated a large library. The collections are frequently housed badly and lack proper classification and a ready catalogue, but the number of volumes is large, and, while it is in administration a department library, on account of the composite nature of the Latin-American law school it is far from being strictly technical. Literary works abound, especially the modern classics of all literatures either in the original or in translation. History is well represented. Philosophy receives large space. Works on economics, finance, and sociology have been added in large numbers in the past decades, while the dependence of Latin-American codes on the Napoleonic digest has led to the acquisition of great numbers of French works, both technical and general, on all phases of law.

Organization.—The variety in names applied to the faculty in different countries arises in part from the existence of two distinct forms of organization. In some States, as in Peru, for example, there are two coordinate faculties—the faculty of jurisprudence, the original school, with a five-year course embracing only legal and juridical studies; and the faculty of political and administrative sciences, with a three-year course comprising economic, constitutional, international, and legislative studies. In other countries, as in Brazil and elsewhere, the two faculties are combined, but very considerable importance is ascribed to subjects of economic and sociological import. The course of study in some countries extends over five years, as in a faculty of jurisprudence, but in others it comprises six. In 1909 the University of Buenos Aires revised the curriculum, retaining six years for the regular course, but adding a seventh for the doctorate of jurisprudence. Brazil has recently increased the law course from five to six years. In the past decade there has been manifest a general movement in favor of lengthening the law course. The limit has probably been reached in Salvador, where the term has been increased from seven to eight years. The avowed object was to render the study unattractive to young men and drive them into vocations of greater utility to the State. It was the same motive that prompted the last increase in Brazil and the additional year for the doctorate in Buenos Aires. The degree of doctor of jurisprudence has long been a special mark of aristocracy in Latin America. In 1912 Honduras forbade further matriculation in her law school for a term of two years, and Ecuador has seriously considered the advisability of closing the law schools entirely for a time.

Curricula.—While there is necessarily a considerable uniformity in the curricula of different countries, the differences that do exist are all the more noteworthy, since traditions and ideals have been the



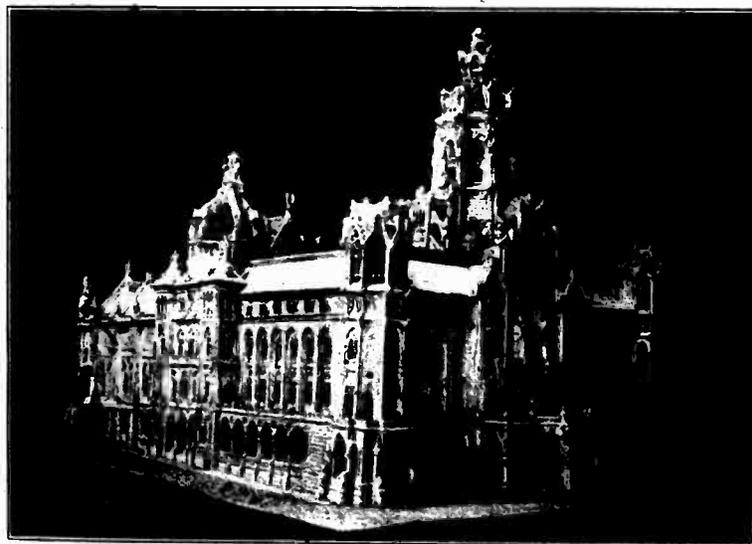
A. GRADUATE SCHOOL FOR MEN, BUENOS AIRES.



B. VESTIBULE AND PATIO OF THE AMPHITHEATER OF THE NATIONAL PREPARATORY SCHOOL, MEXICO CITY.



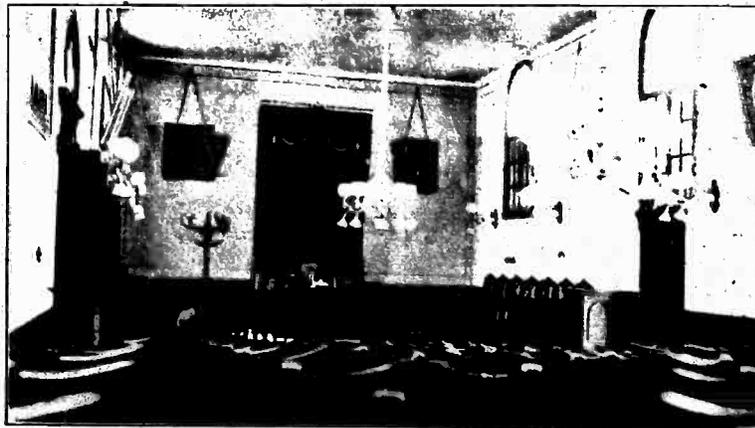
7. THE PERNAMBUCO (BRAZIL) LAW SCHOOL, APPROACHING COMPLETION.



8. NEW BUILDING DESIGNED FOR THE LAW DEPARTMENT OF THE UNIVERSITY OF BUENOS AIRES, ARGENTINA.



A. A PORTAL OF THE LAW COLLEGE, GUATEMALA CITY.



B. THE "SALON DE ACTOS" OF THE LAW COLLEGE OF THE UNIVERSITY OF SAN MARCOS, LIMA, PERU.

same in all and all have received their greatest inspiration from the one source—the law faculty of the University of Paris.

The three following curricula are representative and give a fair conception of the subjects taught, the order of their presentation, and the time given to each. Three lessons per week may be assumed as the schedule of a course, but in a few schools there are more, as in Brazilian faculties. What the bare curriculum does not indicate is the extent and content of a given subject. These points are portrayed in great detail in the *programa* published for each subject, but the length of these documents excludes their reproduction in a work of this nature; and although they provide a valuable syllabus for the student, they do not always indicate the real content of the lectures.

REPRESENTATIVE LAW CURRICULA.

FIRST YEAR.

| <i>Sao Paulo.</i> | <i>Buenos Aires</i> | <i>San Jose (Costa Rica).</i> |
|--|---|--|
| General introduction to study of law. Public and constitutional law. | General introduction to study of law. Psychology. Roman law (first course). | Civil law (first course). Criminal law (first course). Roman law (first course). |

SECOND YEAR.

| | | |
|--|---|--|
| International law, public, private, and diplomatic. Administrative law. Political economy and finance. | Roman law (second course). Civil law (first course). Public international law. Political economy. | Civil law (first course). Criminal law (second course). Roman law (second course). |
|--|---|--|

THIRD YEAR.

| | | |
|---|---|--|
| Roman law. Criminal law (first course). Civil law (the family). | Civil law (second course). Criminal law. Finance. Constitutional law. | Civil law (third course). Commercial law (first course). Public law. |
|---|---|--|

FOURTH YEAR.

| | | |
|---|---|--|
| Criminal law (continued). Civil law (real property). Commercial law (first course). | Civil law (third course). Commercial law (first course). Administrative law. Mining, rural, and industrial legislation. | Civil law (fourth course). Commercial law (second course). Administrative law. |
|---|---|--|

FIFTH YEAR.

| | | |
|---|---|---|
| Civil law (inheritance). Commercial law (continued). Medical jurisprudence. | Civil law (fourth course). Commercial law (second course). Legal procedure. Philosophy of law (first course). | Civil-law procedure. Political economy. Administrative law. |
|---|---|---|

SIXTH YEAR.

| | | |
|--|---|---|
| Theory and practice of legal procedure, civil, commercial, criminal. | Philosophy of law (second course). Legal procedure. Private international law. Practice in legal procedure. | Criminal-law procedure. History of law. |
|--|---|---|

The seventh year required for the doctorate in the University of Buenos Aires contains seven courses, of which the student elects four. The subjects offered are as follows: Comparative history of modern public law; evolution of the institutions of modern private law, general-economic evolution, comparative administrative law, organization and functions of public instruction, constitutional history of Argentina, political economy as applied to Argentina.

Aims of the law school.—It will be observed from this list of electives for the doctorate, as well as from the regular curriculum of the

three schools given above, that the Latin-American law school lays almost as much stress on the training of public leaders, legislators, and administrative officers as upon the education of lawyers and jurists. It is this policy that has prompted the formation in many countries of the faculty of political sciences by the side of the old faculty of jurisprudence. In such universities the student of law usually takes in addition to his legal studies some or all of the course in the parallel faculty, but the shorter course of three years in the school of political science forms a good education for young men expecting to enter business or public life. It may be even questioned whether a liberal education in political science, political economy, finance, sociology, commercial, administrative, and international law does not constitute a better training for public life than the technical study of law pure and simple. Latin-American schools attempt to provide both forms, either in a combined course or in separate but affiliated faculties.

The training of diplomatic and consular officers is another avowed function of these schools. The separate faculties of political science place large emphasis on this feature of their work, while some of the other institutions offer a special course for this express purpose. The law school of Buenos Aires contains a special department extending over two years with four courses in the first year and five in the second. They include civil, constitutional, maritime, and international law, diplomacy, political economy, finance, statistics, tariff and consular legislation, and consular notary usages. In other institutions that do not maintain a distinct division for this purpose a student will find all the necessary courses for the training he desires and can select what he requires without being a candidate for a degree.

Another department in the school of Buenos Aires is a two-year section for training in administration. This division involves the giving of but one or two special courses; the others are selected from the regular curriculum.

All schools of law in Latin America include a department for the training of notaries, which is a distinct profession, as in France and other European countries. The course is almost uniformly of three years, embracing most of the strictly legal courses but omitting the studies in the history and philosophy of law and jurisprudence. It is to all intents and purposes a practical course in law, and, with the exception of studies in criminal law, pleading, and moot-court practice, is as comprehensive a study of law as that offered formerly in the United States in the two-year law schools.

Practical training minimized.—The courses in legal procedure are both theoretic and practical, but the tendency here, as in Latin-American instruction of all grades and schools, is to put the emphasis

on theory. Many law schools frankly admit that in spite of the long course of five or more years they do not aim to prepare the graduate in juridical science for the practice of law. He is expected to acquire skill in the everyday conduct of his profession by serving an apprenticeship in an attorney's office, either during or after his university studies. The law school of the University of Lima requires specifically such an apprenticeship before the degree is conferred. An attorney acceptable to the faculty receives the student into his office and at the end of the apprenticeship attests to the faculty the assiduity and practical experience of the student. Other institutions have similar or equivalent requirements. In Guatemala the student must spend a certain period in one or another of the lower courts studying legal forms. His presence in this case is vouched for by the magistrate. In Venezuela a law student is permitted during the last years of his course to practice in the lowest courts, and in this way he is expected to gain additional practical training. A recent regulation in Colombia requires the law graduate to practice his profession two years before receiving the doctorate.

Bar associations.—The close relationship existing between the law school and the bar association which is implied in such requirements as have just been outlined is everywhere obvious. It is the easier to establish and maintain, since legal education has been a State monopoly. The school is either maintained or subsidized by the Government. In either case the State retains ultimate control. In the case of the Catholic University at Santiago de Chile, which maintains a law faculty, the instruction is given wholly under the direction of the Catholic institution, but students take their examinations at the National University. Each center of importance has its bar association (usually called *Colegio de Abogados*), which is a well-established corporation controlling the practice of law in its locality and closely connected with the law school. It is not surprising therefore that the faculty can make use of local attorneys for the practical training of its students. In some instances, as in Costa Rica, it is the *Colegio de Abogados* that organizes and conducts the law school. The corporation usually receives a small subsidy from the State to aid in its enterprise.

General culture courses.—The law faculty in Latin America performs not only the function of a school of law and jurisprudence, or even that of a school of jurisprudence and social sciences, but it is also an institution of general culture, and in the education of men it takes the place in large measure of the American college of liberal arts. The representative curricula given on a preceding page include such subjects as psychology, sociology, political economy, finance, and political science. Some schools even maintain courses in local history and in Spanish and Spanish-American literature.

Certain other courses uniformly found in the law schools are much less technical and special than their names would perhaps indicate. Roman law often becomes merely a study of the evolution of Roman institutions, an interesting combination of constitutional history and Roman daily life. Likewise, the course in the philosophy of law easily becomes a history of civilization. The utility of all these subjects for a student of jurisprudence is unquestioned, and no criticism of or excuse for their presence in the curriculum is intended. The purpose in enumerating here the subjects and analyzing their nature is merely to emphasize the large nonprofessional element in the Latin-American law curriculum. In the school of Buenos Aires it will be observed that fully one-third of the subjects are of this character. The decadence of the faculty of letters and philosophy in most universities is coincident with the development of a liberal curricula in the law school, but it would be difficult to prove whether this decadence was historically the cause or the result.

As constituted to-day the faculty of jurisprudence is almost as much cultural as technical. Unless a young man purposes to follow a scientific career, he will find in the law college a happy combination of liberal, legal, and civic studies that afford a cultured, civic training, and at the same time give him an honored profession that may be applied either in legal practice or in public life. The nature of the course, as well as social conditions, explains why so large a percentage of law graduates do not follow the regular practice of the profession. The proportion varies in different countries. It is commonly estimated at 50 per cent, but sometimes as high as 80. No accurate study has apparently been made of the question, and formal statistics have not been compiled.

Duration of studies and methods of instruction.—The composite nature of the curriculum accounts also for the length of the course. A minimum of five years (except in La Plata), extended to six in several countries and even to eight in one, is out of proportion to the time allotted to legal studies by most nations, and also out of proportion to the time prescribed for scientific professions in Latin America. The well-to-do students, who constitute the great majority, do not object to the long course, and the few who can ill afford to spend so much time in acquiring a profession can elect the shorter course of practical law and content themselves with the title of notary. As indicated by the curricula cited, the subjects are taken up in a leisurely manner; only three per year in Brazil, four in Argentina, and three in Costa Rica. The lectures to be attended each week are therefore usually 12 and sometimes not more than 9 (in Brazil, however, 15). As they are not followed by quizzes they may be more or less neglected by the careless student who can compensate for his everyday negligence by skillful "cramming" for the year-

end examination. Every course of lectures is supplemented by a printed *programa* enumerating each and all the several topics on which the lecturer will touch. This constitutes an invaluable syllabus for a diligent and inquiring student. By attending lectures with even a moderate degree of regularity, and by pursuing parallel courses of reading, the student can acquire during the long course of study of the law school great breadth of learning in both technical and liberal studies. On the other hand, the lack of control through recitations and through frequent quizzes encourages the careless student to neglect his opportunities and waste his time. As he almost invariably enters the law faculty directly from the secondary school, he possesses neither the age nor the experience in independent study consistent with the method to which he is now subjected. The "case system," or any modification of it, is not used in Latin America. Instruction is systematic and deductive.

The prominence of the lecture method, with the corresponding neglect of recitations and quizzes, has an influence beyond the law school in another branch of public education where its utility is less defensible. Many teachers of history, geography, literature, philosophy, etc., in the secondary schools are graduates of the law college. They are naturally prone to apply in the secondary school the same method of instruction in which they themselves were trained in their legal studies, and whatever may be thought of the lecture method in professional schools it is certainly ill adapted to schools of lower rank.

Advantages of the law curriculum.—The law school considered purely as a liberal arts college, as in fact it is for many of its students, presents a decided disadvantage in that it contains no studies in mathematics and in natural and experimental sciences. As at present constituted, it gives the student's mind but one bent, i. e., toward the so-called cultured studies. If he is not to practice law (and many do not), if his education is to fit him for useful service in society, this usefulness would be much enhanced by a training in which social sciences were more evenly balanced with experimental sciences, and especially by a more appreciative attitude toward scientific activities which are the basic elements of industrial and economic progress.

Considered, however, as a law school or as a school of political science, the composite character of the curriculum presents many advantages. For the lawyer it tempers the asperities and technicalities of legal procedure with a broadening insight into social institutions, an ideal of social equity and a comprehensive conception of political organization and administration. For the future citizen and man of public life it limits Utopian theories by the knowledge of social evolution and the conservative influence of legal codes.

The La Plata plan.—The curriculum of the law faculty in the University of La Plata has already been referred to as exceptional. Its peculiar characteristics are the shortening of the term, the more strictly professional nature of the course, and the longer time and greater importance given to the studies for the doctorate. The professional course is condensed into four years by the omission of several nonprofessional studies, such as political economy, statistics, etc., by the exclusion of certain theoretic subjects, such as the philosophy of law, and by greater intensity in the work. Instead of three or four courses a year, La Plata requires four and five. For purposes of detailed comparison the full curriculum is inserted:

First year: Sociology and history of Argentina, history of Roman law, constitutional history of Argentina, and Argentine civil law.

Second year: Argentine civil law (continued), Argentine commercial law, administrative legislation, constitutional law, public documents and records.

Third year: Comparative civil law, comparative commercial law, industrial and rural legislation, Argentine criminal law, local public law (rights, privileges, and duties of the Argentine Confederated Provinces).

Fourth year: Comparative civil law (continued), judicial organization (civil and commercial law procedure), judicial organization (criminal-law procedure), public international law, private international law.

It will be noticed that the curriculum is more concrete. It begins with the facts of history and local codes, reserving for later years comparative studies, while the usual course in the philosophy of law has disappeared entirely. The studies in civil and commercial law occupy only half the time accorded to them in the neighboring University of Buenos Aires. In Latin-American universities in general there is undoubtedly room for greater intensity in study, especially in the law school. Students are tempted to consider their studies as a recreation rather than a business. In this respect the Latin-American university, and most of all the law faculty, resembles the North American college of liberal arts and differs from the professional school where intense application is the rule. The cycle of four years in La Plata leads to the professional title of attorney only. The studies of two additional years for the doctorate are as follows:

First year: Political economy, diplomatic history, comparative legislative law, and theories, criticisms, and comparative legislation in criminology.

Second year: History of representative institutions, political economy, finance, statistics, and economic geography.

The characteristic of this grouping is that practically all the liberal, nonprofessional studies have been reserved for the upper cycle, and that they are subjects that are capable of unlimited and independent investigation. This harmonizes with the general policy of La Plata, which aims not so much to prepare for the professions, but rather to foster scientific inquiry and advanced scholarship.

CHAPTER VII.

FACULTY OF MEDICINE.

Medical education is well ordered in Latin America, and this department of the university deserves great credit. The State has exercised a rigid monopoly, and this fact, joined with the relatively large expense of installing and equipping a medical college, has limited the number of such institutions and has enabled the faculties created to establish good standards of scholarship and to enforce stringent regulations for the practice of medicine. Until the year 1899 Brazil, with its vast territory and (at that time) nearly 20,000,000 inhabitants had only two schools of medicine; even to-day it has but three. Argentina has but two, and would perhaps have but one were it not for historic reasons. Bolivia and Ecuador each maintain two, and Colombia three, which are in part justified by the difficulties of communication in these States, although in Peru, where the distances are as great and the topography of the country as broken, it has been found feasible to concentrate all medical studies in one university. Mexico has six provincial medical schools in addition to the larger one at the capital, and in Venezuela there is a partial school of medicine at Maracaibo, but students go to Caracas to complete their studies and to receive their degree. In no other country of Latin America is there more than a single school of medicine.

Equipment.—The limited number of institutions has enabled the States, even the smallest, to equip the medical schools remarkably well. Almost everywhere the buildings are of modern construction. The school at Rio de Janeiro is the only one of the large institutions that has remained in old monastic quarters, and money has recently been appropriated for the erection of suitable buildings there. In some of the smaller schools, such as Cordoba, Caracas, and others, lectures are still given in the old colonial monastery, but new laboratory buildings have been provided. The laboratories are often found at some distance from the old university, in a quarter of the city more favorable for such studies, and this has proved to be but the first step toward the removal of the entire medical faculty from the old location. At Lima the medical college buildings, four in number, are detached pavilions, but this mode of arrangement is rather exceptional. The usual custom is one large building with one or

more interior connecting courts. The large edifice at Buenos Aires is in reality two buildings, since it was erected at different epochs, but although it has two entrances, the façades join and the several interior courts are connected.

In the matter of laboratory equipment conditions are good, and this is the more praiseworthy since the installation and maintenance of laboratories are matters of unusual difficulty. Apparatus and materials must all be imported; the genius of the people is not mechanical, and there is no general predilection for laboratory methods. But in the medical college, either the nature of the profession demonstrates to the student at the very beginning of his career the necessity of practical study, or his teachers succeed in convincing him of the advantages of laboratory experiment and first-hand knowledge. Laboratory study in the school of medicine has such an intimate connection with the practice of the profession that it appeals more strongly to the student than in the secondary school, or even in the engineering college. In many types of education laboratory exercises are simply cultural; in medicine, however, they are wholly practical. Whether it is for these reasons or others, it is an obvious fact that the Latin-American medical student approaches this part of his professional course in a different attitude of mind than that commonly exhibited by students in other schools.

The faculty regulates the practice of medicine.—The faculty of medicine acquires additional dignity and prestige from the fact that it is an administrative body as well as a teaching staff. In the latter capacity it conducts the year-end oral examinations, the final general examination, and passes upon the printed thesis presented by the graduate. Success in these tests secures for the student the academic degree of doctor of medicine. The same faculty as the representative of the State conducts the other examination that entitles the student to the privilege of practicing his profession. The faculty is therefore not subject to the humiliation that may fall upon a North American medical college when a State board of examiners, organized outside the college, rejects a good student and passes a poorer one. The monopoly enjoyed by the college excludes any motive for lowering standards. The faculty is also empowered by the State to make regulations governing the practice of medicine throughout the nation. It possesses therefore a threefold function; it teaches the student, examines the applicant, and directs the practitioner. Physicians educated abroad, or foreigners desiring to practice in the country, must also submit to examination under the same conditions as graduates of the school.

Preparation of professors.—No other profession in Latin America is so well educated. The genius of the race inclines toward liberal and artistic studies, and the physician has not only acquired a fair



A. SCHOOL OF MEDICINE, LIMA, PERU.



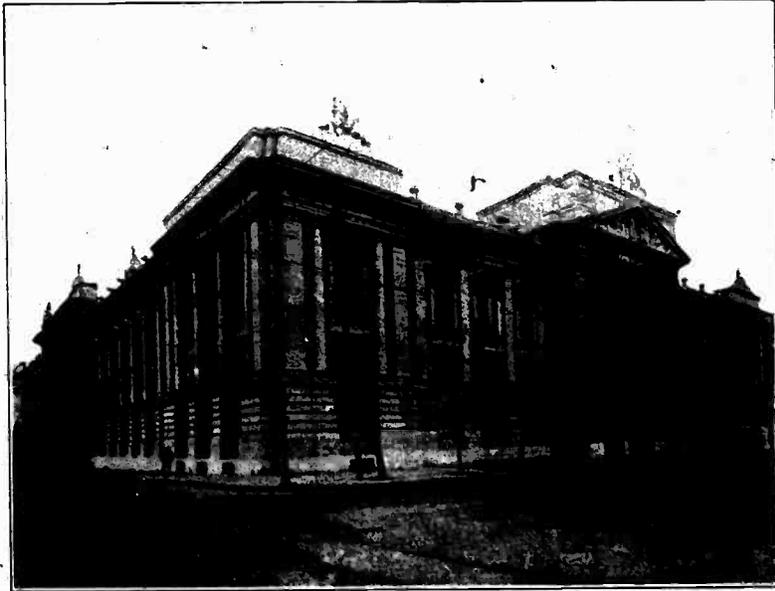
B. SCHOOL OF MEDICINE, GUATEMALA CITY.



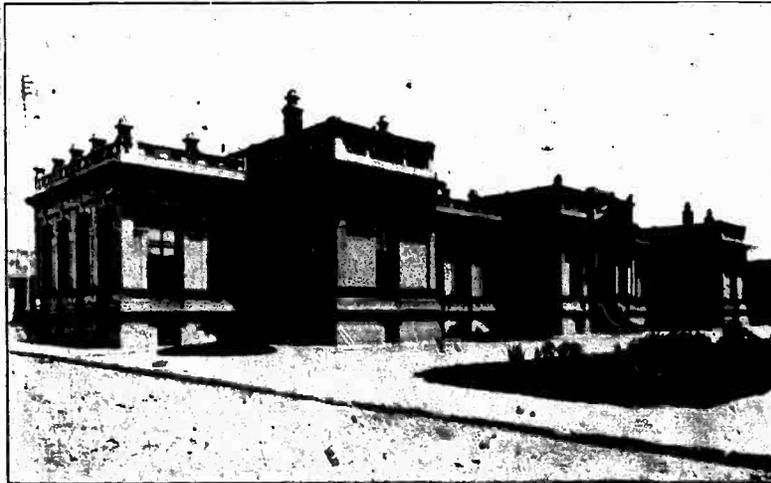
A. PARTIAL VIEW OF THE NATIONAL COLLEGE AT RIO DE JANEIRO.



B. ANATOMICAL INSTITUTION, CARACAS, VENEZUELA.



A. MEDICAL SCHOOL, BUENOS AIRES, ARGENTINA.



B. CHEMICAL INSTITUTE, MONTEVIDEO, URUGUAY.

modicum of these in the secondary school, but his natural bent of mind and his position in society enables him to continue them in after life. His professional studies on the other hand are distinctly scientific and practical, while the practice of his profession develops psychological acumen and analytical power. This happy blend of cultural, scientific, practical, and philosophical study is not afforded by any other profession in Spanish America.

Moreover, no other profession is as eager for postgraduate study. A physician does not consider that he is entitled to first rank unless he has studied abroad, and a very great number continue at once, or early in their professional career, their studies in one or another of the noted schools of Europe. By far the largest number go to Paris, not only because of the excellence of its faculty, but also because they already know the language more or less perfectly. It is from the ranks of these ambitious practitioners that the chairs of the medical school are filled. It would be difficult to find a professor who has not done postgraduate study in Europe, and, as the going and coming is continuous, the latest ideas in medical education and practice are known in Latin America, and propagated by men who have seen with their own eyes. European theories and methods of professional instruction are consequently followed closely, and, as Paris is the school most frequented, the medical colleges are practically all organized and conducted after the French model. Chile alone has followed German methods, a fact due to the presence of several Prussian professors in the faculty.

Hospital facilities.—Another element that contributes to the excellence of medical studies in Latin America is the advantage of a university hospital. Many of the best schools of medicine in the United States are dependent for clinical faculties upon hospitals that are entirely independent of the faculty. This condition causes serious embarrassment and often prevents the student from receiving sufficient practical training. In Latin America the school and the hospital are both State institutions supported at public expense, and the most natural arrangement is to put at least one hospital under the direct control of the faculty, with the privilege of using others (where there are more than one) as the necessities of the school require. This permits professors to give much bedside instruction, and also makes possible a large amount of hospital experience for all students. Beginning with his third year the student is assigned certain daily duties at the hospital, and during the last two years he serves a practical internship.

Curriculum.—Nowhere more than in the curriculum of a medical college does a mere enumeration of subjects fail to give an adequate, or even an approximate idea of the value of the instruction. The spirit of the school, the laboratory equipment, the reputation and

skill of the instructors, and the facilities for studying and conquering disease are more important elements in establishing the standard of the institution than a mere list of studies. However, a few curricula selected from different parts of Latin America may perhaps aid in giving a just appreciation of medical training. They will, at least, emphasize the long term of years required for the profession and indicate the nature and order of the studies.

REPRESENTATIVE MEDICAL SCHOOL CURRICULA.

| Chile. | Peru. | Venezuela. |
|--|---|---|
| FIRST YEAR. | | |
| Anatomy Botany Physics Chemistry (general) Zoology | Anatomy (descriptive) Medical physics Medical chemistry Medical natural history Clinic (surgical) | Anatomy Biological physics Biological chemistry Histology Microbiology |
| SECOND YEAR. | | |
| Anatomy Histology Physiology Embryology | Anatomy (descriptive) Analytic chemistry Clinic (surgical) Anatomy (general and microscopical) Embryology | Anatomy Biological physics Biological chemistry Physiology Dissection |
| THIRD YEAR. | | |
| General pathology Surgical pathology Medical pathology Biological chemistry Pharmacy Bacteriology | Physiology (general and human) Pathological anatomy Pharmacy Clinic (medical) | General pathology Surgical pathology Practice of medicine Clinics (medical and surgical) |
| FOURTH YEAR. | | |
| Practice of medicine Surgical pathology Medical pathology Therapeutics | General pathology Bacteriology Therapeutics and materia medica Clinics | Medical pathology Surgical pathology Obstetrics Clinics (medical, surgical, and gynecological) |
| FIFTH YEAR. | | |
| Clinics (surgical and medical) Ophthalmology Hygiene Pathological anatomy | General surgery Topographical anatomy Practice of medicine Clinics (medical and surgical) Dermatology | Medical pathology Tropical pathology General therapeutics and materia medica Hygiene Clinics (medical, surgical, obstetrical, and ophthalmological) |
| SIXTH YEAR. | | |
| Clinics (surgical, medical, and gynecological) Medical jurisprudence Obstetrics | Clinics (surgical, medical, ophthalmological, and gynecological) Genito-urinary diseases Laryngology | Therapeutical clinic and materia medica Medical jurisprudence Toxicology Clinics (medical, surgical, dermatological and syphilis) |
| SEVENTH YEAR. | | |
| Genito-urinary diseases Dermatology Gynecology Laryngology Mental diseases | Clinic of mental and nervous diseases Obstetrical clinic Pediatrics Hygiene Medical jurisprudence Toxicology | |

Duration of studies.—The length of the course is always six or seven years, the longer term being required in Chile, Argentina,

Bolivia, Peru, Ecuador, and Salvador. In Chile the last year is devoted to specialization; in the other countries it forms part of the general course. In Peru the student is required to spend two years in the faculty of sciences after graduating from the high school before he enrolls in the school of medicine. During this period he studies general physics and chemistry, botany, zoology, and analytical chemistry. These studies are, however, much more theoretical than practical.

In regard to the hours per week and the relative amount of theoretical and practical studies, the schools show considerable variation. At Buenos Aires the total hours per week range in different years from 30 to 36. During the first two years there are 9 hours of lectures; the rest of the time is spent in the laboratories. During the third and fourth years there are 12 hours of lectures and clinics; during the fifth and sixth years, 18 hours; and during the last year practically all the time is given to clinics. At Bahia the average hours per week during the first four years are 25 and during the last two, 32. Throughout both periods theoretical instruction occupies about one-half the time. At Santiago de Chile it is more difficult to estimate the relative time given to the two forms of instruction, because the practical is combined with the theoretical in the class periods, which are more numerous than in the schools just mentioned, while there is much laboratory work in addition.

The subsidiary schools.—A faculty of medicine invariably includes the three related schools of pharmacy, dentistry, and midwifery. The faculty in Chile conducts also a nurses' training school. The profession of midwife is universal in Latin America, although less common in Brazil than in Spanish America. The school of midwifery at Santiago de Chile enrolls about 75 students and that of Buenos Aires between 80 and 90. At Montevideo, where there were but 220 students in the medical course in 1911, the enrollment in the school of midwifery was 38. At Rio de Janeiro, however, in the same year there were enrolled but 10, and at Bahia, 13. The course of study extends over two years, in a few schools over three, and requirements for entrance do not equal those demanded for other courses in the medical faculty.

Schools of dentistry have been established only in the past two decades. In many faculties they are just now being introduced. The course of study is almost uniformly of three years; in Brazil, however, it covers only two years. The growth of the schools has been phenomenal, and dentistry is everywhere a lucrative profession. Although a full secondary-school education is demanded for entrance, dentistry is far from enjoying the academic and social prestige of the medical career. It is regarded more as a business than as a pro-

profession, and suffers the disparagement common to all nonprofessional vocations in Latin America.

This is not true of pharmacy, at least not to the same extent. That is an older profession and is so closely allied to medicine that it shares some of its luster. Schools of pharmacy have a relatively large attendance. At Lima there are half as many students of pharmacy as of medicine; at La Paz, one-third; at Santiago, two-fifths; at Montevideo, one-third. At Buenos Aires, however, the ratio is much smaller, being but 1 to 9. The average ratio is 1 to 3 or 4. The entrance requirements are the same as for medicine, and the course of study is regularly three years. In only one or two instances does it include four.

Medical texts and libraries.—Professors in the medical faculties are almost all natives of the country in which they serve. To this extent medical education in Latin America is national. In only a very few schools, notably at Santiago, are there foreign professors, "contracted for" by the Government. However, as stated above, the vast majority of the professors have studied in Europe, and texts and reference books are very commonly in French. Few translations of French are used, since all students, having come through the secondary school can read the originals with reasonable ease. Medical libraries are usually well stocked. However, in this day of rapid advance in medical science the number of books is a poor measure of a library's usefulness. The school at Rio de Janeiro possesses a library of 40,000 volumes; that of Buenos Aires, 32,000, including duplicates; that of Santiago, 7,000 in its working library; and other schools have collections in proportion to their size and importance. As every faculty publishes a medical review, it is able to acquire through exchange a large number of medical journals. Likewise, the practice of requiring a printed thesis from each graduate enables the college to exchange with others in all parts of the world that have the same policy. A very large proportion, probably more than 50 per cent, of the works are in French. The librarian of Buenos Aires, in a report published in 1911, states that of the 27,412 works consulted during the previous year 14 were Portuguese, 53 English, 211 German, 1,449 Italian, 4,821 Spanish, 7,148 Argentine, and 13,716 French. A similar report for the medical library of Montevideo gives the following results: German, 154; Portuguese, 231; English, 239; Italian, 1,243; Spanish (i. e., works in Spanish whether from Spain or Spanish America), 2,793; French, 5,816. These figures demonstrate the all-powerful influence of France in medical education in Latin America. The ratio of French treatises to those of other nationalities would be much the same in other countries.

Vacation schools.—The medical schools in Latin America are progressive and jealous of the good reputation of their graduates. In

countries of great distances and difficulties of communication, where centers of culture are few and far removed from the university, a country physician has little opportunity and less motive for continuing his studies and keeping abreast of his profession. In order to overcome this tendency to stagnation several countries, led by Chile, which has always shown itself enterprising in all types of education, have founded vacation schools for the country doctor. They are modeled after similar institutions in Germany and have met with considerable success, especially in Chile.

Two needed reforms.—Notwithstanding the progress it has made, frequently under adverse conditions, the Latin-American medical college is in urgent need of two reforms. The first is a better training in science and laboratory method on the part of the student before he matriculates. This desideratum is in a fair way of attainment by the proposed pre-university course already adopted in Argentina and Uruguay and projected in other countries. The other reform is a differentiation between the medical teacher and the medical practitioner. The best part of medical education in Latin America is the clinical instruction, where teaching and professional practice are necessarily combined; the weakest part is in such subjects as chemistry, bacteriology, zoology, etc., and in laboratory instruction. These chairs, like the clinical chairs, are filled by practicing physicians. Such courses could be better given by professional chemists, bacteriologists, etc., who could not only be greater specialists, each in his particular subject than is possible for a physician with a considerable practice, but who could give more time and supervision to the laboratory work of the students. Under the present system this part of instruction is relegated entirely to laboratory assistants, who are also physicians, but of less reputation than the head of the department, and the student is tempted to conclude that laboratory work is less valuable, since it is not important enough to claim the personal attention of the professor. The high standard of excellence attained by the medical faculty of Chile is no doubt due in large measure to the presence of several teaching professors (Germans) contracted for by the Chilean Government, who have taught the purely scientific subjects and exalted the rôle of the scientific laboratory.

CHAPTER VIII.

THE ENGINEERING FACULTY.

The Latin-American universities during the past quarter of a century have persistently struggled to confine theoretical education within its proper scope and to develop the practical side. The abstract element had held undisputed sway so long in the dominant faculty of law and social sciences that the battle was waged against great odds. In the teaching of law, long-established tradition and the nature of the subject, which lends itself easily to the lecture method, tended to retain the ancient habits of instruction. In the faculty of medicine much progress has been made. As shown in the preceding chapter, laboratory methods have been adopted everywhere and are in successful operation. To this faculty more than to any other is due the credit of breaking down the ramparts of tradition and bringing into the university modern ideas and modern methods.

Difficulties.—The faculty of engineering, which, both on account of its history and the content of its curriculum should be the most modern of all and the most practical in its methods, has had a severe struggle to free itself from the grasp of tradition and traditional methods. In Latin America certain forces which do not exist in the United States have operated to cause this condition. In the first place the ancient name of the faculty—a name that still remains as the official title—*Facultad de ciencias exactas*, was strongly indicative of the time when physics was simply theoretical and mathematical, and mathematics was pursued not for its practical application but as a form of logic and metaphysics. Derived from such an ancestry, it is not surprising that the engineering faculty should experience unwonted difficulty in freeing itself from abstract ideas and purely theoretical instruction. Another disadvantage which beset the engineering school was the old prejudice on the part of university students as a class against the rough work required in an engineering laboratory of the modern type.

Under these adverse conditions the Latin-American engineering school has developed with the greatest difficulty. The tendency to theoretical instruction born in the old faculty of exact sciences clung to the new school with deadly tenacity and was accentuated by the popular aversion to laboratory methods. Only as the spirit of commercialism and industrialism grew in Brazil, Uruguay, Argentina,

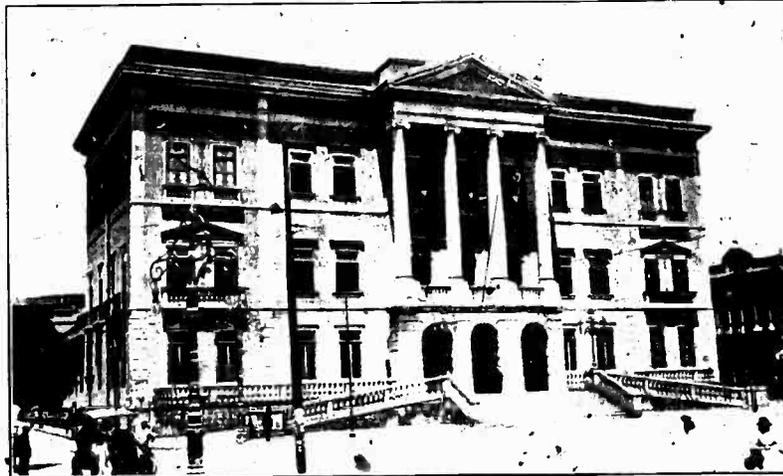
Chile, and Mexico, and in a lesser degree in the other States, did the engineering school begin to assume its proper position. With the recasting of society that is in progress to-day and with the patriotic fervor for national wealth and aggrandizement that actuates many States, this branch of professional education is at last growing in importance and efficiency.

Material equipment.—By favorable legislation and liberal appropriations many States have done everything possible to advance technical education. In Brazil no less than four new schools of engineering have been founded in the last two decades. The institutions at Rio de Janeiro and Sao Paulo have good buildings and fair equipment. The old School of Mines has been removed from its inaccessible location at Ouro Preto, and put at the provincial capital, Bello Horizonte, where it is easy of access and furnished with new buildings and additional apparatus. Within the past year Uruguay has given its engineering faculty additional facilities. In Argentina each of the three faculties is especially favored. At Cordoba the school has its own building and an almost independent organization. A number of German professors, specialists in engineering science, have been in the faculty many years. At Buenos Aires the facilities have been constantly increased, and the Government now projects an entirely new plant in another part of the city, where greater space will be available. La Plata has the advantage of its new installation and reformed curriculum. The annual budget of the school of Buenos Aires is much greater than the combined budgets of the faculties of letters and law. At Cordoba, for instruction alone, it is more than \$40,000. Chile has reserved the original university building in its entirety for the use of the engineering faculty and maintains a number of German professors to conduct the more technical branches of the work. In addition, the school of architecture has been detached and furnished with other quarters and special facilities. Almost one-third of the total budget of the university is devoted to this department. The Catholic University of Santiago also conducts a school of architecture and engineering. In Peru the school is independent of the university, has its own organization, separate building, large equipment, and valuable library. A new electrical laboratory was installed in 1911 at an expense of \$30,000. The annual budget amounts to \$50,000. Bolivia maintains no engineering school of university grade, but she expends \$20,000 annually on her Practical School of Mines at Oruro, and employs at a large salary a foreign engineer of note as its president. In 1910 the University of Bogota provided its faculty of engineering with a new building. At Caracas the school has its own building of modern construction and, like the faculty of Cordoba, is, in organization

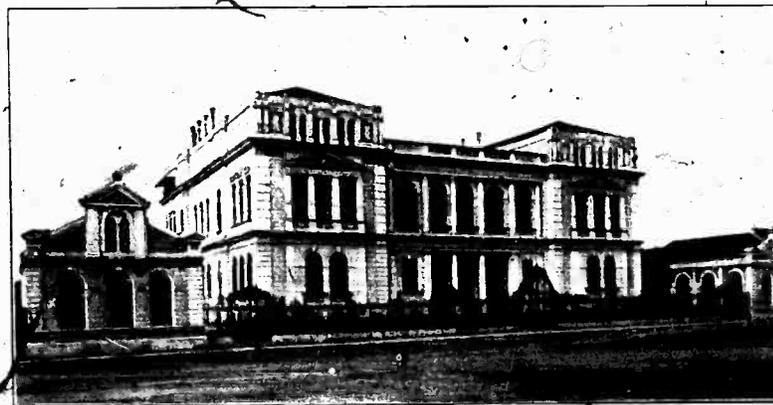
almost a separate institution. The smaller countries of Central America have found it impracticable to maintain engineering schools on account of the expense of laboratory equipment and the difficulty of securing competent instructors, and in its stead they send students abroad on scholarships. Mexico, during its four decades of industrial progress, gave much attention to industrial education, and besides the engineering school at the capital, with a budget of \$57,000 in 1910-11, there were other schools in the provinces.

Organization.—In 1911 Brazil formulated a new organization for the Polytechnic School of Rio de Janeiro, which has already been adopted by the school of Sao Paulo and will doubtless be followed by all the other institutions in the Republic. It prescribes three courses of five years each—civil, industrial, and mechanical and electrical engineering. The studies of the first three years are identical—mathematics, physics, chemistry, mechanics, geology, mineralogy, and botany form the bases of the work. The purely technical studies are reserved for the two upper years. There are no linguistic or literary studies. The last statement is equally applicable to all Latin-American engineering courses.

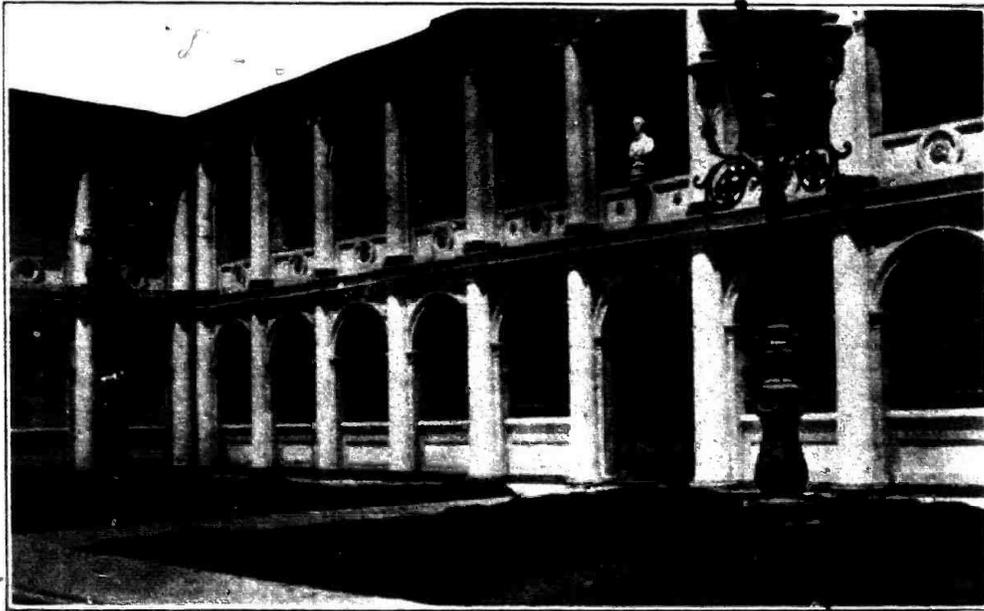
In all Spanish America, except Argentina, there is a marked uniformity in the organization of the engineering faculty and in the length, content, and arrangement of the various departments. The fact that in some instances the engineering school is an administrative unit within the faculty of exact sciences is of little import in understanding the work and is more form than reality. The engineering school directs the studies and confers the professional title of "engineer"; the faculty, composed of practically the same professors, confers the academic degrees in case the student aspires to these honors and passes the special examinations that entitle him to them. The engineering school comprises usually a department of surveying embracing three years, another of civil engineering embracing five years, and a third of mining engineering of equal length; in some, mining engineering is replaced by mechanical or industrial engineering. In the University of Buenos Aires, which offers civil and mechanical engineering, the time is extended to six years for the former. Some institutions have short practical courses of one, two, and three years in electricity, construction, etc. These sections must not be confounded with the industrial schools. They are of university rank, but do not lead to a degree or even to a professional title. Every school has also a section of architecture, which is one of its most important divisions and always has a large enrollment. The subject appeals strongly to the artistic genius of the race. So important is it that it practically forms a separate school, and in Chile has been given its own building and administration. The



A. POLYTECHNIC SCHOOL, RIO DE JANEIRO.



B. POLYTECHNIC SCHOOL, SAO PAULO, BRAZIL.



1. FAÇADE OF THE ENGINEERING SCHOOL UNIVERSITY OF CARACAS, VENEZUELA.



2. OLD UNIVERSITY BUILDING, NOW USED FOR THE SCHOOL OF ENGINEERING, MONTEVIDEO, URUGUAY.

course of study usually comprises four years, but in some institutions it is extended to five; in others reduced to three. It differs from the North American course in containing less mathematics, physics, and engineering mechanics and in devoting more time to the artistic side of the profession. The increasing popularity of the department is fully justified by the rapid upbuilding of such countries as Argentina and Brazil, where the profession of the architect is highly profitable. In some other countries, where there is no remarkable immigration, wealth is increasing and there is a tendency to replace the old with the new, in material things as well as in modes of thought, and social organization.

Curricula.—The many different ramifications of engineering, each with its different course of study, preclude the reproduction in a work of this scope of representative curricula of all departments, but as indicative of the work there is given below the course in civil engineering in three widely separated schools.

THREE CIVIL ENGINEERING CURRICULA.

FIRST YEAR.

| <i>Rio de Janeiro.</i> | <i>Cordoba.</i> | <i>Habana.</i> |
|---|--|--|
| Analytical geometry Descriptive geometry Infinitesimal calculus Laboratory physics Drawing and graphics | Higher arithmetic and algebra Plane and solid geometry Trigonometry Physics (1st course) Inorganic chemistry Botany (Argentine Bora) Drawing | Algebra Analytical geometry Trigonometry Mechanics Physics (1st course) Geometrical and free-hand drawing |

SECOND YEAR.

| | | |
|---|--|---|
| Theoretical mechanics Inorganic chemistry Elements of organic chemistry Botany Topography Surveying Topographical drawing | Algebra and analytical geometry Physics (2d course) Organic chemistry Topography Architecture Topographical drawing | Calculus Descriptive geometry Inorganic chemistry Physics (2d course) Mineralogy and petrography Geometrical and free hand drawing |
|---|--|---|

THIRD YEAR.

| | | |
|--|--|--|
| Special trigonometry Astronomy Geodesy Applied mechanics and dynamics, kinematics Theory of resistance of materials Graphical statics Geology, mineralogy, paleontology and elements of metallurgy Projections and stereotomy | Infinitesimal calculus Architecture (2d course) Descriptive geometry (2d course) Industrial physics Structural designs Geology and mineralogy Qualitative analysis Ornamental drawing | Theoretical mechanics Geology Surveying Stereotomy, shadows, and perspective Materials of construction Drawing (topographical, structural, and architectural) |
|--|--|--|

FOURTH YEAR.

| | | |
|--|---|--|
| Materials of construction Resistance of materials Solidity of constructions Hydromechanics Roads, bridges, and viaducts Railway construction Machine drawing | Theoretical mechanics Engineering construction Industrial chemistry and metallurgy Hydromechanics Geodesy Engineering and surveying law Hygiene and sanitation Architectural drawing | Geodesy and topography Roads, streets, etc. Resistance of materials Graphical statics Machines Drawing (topographical, structural, and architectural) |
|--|---|--|

FIFTH YEAR.

Architecture
Public sanitation
Machines
Rivers, canals, harbors, and
lighthouses
Political economy
Administrative law
Statistics
Architectural drawing

Theory of machines
Agricultural engineering
Resistance of materials
Railway construction
Industrial electricity
Graphical statics
Projections and stereotomy

Railways
Bridges
Hydromechanics
Contracts, estimates, and en-
gineering law
Astronomy

SIXTH YEAR.

Machines
Applied mechanics
Railway administration
Bridges and roads
Plans and estimates
Resistance of materials
Harbors and canals
Machine design

Class and laboratory.—The relative amount of theoretical and of practical instruction for two of the leading schools gives additional insight into the character of the training given the civil engineer. The figures represent hours per week, and by "practical work" is meant laboratory practice, drawing, designing, etc.

Hours of instruction per week.

| Name of school. | Course. | Year. | | | | | |
|------------------------|------------------|-------|-----|-----|------|------|-------|
| | | 1st. | 2d. | 3d. | 4th. | 5th. | 6th. |
| Buenos Aires..... | Theoretical..... | 12 | 15 | 15 | 14 | 14 | 15 |
| | Practical..... | 17 | 14 | 12 | 11 | 12 | 15 |
| Santiago de Chile..... | Theoretical..... | 17 | 17 | 16 | 15 | 18 | |
| | Practical..... | 18 | 15 | 16 | 16 | 16 | |

In the Chilean schedule the hours of class and laboratory are practically equal. A considerable disparity is shown in the first and fourth years of the Argentine program. In the school of mines of the Catholic University of Santiago the class and laboratory hours are exactly equal—18 for each year. It will be observed that the student's schedule is heavy, as measured by the North American standard, ranging from 19 to 24 "credit" hours per week and from 27 to 36 in total time of class and laboratory. In this respect the comparison should rather be with European practices, where more instruction is given in class and less individual preparation is required outside. It should be remembered also that what are indicated as class periods are usually lectures only.

One will look in vain for shops in a Latin-American engineering school. The institution is not unknown or unappreciated, but it is not for engineers. In the industrial schools of Argentina and Chile shopwork in wood and iron forms the essential feature of the curriculum, and the schools possess good facilities for the work. But shopwork in the engineering faculty is considered out of place.

Enrollment.—The distribution of students among the different lines of engineering is worthy of note as indicating both the inclination of the students and the demand for the different callings. Reference has already been made to the popularity of architecture. In the engineering school of Chile one student in five is enrolled in this department. At Buenos Aires the number is one in seven, but in the smaller schools the ratio will probably average as large, if not larger, than at Santiago. The distribution of all students in the faculty of exact sciences at Buenos Aires was, in 1911, as follows: Civil engineering (6 years), 599; mechanical engineering (5 years), 25; surveying (3 years), 39; architecture (5 years), 122; doctorate in chemistry (5 years), 45; in natural sciences (5 years), 6; in physico-mathematical sciences (5 years), 3. The last course has just been inaugurated, and the enrollment represents only two years. Students enrolled for the various doctorates are probably preparing to teach. The prospect of Government employment is a strong incentive for pursuing certain courses in preference to others. This explains in part the preeminence of civil engineering. For work on harbors, streets, sewers, waterworks, and irrigation projects the national, provincial, and local governments are now in great need of competent engineers. Active railroad building in Argentina, both by the Government and private companies, is another incentive. The matriculants of surveying all expect official appointment. Few students intend to enter the field of industry. This is explained in part by the fact that most large industries are in the hands of foreign corporations, who usually import their engineers as well as their managing personnel. In Chile, where all railroads are State-owned, the output of civil engineers is largely absorbed by the Government for railroad construction. The same has been true to less extent in Brazil. The fact that outside of Government enterprises the large industries are everywhere in the control of foreign corporations, using their fellow countrymen in engineering capacities, is a serious disadvantage to the native engineer. It dwarfs his initiative and forces him into a Government bureaucracy. This reacts ultimately upon the engineering school, making of it a governmental agency for the preparation of certain officials, instead of enlisting it actively for the industrial development of the nation.

CHAPTER IX.

NON-STATE INSTITUTIONS.

The principle of free public instruction is firmly intrenched in all Latin America, and the Government cheerfully supports all grades of schools from the kindergarten to the university. The State does not, however, monopolize instruction. Church and private institutions are tolerated and often encouraged, not only morally, but also financially. In primary education the State schools are the more numerous by far. Except in a very few countries, this grade of education is but little fostered by religious societies. In Brazil there are many private primary schools conducted by individuals. Secondary education, however, receives great attention from the Roman Catholic Church and the teaching orders. Long-established tradition had maintained that this grade of education could best be given in boarding schools, and the church was especially well organized to conduct this type of school. Protestant societies also have bent their energies principally to secondary education. Higher education has been left almost exclusively to the State. In all Latin America there are perhaps not more than three non-State institutions which maintain professional schools (other than ecclesiastical) or a college of liberal arts in the sense that the word college is used in the United States. The reasons for the abstention of the Roman Catholic Church from this grade of instruction are two: First, the rise of the secular faculties of civil law, medicine, and, later, engineering, which became governmental administrative corporations as well as teaching bodies; second, the decadence of the faculty of letters and philosophy and the substitution for it of the enlarged curriculum of the liceo. Excluded from the secular faculties and the State universities, the church directed its energies to the new form of high school and to the episcopal seminaries that rose in the place of the old faculty of theology.

The three non-State institutions are worthy of special notice not only because they form a class apart, but because each has a peculiar history and differs radically from the other two.

Colegio de Nuestra Señora del Rosario.—This institution, founded at Bogota in 1664, has preserved, at least in its outward forms, the marks of the era of its foundation, and corresponds more closely to

the colonial university than any other institution in Latin America. It was never a university in name, but had the power of conferring degrees in civil and canon law, medicine, theology, and philosophy and letters. At present it retains only the faculty of philosophy and letters, but to this extent it is of university rank, and is so recognized by the State. The University of Bogota possesses faculties of medicine, law, and engineering, but in letters and philosophy the Colegio del Rosario has no rival. Theology has been transferred to the archbishop's seminary. The Colegio maintains two courses, the lower affording preparation for entrance to the professional faculties, the higher leading to the degree of doctor of letters and philosophy. It is an institution that corresponds in the form of its organization to the colleges of Oxford and Cambridge. It has its fellows, scholars, and commoners, all of whom live in the college. There are also day scholars.

The college is autonomous, chooses its own officers, faculty, and fellows, and regulates its budget, requirements, and curriculum in accordance with its original constitution and by-laws. The latter were revised in 1893, but more in form than in substance. The only check on the autonomy of the institution is the veto power held by the President of the Republic on the choice of rector. The faculty is selected by the ancient method of *oposición*, and always from alumni of the college, if possible. At the time of its foundation the Colegio del Rosario was handsomely endowed, and during the colonial period it was far-famed for both the excellence of its instruction and its distinguished alumni. Later came dark days. The charter was violated, the endowment dissipated. Finally, the Government recognized its responsibility in the material disaster that had overtaken the institution through civil strife, and restored in part the revenue by the issue of treasury certificates on which it pays to the college a fixed interest.

The Catholic University of Chile.—If the Colegio del Rosario is a religious college of the olden type of organization, the Catholic University of Chile is a church school of a distinctly modern pattern. It has no history connecting it with colonial times. Founded as late as 1888, in one of the most progressive commonwealths of Spanish America, organized after the same model as the State university, and preparing its graduates for secular vocations, it is the one example in South America of modern and local non-State initiative in higher and professional education. The government of the institution is vested directly in the church, which names the rector and confirms the appointment of professors, deans, and other officers. The financial administration also is directed by the ecclesiastical authorities. The institution therefore enjoys little autonomy, but its financial pros-

perity is assured, since the church is pledged irrevocably to its support. It has received also considerable endowment. A splendid building, situated in the principal avenue of Santiago, is in process of erection. In the wing already completed is located the preparatory school. The work of the university proper is still carried on in a building situated in the heart of the city.

Four departments are in operation—law, engineering, architecture, and agriculture. The last-named faculty is in reality two distinct schools, the theoretical and the practical. The theoretical studies cover three years and are followed by a year of practical application, which is done on a farm near the city. The engineering school offers two courses—one in civil, the other in industrial and mining engineering. The first is five years in length, the latter four years, and both correspond very closely to the corresponding courses in the State university. The course in architecture also covers four years.

The Catholic University of Santiago is thoroughly modern in its equipment and general methods. Its material resources have steadily increased, and the new buildings will give it unrivaled facilities. While from a material point of view it is a disadvantage to duplicate the work of the State university, from the point of view of efficiency, the presence of two rival institutions in the same city is a decided stimulus to both.

Mackenzie College.—The third non-State institution of higher education is located at Sao Paulo. In its origin and organization it is exotic, and yet through a generation of usefulness it has become a part and parcel of the new Brazil. For more than 40 years there has existed in Sao Paulo a group of primary and secondary schools founded and administered by North Americans. In 1886 an advanced course of collegiate rank was formed, and four years later it was incorporated with the University of the State of New York. The purpose of the founders was to maintain an institution of higher learning patterned after the North American model for the benefit of Brazilians preparing to do postgraduate study abroad or engaging in industrial and commercial pursuits at home. The faculty is composed largely of Americans, Canadians, and Englishmen. Besides the preparatory course, with its parallel divisions of classical, scientific, and commercial studies, there is the college of liberal arts containing also three sections—classics, general sciences, and civil engineering. A section of agriculture is to be organized next year. There are both day students and boarders. The dormitory privileges are reserved for students whose parents do not live in the city. Women are admitted to the college, but as day scholars only.

The history of the college has been one of continuous expansion and of adaptation to the growing needs of the country. It possesses

a large campus in one of the best parts of the city, several good buildings, and a farm in the suburbs, which is to be the seat of the new department of agriculture. The primary schools, which were the starting point of the college, are located in other parts of the city. They are not a part of the college, but are feeders to the preparatory department. To Mackenzie College is due in no small measure the general interest manifested by the State of Sao Paulo in public education and her preeminence in this particular, among the States of the Brazilian federation.

PART II. SPECIAL EDUCATION.

CHAPTER X.

NORMAL EDUCATION.

A normal school in Latin America is an institution of secondary-school rank. The entrance requirements are never more and very frequently less than those of the regular high school (liceo). In length of term it corresponds also very closely to the secondary school, and it will be observed from the sample curricula given later that the studies, except the strictly professional subjects, are much the same as those of the high school. The institution is in fact merely a normal high school, repeating the academic subjects of the secondary school, with the addition of courses in methodology and of opportunities for practice teaching in the annexed model school. The purpose of the normal school is, therefore, to train teachers for the primary school only. Some graduates secure posts in the lower grades of commercial and secondary schools and through energy and persistence rise to higher positions in the educational system, but, generally speaking, a normal graduate, whether boy or girl, is limited to the common schools. This fact binds the normal school to elementary education and puts a broad chasm between it and regular secondary education and the university.

Admission.—Although the requirements for admission to the normal school are never more than the completion of the State elementary school, or an equivalent examination, the age of the pupils is 14 and upward. Many schools, especially the boarding schools, prescribe a minimum age of 14. The course of study begins very frequently with a "preparatory year," during which period few new studies are introduced; the pupil reviews all the important branches of the elementary school, and is tried out, as it were. If the outcome is not satisfactory to the administration, if the pupil does not show sufficient aptitude for the more advanced instruction, he is dissuaded from proceeding. The preparatory year is justified on the ground that instruction in the lower schools is necessarily very unequal, since some schools are located in towns of considerable importance and others in remote villages. The environment of the children, there-

fore, differs widely both in home and in school, and it is but natural that the educational product should show corresponding inequalities and variations. The first year is expected to mold the newcomers into a responsive and harmonious class. There is, however, another explanation of the *año preparatorio*. It is not only in the United States that teachers in higher schools have a certain disdain, conscious or unconscious, for work done below their own grade. High-school teachers criticize the teaching in the grades, and college faculties will rarely admit that students come to them well prepared. This same educational distrust is prevalent in Spanish America, and not only normal schools but many other special schools begin with a preparatory course.

Course of study.—The curriculum covers a period of years that varies considerably in different countries. The extremes are three and seven years. The usual length of time is four and five years. In Argentina it is four years; in Chile, five; in Brazil, three and four; in Salvador, three; in Uruguay, four; in Costa Rica, seven. As the primary normal is but a specialization of secondary education the length of the course does not depend so much on the amount of professional training as upon the amount of academic instruction that is included in the curriculum.

It is often difficult to estimate the normal course by years. In some schools the professional studies are introduced in the very first year; in others two or three years are occupied with purely secondary studies, and the specific normal subjects and practice teaching are confined to the last year. Especially may this be so in countries where the normal school is a section of the regular secondary school. In Costa Rica, for example, the course is uniform in the Girls' High School (Colegio de Señoritas) during the first four years; then follows the distinctive normal course of three years, and yet the entire period of seven years is commonly known as the normal school. In passing, it may be stated that the combination of normal and high school in a single organization is exceptional, although it might be found highly advantageous in view of the fact that in both the grade of study and age of the pupils are the same. Only the smaller States, for reasons of economy, have adopted this form of organization. The tendency is rather to multiply institutions and confine each to one single line of preparation.

Another reason for variation in the length of the normal course is the amount of schooling the pupil has had before entering. In the majority of States the elementary school embraces six years, and this is the basis of admission to the normal school. But in some the American practice obtains of lengthening the period of elementary education and shortening proportionately the high-school course. In Brazil the full elementary course embraces eight

years; in Uruguay, seven. In such countries it is therefore quite natural that normal education should be shorter than where the preliminary education is limited to six years.

Within each country the normal schools are practically uniform as far as the length and subject matter of the course is concerned. Even in a federal republic, as Argentina, the central Government maintains schools in the provinces, and although there are also State normal schools it is the national system that sets the standard. The curricula given below of the national normal schools of Argentina, Chile, and Colombia represent well the four and five year types. Only a very few countries have three-year schools.

National normal schools of Chile.

| Subjects of instruction. | Hours per week. | | | | |
|---|-----------------|--------------|-------------|--------------|-------------|
| | First year. | Second year. | Third year. | Fourth year. | Fifth year. |
| Pedagogy (theoretical and practical)..... | | | 3 | 5 | 12 |
| Religious and moral instruction..... | 2 | 2 | 2 | 1 | 1 |
| Spanish..... | 5 | 5 | 5 | 5 | 5 |
| Foreign language (generally French)..... | 2 | 2 | 2 | 2 | 1 |
| Arithmetic and algebra..... | 3 | 3 | 2 | 2 | 1 |
| Bookkeeping..... | | | 1 | 1 | |
| Geometry and elementary trigonometry..... | 2 | 2 | 2 | 2 | 1 |
| Natural history and hygiene..... | 3 | 3 | 2 | 2 | 2 |
| Elementary agriculture..... | 1 | 1 | 1 | 1 | 1 |
| Physics and chemistry..... | 2 | 2 | 2 | 2 | 1 |
| History (general, American, and Chilean)..... | 3 | 3 | 3 | 2 | 2 |
| Civics (and for girls, domestic economy)..... | 1 | 1 | 1 | 1 | 1 |
| Geography and cosmography..... | 1 | 1 | 1 | 1 | 1 |
| Penmanship..... | 2 | 2 | 1 | 1 | |
| Drawing..... | 2 | 2 | 2 | 2 | 2 |
| Music (singing, violin, and harmony)..... | 4 | 4 | 4 | 4 | 4 |
| Physical culture..... | 2 | 2 | 2 | 2 | 2 |
| Manual training or household arts..... | 2 | 2 | 2 | 2 | 2 |
| Total..... | 38 | 38 | 38 | 38 | 39 |

National normal schools of Argentina.

| Subjects of instruction. | Hours per week. | | | |
|--|-----------------|--------------|-------------|--------------|
| | First year. | Second year. | Third year. | Fourth year. |
| Pedagogy and psychology..... | 2 | 2 | 2 | 4 |
| Pedagogy (practice teaching)..... | 3 | 4 | 6 | 9 |
| Pedagogy (critical conferences)..... | | | 2 | 2 |
| Arithmetic, algebra, and geometry..... | 3 | 3 | 3 | |
| History (general, American, and Argentine)..... | 3 | 2 | 2 | 2 |
| Geography and cosmography..... | 2 | 2 | 2 | 2 |
| Spanish and literature..... | 4 | 3 | 3 | 2 |
| French..... | 3 | 3 | 3 | |
| Natural history, physiology, and hygiene..... | 2 | 2 | 2 | 2 |
| Physics and chemistry..... | | 5 | | |
| Moral and civic instruction..... | | | | 3 |
| Drawing, music, elementary agriculture, physical culture, manual training, household arts..... | 10 | 10 | 8 | 4 |
| Total..... | 53 | 36 | 31 | 50 |

National normal schools of Colombia.

| Subjects of instruction. | Hours per week. | | | | |
|--|-----------------|--------------|-------------|--------------|-------------|
| | First year. | Second year. | Third year. | Fourth year. | Fifth year. |
| Pedagogy (theoretical)..... | 3 | 3 | 3 | 3 | 3 |
| Pedagogy (practical)..... | 3 | 3 | 3 | 3 | 3 |
| Religion..... | 3 | 3 | 3 | | |
| History (sacred and ecclesiastical)..... | 3 | 3 | 3 | | |
| History (Colombian and general)..... | | | | | 6 |
| Spanish (grammatical, rhetoric, and literature)..... | 6 | 6 | 6 | | |
| Arithmetic, algebra, and geometry..... | 6 | 6 | 6 | 3 | |
| Geography and cosmography..... | 3 | 6 | | | |
| Physical geography..... | 3 | | | | |
| Bookkeeping..... | | | | 6 | |
| French..... | | | | 3 | 3 |
| Physiology and hygiene..... | | | | 3 | 3 |
| Physics..... | | | | 3 | 3 |
| Chemistry..... | | | | 3 | 3 |
| Natural history..... | | | | 3 | 6 |
| Music, drawing, penmanship, and calligraphy..... | 15 | 15 | 15 | 15 | 15 |
| Total..... | 45 | 45 | 45 | 45 | 45 |

Observations on curricula.—The great number of hours of class work, especially in the Colombian and Chilean systems, indicates that little preparation is expected for the lessons, and that the recitation period is practically all the time given to the subject. This is more in accordance with European methods in secondary instruction than North American practices. The large number of subjects carried simultaneously by the student is another European characteristic of the Chilean schedule, in which there are no less than 16 or 18 different studies per week. A similar system obtains in the high schools of many countries. The effect, according to the North American view, is to dissipate the pupil's energies, to deprive him of the power, or inclination, to think deeply into any subject, and to make him content with absorbing knowledge in the classroom instead of encouraging original thinking.

In the curriculum of all the best normal schools, a distinct place is now assigned to handwork—manual training for the boys and household arts for the girls. These subjects are carried down into the primary schools, and their presence in elementary instruction in almost every country is one of the most hopeful signs in Latin America. It will be observed that in two of the curricula presented elementary agriculture is also included. This subject is also found very generally in the Latin-American normal school, and is another indication of the modern spirit. A study which at first glance seems to have no utilitarian value for the normal student, since he is preparing specifically for teaching in the primary schools, is that of a foreign language. But it is contended that Spanish is relatively poor in pedagogical literature and that the student should be given the power to read methodology in at least one other tongue. The con-

tention is perhaps more valid for Portuguese than for Spanish, but even here its strength is weakened by the fact that a Brazilian can read Spanish understandingly without study, so great is the similarity between the two languages. The study of modern foreign language in the primary normal school can scarcely be justified on the ground of utility. It, of course, has its cultural and linguistic value, and this is greater in Spanish America since neither normal nor secondary schools include Latin in their curricula.

It will be observed that elementary instruction is given in all the common sciences. Botany, zoology, etc., are grouped in one course, and physics and chemistry joined in another. Methods of instruction are much the same in both. Except in Argentina, individual laboratory exercises are little used. The teacher develops the subject with or without the aid of a text, and in the biological sciences uses for illustration pictorial charts and objects from the school museum. In physics and chemistry, the instructor performs experiments at the desk in the presence of the class, and the following day requires that they be described by a pupil or reproduced. A pupil, therefore, has little opportunity to handle apparatus and materials. He is expected merely to reproduce. No new experiment is given him to perform by the combination of others previously learned. In failing to provide individual and quasi-original laboratory exercises, the school misses a fine opportunity to develop the expression of spontaneity and initiative, while the reproductive form of experiment tends to develop the memory habit of recitation.

Method and examinations.—In many normal schools few or no textbooks are used. The teacher develops or dictates the lesson, and the pupils take notes or copy the dictation. This method is especially common in Chile and in countries that have received their organization directly or indirectly from Chile. In Argentina and other countries where North Americans were called to organize the first normal schools, textbooks are regularly employed, and in addition much use is made of the reference library. The two methods can be traced pretty accurately by the greater or less number of class hours per week. The textbook presupposes more individual preparation, and the class hour becomes more of a recitation and less of an exposition. The virtual abolition of regular class texts came about in some countries through a laudable desire to overcome the mnemonic habit that marked the old schools. But the root of that evil was not in the text, but in the method of the teacher, and the substitution of notes for text was only a palliative and not a cure. The evil still exists in many schools and is fostered by the importance placed upon the final year-end oral examinations common to all forms of education in Latin America. In this matter the normal schools are, as a rule, far in advance of others since they have par-

tial tests, oral and written, at intervals throughout the year, and the final examination is often both oral and written. The latter, which admits of more specific questions and in which time can be allowed for resolving problems and deducing original conclusions, takes the burden of the examination off the memory and throws it upon the reasoning powers, where it properly belongs. Notwithstanding these reforms the year-end oral examination is an overshadowing feature in Latin-American education. The student is accustomed to it even in the grades, and even when modified as it usually is in the normal school it is still all-important in the eyes of both teachers and pupils. In oral examinations the examiners do not ask specific questions, but permit the student to talk on one or more topics selected at random from the year's study on the subject.

Organization and scholarships.—As concerns their internal organization, the primary normal schools of Latin America are of two classes, the day school and the boarding school. There are also a few examples of a third type, where the pupils live outside, but have the midday meal in the school (semi-internado). This type is to be found only in large cities. Some countries, as Chile and Peru, adhere very closely to the boarding school, whether for boys or girls. Others, as Argentina, and Uruguay, have only day schools, where pupils not living at home lodge and board in houses approved by the school authorities. The problem of extramural control of pupils in such schools is lessened by a custom followed in all countries, which requires a pupil not living at home to have in the town where he attends school a temporary guardian (apoderado), who stands in loco parentis, and to whom the school looks to guarantee the proper conduct of the pupil outside the classroom.

Formerly the boarding-school type of normal school was more universal than at the present day, and the system developed naturally from the manner in which the schools were supplied with pupils. There are few private normal schools in Spanish America to-day, and when this type of education was introduced there were none. The first schools were founded by the State and were considered in much the same light as a military academy. In the latter the boy is educated, clothed, fed, and trained at State expense for a specific public service. In return he agrees to serve the State for a fixed period of years. In the normal school the boy receives a different education and training, but it is none the less for State service. Consequently it seemed only just that the Government should support him during these years of preparation. In the United States such a system obtains in the national military and naval academies, but has never found a place in normal or other schools. The difference in practice is partly explained by the fact that normal education in the United States came gradually in the natural development of general educa-

tion, while in Spanish America it was introduced and fostered by the Government. It was a distinct, conscious agency employed by advanced and patriotic statesmen to foster the cause of primary education. Under such conditions, it seemed most natural to prepare the teacher in the same way as the State prepared the soldier.

Once established the system of State scholarships in normal schools has continued unquestioned to the present day. If it is a boarding school, the pupil receives in the school itself lodging and food in addition to free instruction and school supplies. In day schools the State scholars are granted a small monthly pension—just sufficient to meet necessary expenses. In return for this scholarship, the pupil, whether boy or girl, contracts with the Government, with the consent of parent or guardian, and furnishes bond that he will serve the State as a primary teacher during a fixed number of years (varying from four to six) in whatever school he may be assigned or reimburse the State for the expense incurred. Such a contract is possible in countries which are administrative units, as are all in Latin America, except Argentina, Brazil, Mexico, and Venezuela, and even in these countries there is a tendency to centralize the administration of primary education. In other countries the same central authority that establishes and maintains the normal schools supports the elementary schools and appoints the teachers.

It is reported that the contracts to serve as teachers are not always fulfilled, and this is doubtless true in some countries. The graduate may develop an inclination to follow another vocation, or none at all. In recent years commercial positions have become much more attractive from the point of view of the remuneration offered than the profession of primary teacher. Some normal graduates have been tempted to desert their calling and to break faith with the Government. In certain localities this breach of contract has been winked at by the authorities.

Another instance of irregularity sometimes occurs in the process of admission to the schools. The scholarships are distributed among the administrative units of the district where the normal school is located and are awarded on competitive examination. In some countries political officers have a preponderating influence on the awarding board, and sometimes the award is made on other grounds than those of merit. These are evils incident to the system, but in the progressive countries such irregularities are rare.

In the early days of the normal school practically all pupils were State scholars, but that is no longer the case. Pupils do not often come from a distance unless they win a scholarship, but young men or women who live in the locality in which the school is located take advantage of the opportunities it presents to prepare themselves for the profession of teaching. Instruction is either entirely free

or the fees are merely nominal. It may almost be said that the normal school is the people's high school, since the regular secondary school is organized specially to afford preparation for the university.

Salaries.—The system of free State education, including State scholarships in the normal schools, tends to make the teacher's salary small. With a corps of educational soldiers, so to speak, at its command, the State can set a wage that is less than what the young man or woman would command in other pursuits. Especially is this true in countries that have experienced a rapid commercial and industrial development. The bald statement of the teacher's stipend conveys but a faint idea of his economic position, and this is especially true in Latin-America where the cost of living varies greatly, not only as between countries but also as between localities in the same country. In Buenos Aires the normal graduate just entering the profession receives \$768 per annum; in Rio de Janeiro, \$600; in Chile, \$300 and lodging (not including board). Lodging is of course a variable item, and when commuted in money serves somewhat to equalize the variations in cost of living in different localities.

So marked is the discrepancy between remuneration in commercial and industrial pursuits on the one hand and teaching on the other that everywhere men are disappearing from the profession of primary teaching. Where formerly there was a plethora of candidates for every vacant scholarship, there are now in some regions no candidates at all. A distinguished educator in Chile has said: "The State begins at the wrong end; it pays its pupils, but does not remunerate properly its teachers." The system has doubtless much to do with the present low salaries, but the same condition exists in a degree in other continents and can be ascribed in large part to the unprecedented industrial advance of the age.

Social position.—The social status of normal-school pupils and of primary teachers in general is an interesting study in Latin America. It is difficult to give a just appreciation of the situation, as it depends not only on general social conditions but on the difference in school systems. Latin-American society, while in many ways most democratic, still contains much of the medieval caste spirit. Especially is this true of countries and regions that have not felt the full tide of modern industrialism. In these places wealth is almost wholly in land, and it is a well-known fact that a landed aristocracy is the most persistent and the most exclusive. The distinction therefore between rich and poor, landlord and peon, is very marked. The advance of industrialism is breaking down class lines in some States, and particularly in the great centers, but in many regions they are still strong. This tends to confine a large percentage of the enrollment in many normal schools to the humbler classes. Such

young people come from homes in which there is little culture or refinement. The stock of culture that they will take with them into their profession must, therefore, be acquired almost wholly in the school. No matter how excellent the institution, it will be admitted by all that it has a difficult task to perform and that, while the young teacher may go out to his work scholastically competent, he must necessarily lack other qualities which are in the art of teaching scarcely less important than knowledge. This is all the more unfortunate since these teachers go forth to preside over children who in their turn come from the humblest homes, and who must get in the school itself almost all the notions of culture and refinement that they will ever get.

Primary school and liceo.—In the United States the free public school is essentially a democratic institution. It is patronized very generally by all classes of society. Its only rival is the expensive private school. In some countries of Spanish America, in addition to private and church schools, there exist two classes of free public schools, the elementary school for the people and the liceo with an adjunct primary school for the upper classes. One result is to put the teacher of the people's school in a distinctly lower class, and as the graduate of the normal school has this future to face, its clientele is drawn naturally from the less cultured ranks of society. If there were many graduations in society the effect would not be so marked, but as stated above there are in reality but two, the high and the low.

A restriction.—Another factor which operates against the social status of the primary teacher, and consequently determines more or less the clientele of the normal school, is the fact that the primary teacher, whether man or woman, is practically bound for all time to that one grade of teaching. Since his scholastic training is merely a modification of secondary education, he has little opportunity for rising through successful experience to higher ranks in his profession. In all countries the normal school is jointed in administration with the elementary school, while the secondary school is linked with the professional schools of law, medicine, etc.

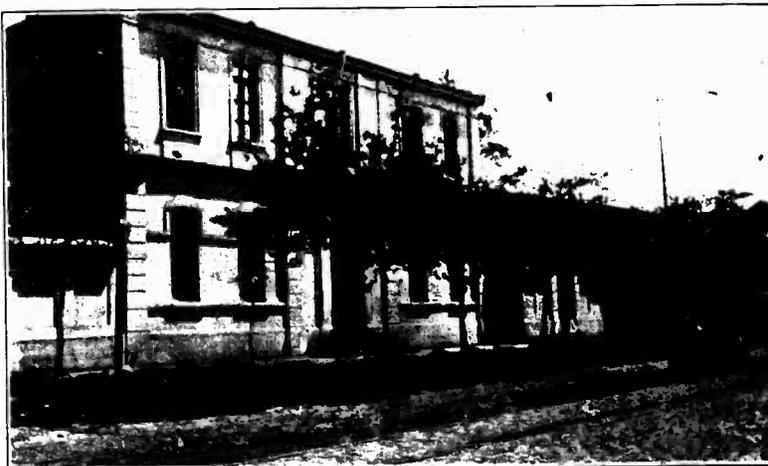
Personnel.—The faculty of a normal school consists of a director, subdirector, secretary, and professors. The director is frequently a foreigner. Since the normal school was a direct and ready-made importation, it was absolutely necessary at first to import the directing personnel as well if the institution was to be a success. The first normals of Argentina, Uruguay, and Brazil were presided over by men and women from the United States; Chile called Germans to this work; Peru, Bolivia, Salvador, and others brought in Frenchmen and Belgians. In those countries which were the pioneers in normal education the foreigner has almost disappeared, since there



A. NORMAL SCHOOL NO. 1 FOR WOMEN, BUENOS AIRES, ARGENTINA.



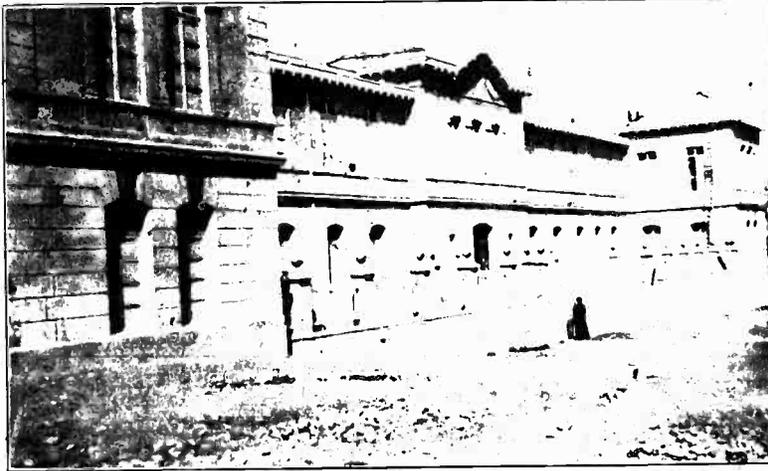
B. FÊTE IN THE MODERN LANGUAGE NORMAL SCHOOL, BUENOS AIRES.



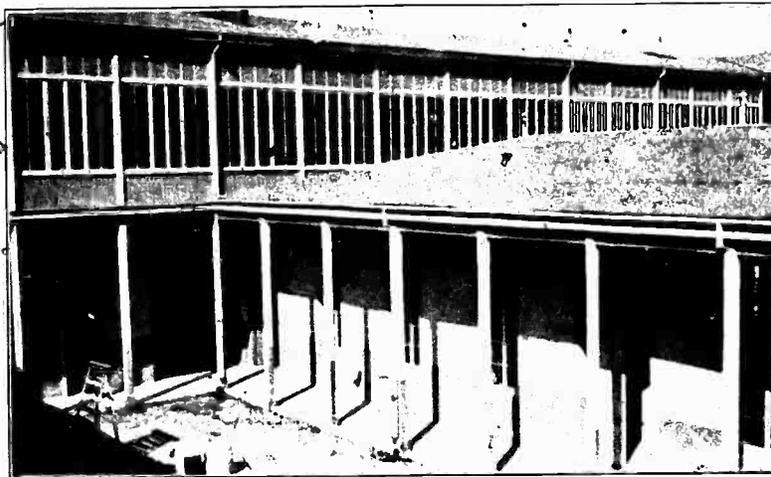
I. FAÇADE OF NORMAL SCHOOL FOR GIRLS, NO. 3, SANTIAGO, CHILE



II. GROUP OF STUDENTS OF THE NORMAL SCHOOL FOR GIRLS, NO. 1, SANTIAGO, CHILE.



4. FAÇADE OF NEW NORMAL SCHOOL FOR GIRLS, LA SERENA, CHILE.



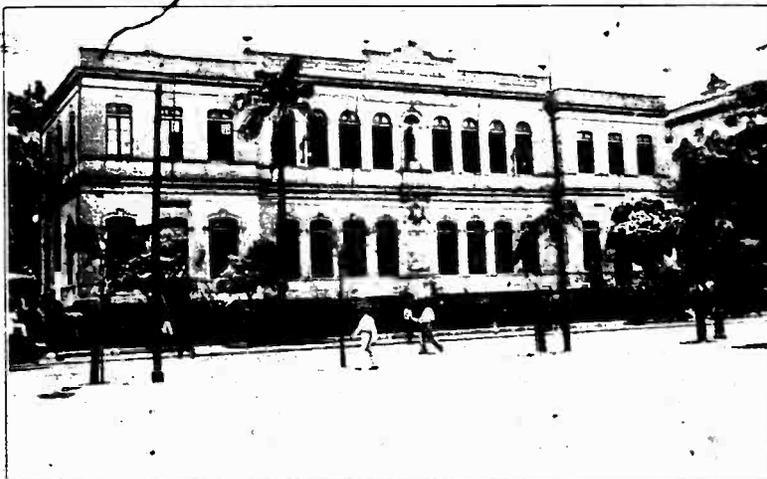
5. A PATIO IN THE SAME SCHOOL.



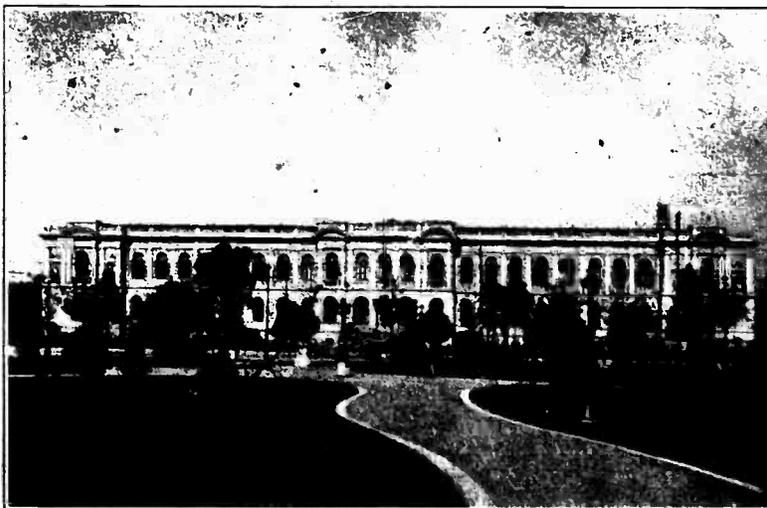
A. FRONT VIEW OF THE NEW NATIONAL NORMAL SCHOOL, CORDOBA ARGENTINA.



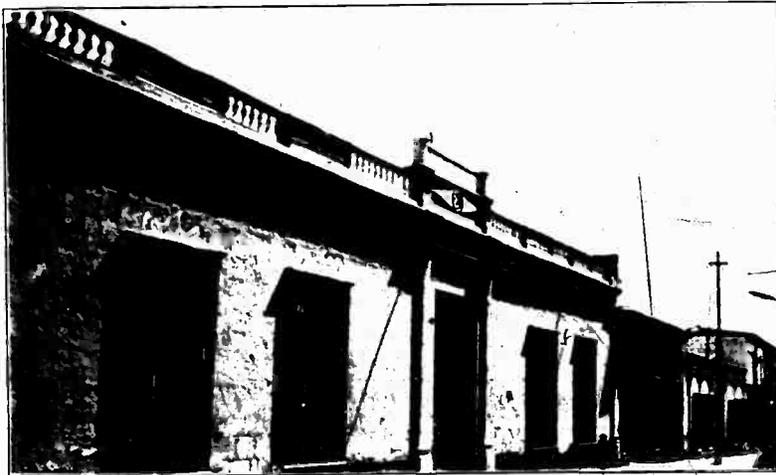
B. REAR VIEW OF THE SAME BUILDING.



I. NORMAL SCHOOL, RIO DE JANEIRO



II. NORMAL SCHOOL, SAO PAULO, BRAZIL



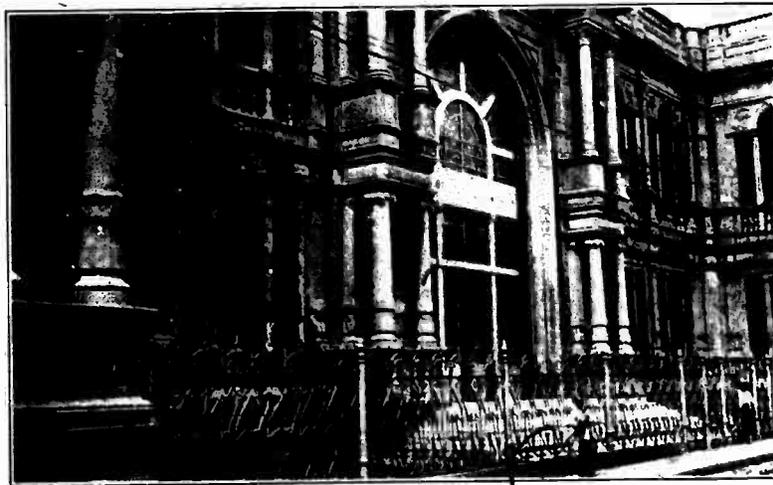
A. FAÇADE OF THE NORMAL SCHOOL, AREQUIPA, PERU.



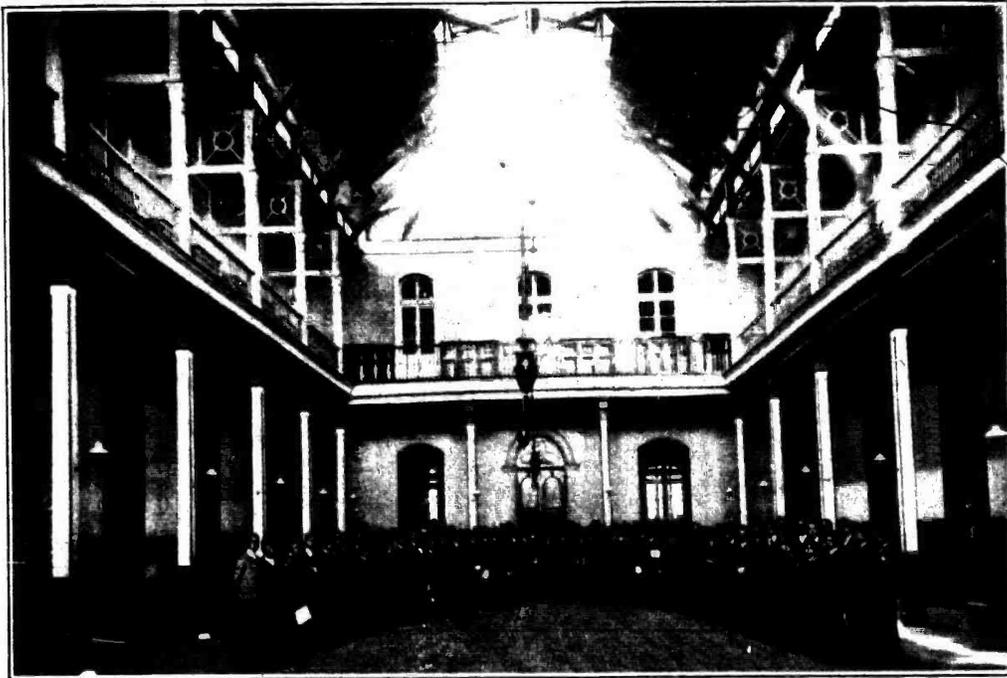
B. PATIO OF THE SAME SCHOOL.



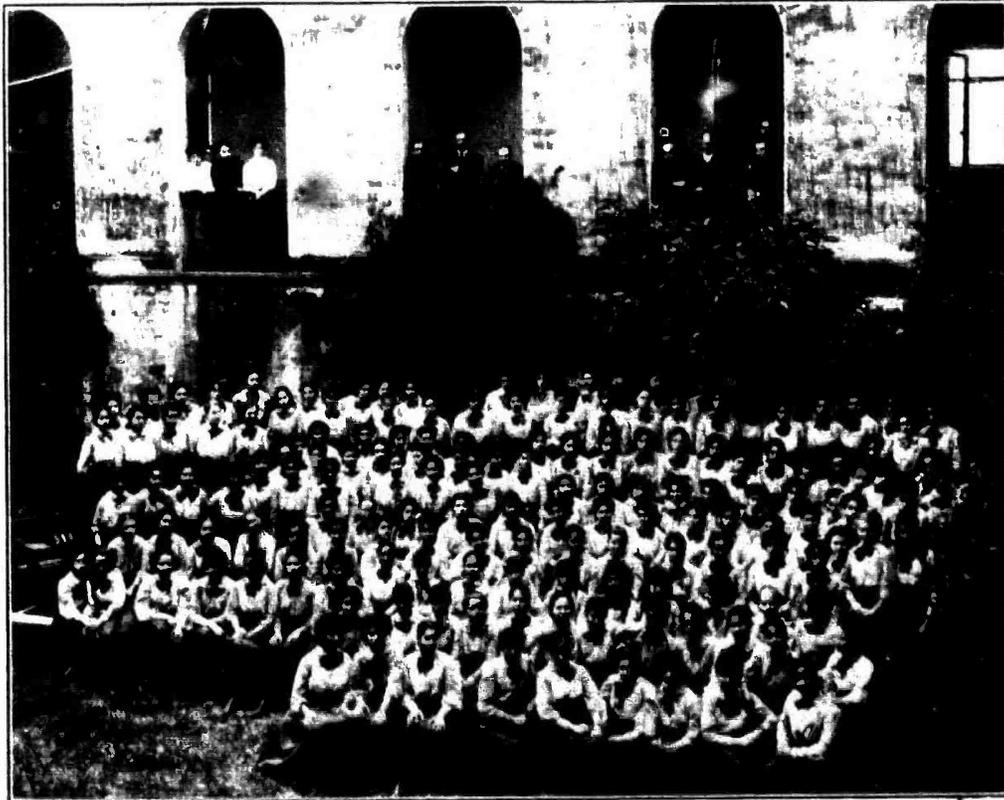
A. HIGH AND NORMAL SCHOOL FOR GIRLS, GUATEMALA CITY.



B. MAIN ENTRANCE OF THE PROVINCIAL NORMAL SCHOOL, CORDOBA ARGENTINA



A. A COVERED PATIO IN THE MEN'S NORMAL SCHOOL, CHILLAN, CHILE.



B. A GROUP OF STUDENTS, SUPERIOR COLLEGE FOR YOUNG LADIES, SAN JOSE, COSTA RICA.

have grown up generations of native-born teachers, trained in the same methods and familiar with the best ideals in educational science. The change from foreign to native directors has come gradually, and in most cases without friction or professional rivalries. Many of these first directors are still kindly remembered and honored. One can not visit the famous normal school of Parana without hearing the name of George A. Stearns, its enthusiastic founder. In the vestibule of the school of La Plata stands the bust of Mary O'Graham, for long years its principal, while another American woman long in the service of Argentine schools is spending in her adopted land the declining years of a most useful life, a pensioner of the Argentine Government.

Secretary and professors.—The secretary of the faculty or, rather, of the school, tabulates and preserves the attendance record and the monthly or quarterly classification of students as reported by the professors, and also the results of the formal oral examinations at the end of the year. Another duty is to keep a record of the attendance of the professors themselves at classes. Each subject has its professor, if indeed it does not have two or more. This practice, common in Latin America not only to normal, but to all schools above the elementary, necessitates many teachers, even for a small school. The disadvantages of this system have already been portrayed in the chapter on university organization. Normal schools suffer less from the practice than some other types of education, because of the relative homogeneity and compactness of the curriculum. The basic subjects of psychology and pedagogy, together with the practice of teaching, are taught by the director, subdirector, and principal of the practice school, who give all their time to the school. Certain other subjects, such as mathematics and the mother tongue, are continued through several years and thus afford sufficient work to require all the time of a teacher. This furnishes a group of teachers who form the real faculty of the school and mold its spirit. Certain other subjects must be assigned to teachers from the outside, who divide their time between various schools in the same town or are engaged in the practice of a profession, law, medicine, pharmacy, etc. The sciences, foreign languages, history, and civics are usually provided for in this way, and not infrequently mathematics is subdivided, one professor teaching only arithmetic, another algebra, etc.

The itinerant professor, whether a teacher by profession, or lawyer, physician, or follower of some other profession, who teaches as a side issue, comes therefore to the normal school for only one or two lessons a day, and the problem of his attendance and punctuality is often more perplexing than that of the pupils. In the secretary's office is a register which each teacher signs daily before beginning

or after finishing his class. He also indicates in a parallel column the topics of the day's lesson, not only in order to furnish a record of the progress of the class, but also for the benefit of the director, in case a substitute teacher must be provided. For, as might be expected, a professor who divides his time between various institutions, or a man engaged in another profession, frequently finds it necessary or convenient to absent himself from a lesson.

Practice teaching.—The practice school is organized as a regular primary school with a teacher in charge of each grade, who does all the teaching of the grade except such subjects as music, physical culture, etc. These are commonly taught by the teachers who do the corresponding work in the normal school itself. The two schools are almost invariably to be found in the same building. The director is the administrative head of both and is aided in the lower school by a director of practice teaching. So close and organic is the union of the two departments that the entire institution, the *escuela normal* and the *escuela de aplicacion*, or *escuela anexa*, is known as the normal school. The fact that both are State institutions, depending directly upon the minister of public instruction, prevents the development of any discordant relations. Everywhere the *escuela de aplicacion* is considered the best of the primary schools, and parents are eager to have their children admitted. Besides, where there is competition for entrance to the normal classes, the child who comes up through the practice school has a better chance for admission, and, on the other hand, the fact that the future clientele of the normal classes is to be formed in the *escuela anexa* makes the direction of the school more interesting and more important to the institution as a whole.

The amount of actual practice teaching done by students varies widely, and, indeed, it is difficult to gather accurate data on the subject. Observation in the classroom and actual practice are grouped together in answer to inquiry and on class schedules. In general, it may be said that observation and practice are considered of almost equal importance. The longer course of the normal school, in comparison with normal schools in the United States, makes it possible, even convenient, that much more time be allotted to observation. A very common practice is for the whole class in the upper years to be present one hour each day in the *escuela de aplicacion* while one of their number gives a lesson. By this method all observe an hour daily, but each student does not actually teach more than an hour in two or three weeks, the frequency depending on the size of the normal class. Still, in the curriculum and class schedule this will be called daily exercise in practice teaching.

Rented buildings.—In considering the school buildings a sharp distinction must be made between those that are State owned and

those merely rented and remodeled, more or less thoroughly, to adapt them to school purposes. The North American who studies Latin-American education is surprised by the large number of rented buildings used for primary and secondary as well as for normal schools. In the United States a building constructed for the purpose almost invariably precedes the school, if it is a State institution. If ready funds are not available, the State or community bonds itself for the necessary amount. This practice is not usual in Latin America. If the necessary money is not on hand, the authorities lease temporary quarters. Even in the countries most advanced in the matter of education the number of buildings rented for school purposes is very large, perhaps even larger in the more enterprising States than in the others, for the very reason that greater interest is taken in public instruction, and it is urged that the school must begin even if the building is lacking. The custom is not as incongruous as it would appear in the United States, on account of the difference in architectural types. It is not a business building that is rented for the school, but a residence. A Spanish-American house is invariably built about a patio around which runs a gallery and on which all rooms open. If the house is two stories the gallery is also, and the stairway is not in the house, but connects the galleries. Public buildings are constructed on the same model, so that in general a residence differs little in architectural arrangement from a school-house built expressly for the purpose. Good residences are large, the rooms spacious, and ceilings high; consequently, in many respects they are not unsuited to school uses, and the milder climate permits the opening of all doors and windows. Their chief disadvantages consist in the fact that there are openings on one side only and these under a roofed veranda, so that even with doors and windows open ventilation and light are often insufficient.

Financial disadvantages.—The policy of leasing school property instead of building may well be questioned from various standpoints. Financially, it is a serious drain on the treasury, for the rent is necessarily high and repairs and alterations are always required to adapt the house to its new use. If the lease does not run a long time, it becomes necessary to remove the school to a new location and repeat the process of installation. The expenditures of a few years in rent, removals, and alterations would suffice to construct a good building. Aside from the question of providing better hygienic conditions, a school building owned by the State confers on the institution a dignity that is all important in countries battling to extend the advantages of education among a population which is sometimes indifferent or even hostile to the movement.

State-owned buildings.—The State-owned normal buildings are, as a rule, excellent. This class of schools has been especially favored by the Government, in the belief that good normal training is the

basis of progress in public education. Latin America has profound respect for things modern and for things imported. The normal school was in both categories, and to it the nations, in their earnest desire to educate the masses, pinned their faith. No matter what was its grade of efficiency, the normal school was a term to conjure by.

As a result of this devotion the buildings that were erected were worthy of the purpose for which they were designed. For day schools the plan is simple. If the building has two stories, the normal classes use the upper story and the practice school the lower, and unless the school is large the one patio suffices. In countries where the boarding normal school is the custom the building is necessarily much larger, more complicated, and the outlay on the part of the State far greater. The usual plan is a two-story structure surrounding two patios. Between and separating the patios is the assembly hall, which faces the main entrance. Around one patio are the normal classrooms and around the other the practice school-rooms. Each school has thus its own patio for light and recreation, and as they are not uncommonly roofed with glass they are available in all weather. The second story is devoted entirely to lodgings. The refectory and kitchens are in the rear and adjoining are the servants' quarters. The European type of dormitory is everywhere in vogue, i. e., a large hall containing many beds. Each dormitory is presided over by an inspector, who has a cubicle at one end of the hall. The dormitory is, therefore, sleeping quarters and nothing more. Pupils study in the evening as well as during the day in their respective classrooms. The hygienic conditions are good, shower baths are provided, and although the building is constructed on the patio plan, unlike the private residence in a city block the rooms receive light and air from two sides, since the edifice stands apart.

Equipment.—In the matter of equipment there is a wide disparity, not only between schools but also between different features in the same institution. The administrative offices are always well furnished, often even handsomely. In the schoolrooms not much effort is made to beautify the surroundings. The furniture is, for the most part, imported and consists of desks of the pattern used in elementary schools in the United States. Double desks are rapidly giving way to single ones. Blackboard space is usually far too limited, if judged by North American standards. This arises from the prevailing method of teaching, which directs the teacher's entire attention to one pupil at a time and leaves the rest of the class to listen only.

The library is perhaps the weakest feature of the normal school of to-day. Often there is no room set apart for books and for general reading. A few works of reference and a scant collection of peda-

gical treatises in the director's office comprise the library of many schools. Where there is a regular library room the books are not, as a rule, easily accessible to the student. The library in such cases is almost useless and fails to give to the young the desire for good and useful reading. A prominent Chilean educator has said: "We teach the children how to read, but do not teach them to want to read." This statement does not apply with equal force to all countries. Argentina, among others, is striving to accustom the pupil in the elementary grades, as well as in the normal, to regular and efficient work in the library.

Laboratories.—Considering the method by which the experimental sciences are usually taught, the laboratory equipment is sufficient. Indeed, in many cases, it is abundant. As already noticed in the paragraphs treating of curriculum, the method, except in Argentina and one or two other countries, excludes individual laboratory exercises. As all the experimentation is done by the teacher at the desk, a single set of apparatus is all that is needed. Nearly all normal schools are so provided, and many possess apparatus of a delicacy and complexity far exceeding the needs of a primary normal school curriculum in these branches.

School museums.—Latin-American normal schools, as well as schools of all grades, make much of their museum of natural history. No matter how humble the school, it has the beginnings at least of a collection. Teachers, pupils, and local scientists make donations, and the older institutions often have collections of great value and utility. A room is always set apart for the museum, and much use is made of the collections in teaching zoology, botany, etc. There are also good collections of charts for instruction in physiology, history, and geography. The Latin-American teacher has great respect for all these teaching aids, and the more expensive or complicated the apparatus the greater is his confidence in its efficiency. Graphical representations are much used in teaching the facts of history, geography, and science. This objective method of presentation harmonizes well with the expository method of instruction so generally employed, but on the other hand an objective study of scientific processes which is secured by individual laboratory exercises is practiced in the normal schools of very few countries.

HIGHER AND SPECIAL NORMAL EDUCATION.

Primary normal schools organized and supported by the State are to be found in every country of Latin America. Even the smallest nations maintain at least one, and in the larger and populous countries they are numerous. Primary education has profited enormously from them, and the progress of the elementary schools can be gauged very fairly by the proportion of normal schools to the total popula-

tion. Not all primary teachers are normal graduates, but the latter are numerous enough in the most progressive countries to form a large element of the teaching corps, and they have established the distinct profession of primary teacher. Men and women untrained in the normal school are put in charge of schools, especially in the rural districts, but the *normalistas* are regarded as the only real primary teachers. They are the regulars; the others are militiamen.

Teachers in secondary schools.—It is only in primary schools, however, that there exists a real teaching profession. In Chile considerable progress has been made toward preparing teachers for secondary education, but in all other countries there are few professional teachers in the higher schools. The cause and effect of this situation have already been analyzed in the chapter on university organization. As far as the university is concerned, there seems little promise that present practices will be changed in the near future. In secondary education the need of trained professional teachers is universally recognized and at least two States are trying to meet the emergency through advanced pedagogical training. There are two institutions which are avowed higher normal schools and two others that perform this function without bearing the name.

The Chilean Normal College.—The oldest normal school of college grade in South America is the Instituto Pedagógico of Chile, which was opened for instruction in April, 1890. In its modern organization the university of Chile contains theoretically a faculty of philosophy and letters, but the only section of the faculty that has been organized is the normal college. The Republic realized that its energies and resources could be better utilized in training a skilled professorate for its secondary schools than in fostering general literary culture. The latter might be ornamental, but the former was distinctly useful, and the results obtained by the normal college in the 20 years of its history have fully justified the policy. The institution has been the fountainhead of the national educational system. It has prepared teachers not only for the secondary schools but also for the primary normal schools, and through this channel its influence has extended to the humblest grades of public instruction.

Foreign professors.—Coincident with the creation of the school, the Government contracted with the Prussian Government for the services of six capable educators to direct the institution and to fill the more important chairs. The original contract was for a period of five years. At the end of that time some professors renewed the contract, others returned to Prussia, but in their stead new men came out, and there have always been from four to six Germans on the teaching staff. This group of foreigners has been considered the essential nucleus of the faculty. Chilean educators, many of them

trained in the school itself, have been added from time to time to the staff, and the director has often been a Chilean, but the dominant influence has remained German. It is worthy of note that two of the original Prussian contractants are still members of the faculty, and one of them is now acting director.

General plan.—The policy of the Instituto Pedagógico has been to give the student accurate, thorough, and scientific instruction in the branches that he is preparing himself to teach, and at the same time instruct and train him in modern scientific methods. The departments of instruction include advanced study in all subjects that form a part of the curricula of secondary and normal schools, such as Spanish, French, English, mathematics, physics, chemistry, botany, physiology, zoology, history, civics, geography, psychology, pedagogy, and methodology. For the purpose of furnishing facilities for practice teaching, two liceos—one for boys, the other for girls—are maintained in close proximity to the institute, and the professor of psychology is the titular head of the liceo for boys.

Coeducation.—When the Instituto Pedagógico was founded the students were all young men. No provision was made for women and, indeed, their advent was not thought of. At that time the State did not concern itself with the general education of girls beyond the primary grades, and naturally there was no necessity of preparing women secondary teachers. There were needed, however, women teachers for the girls' normal schools. A few young women asked admission to the institute. It was granted under certain restrictions and with some protest. It was the first instance of coeducation in Chile outside the lowest grades of the primary schools. Later the State began the foundation of high schools for girls. For these there were required ever-increasing numbers of women teachers, and the Instituto Pedagógico was the logical place for their preparation. Young women became more and more numerous in the school, and at present they outnumber the young men three to one.

Groups of studies.—As the object of the school is to prepare the graduate to teach a certain branch, or two or more related branches, free election of studies as practiced in many American colleges would not be compatible with the aims of the institution. It is not a college of liberal arts, but distinctly a higher normal school. The curriculum is, therefore, divided into groups, and the student's election privileges are restricted to choosing his group. Within the group the studies are definitely prescribed. Psychology, logic, ethics, political science, pedagogy, and methodology are common to all groups, as is also the requirement of practice teaching and observation.

The groups are seven in number, each designated by the study or studies that constitute its major. The course of study comprises

four years for each group, making about 60 year-hours, exclusive of practice teaching. Of these, 15 are common to all groups. The Spanish, French, English, and German groups require 25 hours in the major study and about 20 in another language. The history-geography group also gives 25 hours to the two majors and demands 20 hours in a foreign language. In the physico-mathematical and chemico-biological science groups no language (not even Spanish) is required, and the course is more compact and specialized. In the first, 20 hours are devoted to mathematics and 21 to physics; chemistry receives 4 hours. In the second, the biological sciences receive 22 hours, chemistry 18, and mathematics 8.

Students are graduates of a high school before entering the institute. Consequently, the work of the latter corresponds very closely, both in the grade of the studies and in the time required for their completion, to the North American college.

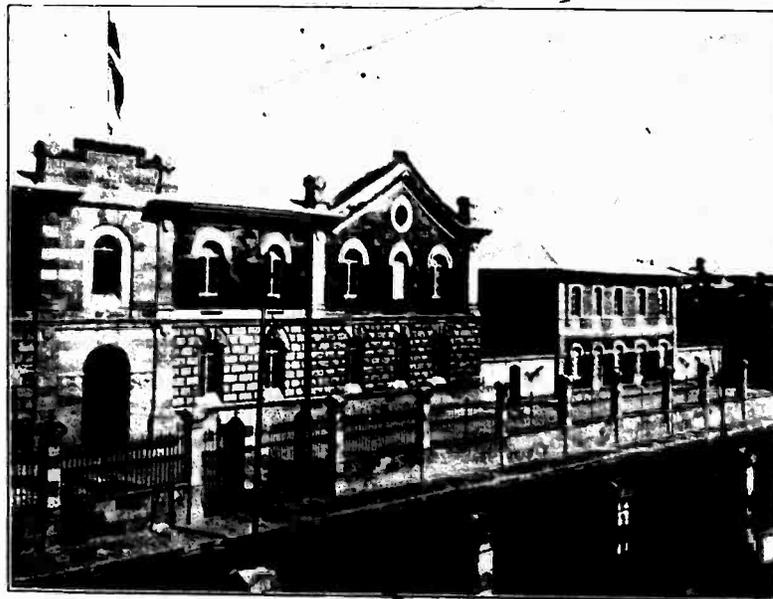
Latin.—A subject which is common to the language groups is Latin. In Chile, as in many other Spanish-American States, Latin and other dead languages are not only omitted from the curriculum whether it be a primary, secondary, or higher school, but are even forbidden by the law of the land. The German educators who formulated the curriculum and policy of the Instituto Pedagógico contended that serious instruction in Spanish and other Romanic languages required a certain familiarity with the parent tongue, since a just appreciation of the forms and syntactical structure of these modern languages could only be gained by a knowledge of the historic processes that changed Latin into the Neo-Latin languages. To meet this argument, Latin was introduced into the institute, although proscribed elsewhere, and a three-year course is given in the Spanish and French sections and one year in the English and German sections. The course is limited in scope, is chiefly grammatical, and is designed solely to serve as a basis for the historical study of modern languages.

Building and equipment.—The Instituto Pedagógico occupies a good building of two and three stories, which, in most respects, is well adapted to the work. The classrooms are ample and comfortably furnished. The library contains 3,000 volumes carefully chosen and suited to the work of professors and students. It only needs better cataloguing to adapt it to the needs of the institution.

The laboratories are excellent, and ample provision is made for individual laboratory work on the part of the students. The departments of history and geography, which are combined under one professor, are well equipped with a very large collection of maps, charts, and a special library. The most recent acquisition in the line of scientific equipment is a complete laboratory of experimental psychology. The liceo for boys, which constitutes a practice school



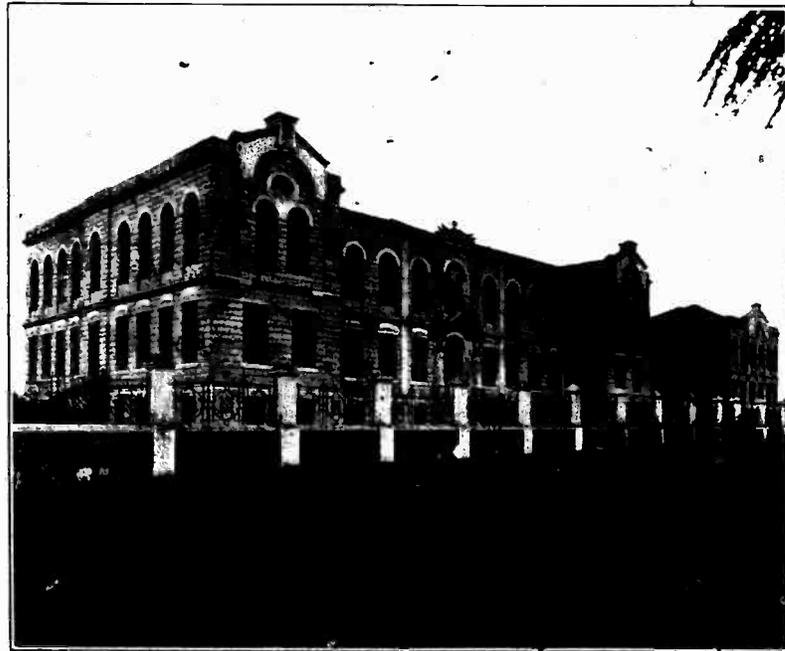
A. KINDERGARTEN, SAO PAULO, BRAZIL.



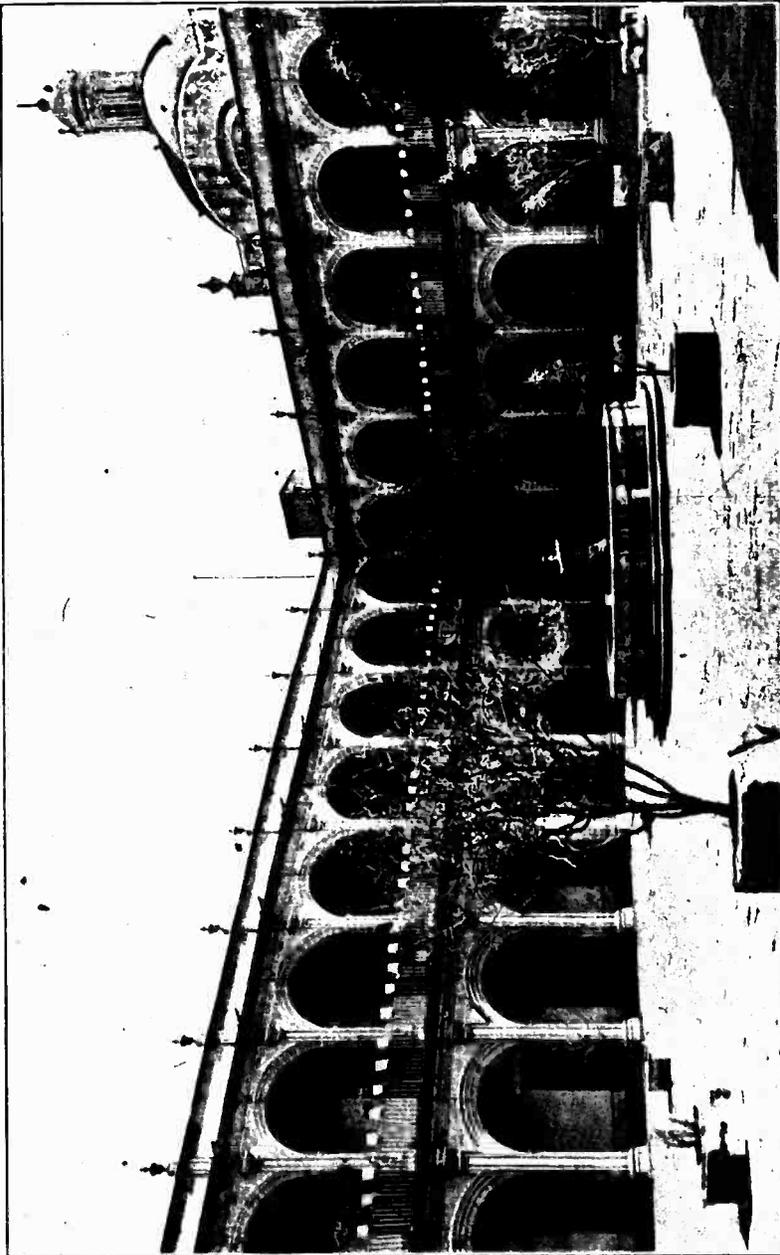
B. BOYS' HIGH SCHOOL, SAN JOSE, COSTA RICA.



A. NORMAL SCHOOL, SALTILLO, STATE OF COAHUILA, MEXICO.



B. MODEL SCHOOL, ITAPETININGÃ, SAO PAULO, BRAZIL.



COLLEGE OF LA PAZ, MEXICO CITY.

for the institute, occupies a new and handsome building directly in the rear, with a communicating passage through the patio; and the other practice school, the liceo for girls, is distant only two blocks.

Foreigner or native?—At different periods in the past decade a movement has developed to withdraw the institution from the direction of the German professors and replace them with native teachers, graduates of the school. The Government, however, has always opposed the idea, contending that the foreign professors have built up the school, formulated its policies and methods, given it an acknowledged prestige at home and abroad, and are still indispensable to its stability and further expansion. The movement, so far unsuccessful, springs from two sources. Chilean leaders in education, themselves well educated at home and many having even pursued postgraduate studies abroad, have the laudable ambition to take charge of their own national schools and establish their educational independence. They admit that the school needs perhaps foreign experts in some lines, but claim that the direction and general administration should now be intrusted to Chileans who have proved their worth and their ability. The other source of discontent is the feeling that Prussian methods lack elasticity, that they force all minds into the same rigid mold, and that as a result of the impression given in the Instituto Pedagógico all Chilean education is too formal and that initiative is sacrificed to method.

The Argentina higher normal school.—The marked success of the Instituto Pedagógico of Chile led Argentina to establish, in 1904, a similar institution under the name of Instituto Nacional del Profesorado Secundario. The need of trained teachers for the liceos and other schools of secondary grade was appreciated in Argentina at that time and is still felt today, but the higher normal school has not had the same success or achieved the same prominence as the Chilean institution. Different circumstances have contributed to this result. In the first place the school was founded much later in the historical development of secondary education. The bias had already been given and traditional practices already crystallized. The Chilean teachers' college was established at the psychological moment—at the time of educational expansion and the formulation of modern ideals in educational method. The Argentina institution came 30 years after the establishment of the primary normal schools, and was regarded as an interloper in the educational field. This feeling was accentuated by the presence in the national university of a regular faculty of letters and philosophy, which held that it was the special prerogative of the university to furnish teachers for the secondary schools; the faculties of letters and philosophy in the realm of literature, geography, and philosophy; the faculty of law in the subjects of civics and history; and the faculties of science

and medicine in the departments of science. Subject to this antagonism the Instituto Nacional del Profesorado Secundario has not succeeded in making for itself a distinct place in the national system of education, in spite of its recognized utility. It lacks the prestige that the university possesses, has never had a suitable building, and has been compelled to fight for its very existence. As in Chile, a group of German professors was called to establish the school and direct its policy. This fact in itself has embittered the antagonism to the institution. Few countries are so intensely national as Argentina, and while the new school was a governmental creation, popular sentiment among educational classes resented the introduction of an institution designed to replace a traditional and national form. The intransigence of the German professors, who insisted on transplanting intact the Prussian system to Argentine soil irrespective of local conditions, did not tend to allay the sentiment of rivalry and resentment. These discouraging features, added to the subsequent establishment of pedagogical courses in the University of Buenos Aires and the formation of a pedagogical section in the new University of La Plata, have restricted the usefulness of the higher normal school.

Curriculum.—The course of study corresponds very closely to that of the Instituto Pedagógico of Santiago both in length of term and in subject matter. In the matter of groups, however, there is more diversity, at least in form. The Argentine school contains two general groups, one embracing languages, literature, philosophy, and the social science; the other mathematics and all other sciences. The first group contains nine subdivisions, the second five. All biological sciences are grouped in one section. The student elects two subdivisions in one of the two general groups. Certain subdivisions must be combined, such as political science and history, geography and geology, mineralogy and chemistry. The classes in psychology, pedagogy, etc., together with practice teaching and observation, are common to all. The studies in foreign languages are not pursued in the institution itself. Students electing any one of these divisions follow the classes in a special school that will be described later.

Special course.—In addition to the regular four-year course for high-school graduates, the institute maintains a short course of one year for graduates of the university who desire to add a teacher's diploma to the professional title or doctorate received in a faculty. These students come principally from the faculties of law and medicine, since, as has already been noticed, a lawyer or physician frequently joins the task of teaching in a secondary or special school with the practice of his profession. The course of study for these *diplomados* consists of a general four-hour course in psychology and pedagogy, and another six-hour course in the methodology and prac-

tice teaching of the specialty for which the candidate's university studies have prepared him.

Equipment.—The institute has charge of one of the liceos of Buenos Aires, which serves as its model school and field for practice teaching. The liceo is the real center of the institute's life. Here are located the administrative offices and the departments of chemistry and biological sciences. Other departments are distributed among four different rented houses in the neighborhood. These buildings are necessarily ill-adapted to teaching purposes, especially when a laboratory forms part of a department, and they also involve considerable expense, since in addition to the cost of alterations the annual rental is \$6,000.

A teachers' college in the university.—A second institution for higher normal instruction in Argentina is the result of a spontaneous evolution of the national education, and does not even bear the name of normal school. The University of Buenos Aires is one of the few Latin-American universities that have retained a real faculty of philosophy and letters. In its present organization, it includes departments of philosophy, education, history, geography, sociology, anthropology, American archeology, Latin and Greek languages and literatures, esthetics, and general literature, and the literatures of Spain and southern Europe. There are 20 full professors and 12 substitutes and assistant professors. Five years are prescribed for the complete course, which is divided about equally between literary and philosophical studies. On the completion of the course, the passing of a comprehensive oral examination, and the presentation of an acceptable thesis the student receives the degree of doctor of philosophy and letters. In this part of its work the faculty is following its historical function. The regulations, however, permit a student to elect one or more lines of study, and after he has completed the full course offered in these departments, passed a comprehensive examination, and submitted a thesis, he is eligible to the title of professor. As a matter of fact, candidates for the doctorate are few. Nearly all students are preparing to teach in the secondary schools. Even those who elect the regular course and take the doctor's degree look forward to the professorate, but in a higher sphere.

In order to meet this new demand, the faculty has added courses in educational science and experimental psychology and established an efficient psychological laboratory. In this way, through the natural course of events and with the simple desire to meet a new demand, the College of letters and philosophy in the University of Buenos Aires has become in reality, although not in name, a teachers' college. It has, however, no practice school and its graduates receive no experimental training in the art of teaching. This fact differentiates it from the Instituto Nacional del Profesorado

Secundario, and is one of the causes of rivalry between the two institutions. The one contends that knowledge of the subject and theoretic pedagogy are sufficient to make the teacher; the other insists on the necessity of practical training. The graduates of this faculty become teachers of literature, language, history, geography, civics, and philosophy only, since no courses are offered in sciences. Teachers of science must receive their preparation either in the National Institute or in the faculties of science and medicine. The normal-school tendency of the faculty of letters can be traced in the increasing number of women students. At present the women are in the majority. The ratio is yearly increasing, and the movement is sure to continue unless teaching can be made more attractive to the ambitious young man.

Another teachers' college.—The University of La Plata also makes provision for the training of teachers in its department of pedagogics, which forms one section of the faculty of social and juridical sciences. The introduction of pedagogy was not an evolution, as in the University of Buenos Aires. La Plata entertains the distinct ambition of enriching all grades of instruction by developing real scholars and scientists and by training a superior professorate. Its pedagogical section is, therefore, carefully and highly organized. There are two courses of study—the first, for those who have already acquired knowledge of the subjects they intend to teach; the other, for students in other departments of the university who wish to train themselves for teachers at the same that they pursue scientific or literary studies. The first course is intensive during the first two years, with 30 hours per week of class and laboratory exercises and practice teaching. Then follow two more years of advanced pedagogical study, requiring but a few hours per week, and which may be done in connection with actual teaching if the student has a position in La Plata or a neighboring town. The degree for this course is professor of secondary instruction.

The other course is not so intensive nor so comprehensive. It covers three years, includes psychology, methodology, history and science of education and school legislation, requires considerable observation and practice teaching, and leads to the degree of professor of a designated subject or subjects, depending upon the line of specialization in the university. The teachers' section in La Plata has the advantage, not possessed by the University of Buenos Aires, of having abundant opportunities for practical instruction. There are two preparatory schools, one for boys the other for girls, which form an organic part of the university and are controlled by the dean of the pedagogical section. These are used as practice schools. There is also a primary school affiliated with the university, which

serves as a practice school for primary and other teachers who come to the university for the intensive course in scientific and practical pedagogy.

SPECIAL NORMAL SCHOOLS.

Argentina possesses two special normal schools of unusual interest. An institution for the preparation of teachers of foreign languages is located at the capital, and forms a part of the national system of education; the other is a provincial establishment for the training of men teachers for the rural schools.

The foreign-language training school is known as La Escuela Normal de Lenguas Vivas. Modern languages occupy a most important position in all schools of secondary grade, liceos and normal, commercial and industrial institutions. As far as the practical side is concerned, they are excellently taught, but in order to improve still more the practical teaching of foreign languages the Government founded this special school, and decreed a course of study that is as efficient as it is unique. The institution comprises two schools, a primary and a secondary. In the first is given a regular primary education with the addition of one or two foreign languages, French and English. The language instruction is eminently practical, and the pupils learn to understand and speak as well as to read and write. On entering the upper school the student elects the language she expects to teach—it is a school for girls only—and from this time on all instruction in all subjects of the curriculum, except Spanish, is given in the language which the student is preparing to teach, and usually by teachers for whom this language is the mother tongue. In other words, the high school is an English school for one section and a French school for the other. The curriculum varies somewhat for the different sections; for example, history in the French section means especially history of France and of the French; in the other section the stress is laid on English history. The same is true of geography and civics, and necessarily the studies in literature are totally different. The study of the language itself is also continued, so that by the time the girl finishes her high-school course she is admirably grounded in the foreign tongue, and at the same time has studied the people, their history, literature and customs, society, and politics. In addition, she has studied methodology, and has been trained in the art of teaching the language by means of practice lessons in the primary department. The curriculum of the preparatory school covers three years and that of the high school four years. For the preparation of foreign-language teachers a better method could scarcely be devised.

The Alberdi School.—In a country so distinctly agricultural as Argentina the rural school is a matter of supreme importance, and

when it is also conceded that it should be a primary agricultural school as well as a nursery for the "three R's," the formation of a teaching corps becomes a serious problem. The ordinary normal graduate is seldom found in the country. The salary is too small, and the material difficulties are forbidding to a young man accustomed to urban life. Besides, in Argentina, as in the United States, few young men prepare themselves to teach in elementary schools, either rural or urban. The normal school at Parana, one of the oldest and most efficient in Argentina, has not graduated a dozen men in the last dozen years in the elementary teachers' course. This dearth of men teachers has resulted in filling the country schools with women, or with men who have no pedagogical training and little interest in the profession of education:

It remained for the Province of Entre Rios, of which the capital is Parana, to inaugurate a plan that aims to accomplish two much-desired results: First, to provide the country schools with men teachers who sympathize with country life; second, to train these teachers in agriculture as well as in pedagogy. In 1905 there was founded in the open country, 10 miles from Parana, a special normal school for boys, in which the studies are half academic and half agricultural. It is a school farm. The land comprises 400 hectares and cost, with the original farm building, \$11,000. Other buildings have since been erected, some for school purposes, others for the uses of the farm. The pupils are all boarders. The Province established 30 free scholarships on the opening of the school, and pledged itself to increase the number as the plant was enlarged and the institution proved its usefulness. A day primary school is maintained on the farm for the children of the neighborhood, and it serves as a model and practice school.

The country schools in Latin America do not contain the full complement of six grades, but are usually limited to three or four. A country teacher, therefore, does not need a large academic equipment. Boys who have completed the short elementary course of the rural school can therefore enter the Alberdi Normal and Agricultural Institute. The course of study here covers three years. As far as the academic studies are concerned the curriculum is extremely simple, being a continuation of only those subjects that the boy has pursued in the primary school and which he in turn will have to teach—Spanish, arithmetic, elementary geometry and drawing, history, civics, and geography. Each of these subjects is continued throughout the entire three years. The professional studies consist of pedagogy, likewise continued during the three years, and such practical subjects as school hygiene, practical psychology, methodology of elementary subjects, together with observation and practice teaching.

The studies in agriculture are not a side issue or a species of dilettantism. The institution is as much an agricultural school as a normal school. There is a professor of agriculture, another of zootechnics, and a third of applied sciences. The agricultural studies run parallel with the academic throughout the entire course and are essentially practical. Instruction is given in the field, and much of the cultivation and care of live stock is the work of the students themselves. After three years of training the student of "Atberdi" is an expert agriculturist as well as a schoolmaster, and the Province of Entre Rios purposes to disseminate this technical knowledge through the rural population by means of the country school. Each rural school has 4 hectares of land, which constitute the school garden and farm. The regular elementary curriculum includes agriculture, theoretical and practical, as does the rural normal school, and the teacher, who is both *normalista* and *agricultor*, is expected to devote no less attention to scientific and practical education in agriculture than he does to academic instruction. The Province provides a house for the teacher beside the school building. The 4 hectares of land are in a sense the teacher's property while he remains in the position, and the products of the tract are his to use or to sell. Under such a system the rural school is more than a mere school; it is a school farm where the two elements of a rural education receive equal attention.

CHAPTER XI.

COMMERCIAL EDUCATION.

This branch of instruction has taken a strong hold upon the Latin-American mind. The rapidly increasing commerce, better means of communication through international railways and faster steamship lines, and the conviction now firmly established that national superiority in the present era must be based on economic advantage have led the Latin-American countries, almost without exception, to foster commercial education by all the means within their command. In some States, it is made almost a fetish. Aside from the purely pedagogic and economic reasons that prompt the movement, there are two others which are distinctly political. Under the old régime of semi-isolation to which these countries, on account of their geographical position, were subjected, the only career of importance open to young men was that of the so-called liberal professions, and these led more or less directly to political life. As a result, the countries were burdened with hosts of factions, even if well-meaning politicians. This class, embracing the best blood and the strongest brains of the State, was not productive, and economic activities either languished or passed into the hands of foreigners.

Outside capital entered with the opening of commercial advantages, but it did not come to increase the productivity of native companies and local commercial houses; it came as a distinct foreign corporation, having a foreign manager, and, except in the humblest stations, foreign employees. These men rarely entertained the idea of settling definitely in the country and acquiring citizenship. Their stay was but temporary, and in time they were replaced by a new contingent from across the seas. It was a foreign commercial invasion, made possible largely because of the distaste and educational unfitness of the native for commercial pursuits. The double danger of internal political strife and of external commercial domination came in time to be keenly realized by farseeing statesmen. An antidote for both seemed to be the commercial school. It would dignify economic activities hitherto disdained; it would draw off from the unproductive liberal professions and thus indirectly from political life a portion of the youth of the nation, and it would prepare a phalanx of young men who could combat the foreign tradesmen with his own weapons. From a patriotic point of view, these motives are entirely praiseworthy. They have contributed very largely to the founda-

tion of commercial schools, and to the formation of public opinion in favor of an education which was foreign to the spirit and tradition of the race. The schools have realized in a very large measure the patriotic purposes that contributed to their establishment. In the more commercial nations political strife has become less intense, commercial and industrial pursuits have risen in social estimation, trade is claiming more and more of the brains of the nation, and local initiative is developing industries that in former times invariably awaited the coming of the foreign capitalist. Other forces have doubtless aided in the movement, but the influence of the school is not to be minimized, and the Latin-American with his love of system has faith in the school because it is an organized, systematic agency.

Different systems.—Although commercial education is very general it is organized on different lines in different countries. In some it is made an integral required branch in all secondary instruction; in others it is merely a section of the high-school course, existing side by side with the literary and scientific courses; in still others it is a separate school, a distinct commercial high school. The last-named type is perhaps the most favored. Educators maintain that it produces the best results, because of its segregation from the traditional forms of instruction; that the pupils are removed from the allurements of the literary course that prepares for the university, and from the aristocratic, nonpractical atmosphere which it develops; and that the prestige of the school is advanced by the separate organization. Opposing these arguments it may be said that the union of distinct courses in the same school, under the same general management, has its advantages and is much more economical. That it is not incompatible with conditions in Spanish America is proved by the experience of some countries, notably Costa Rica.

The Chilean system.—Chile is the strongest advocate of the separate school, and the system has there attained unquestionable success. Although the policy of commercial education is still young in Chile, and the first schools were established little more than a decade ago, there are already a dozen State schools in as many towns, and the enrollment reaches the surprising figure of 2,000 in the day classes alone. In the city schools the registration in evening classes is often as great as in the day section. If to these are added the enrollment of commercial sections in private and church schools, the total is comparatively large.

Curriculum.—The course of study covers four years, of which the first is called preparatory. The commercial school of Chile is not of high-school rank in its first years. Of the common primary schools only a limited number maintain the full complement of six grades; many are of second rank, containing but three or four grades and

giving only the rudiments of a common-school education, reading, writing, and elementary arithmetic. From these "folk schools" comes the greatest number of commercial-school pupils, and a certain additional preparation is necessary. This is given in the first or preparatory year. The mother tongue, arithmetic, and penmanship are continued; geography, history, and elementary science are introduced, and the study of English is begun with six hours of class work per week. The Chilean commercial school is therefore midway between an elementary school and a high school. The first year, at least, is distinctly primary, but the preparation it affords is better than could be given in a regular primary school, since studies in history and geography are given a commercial bias, and the introduction of a foreign language at an early stage constitutes a decided advantage for a commercial career.

Below is given a course of study for the last three years, which constitute the commercial school proper:

Chilean commercial course of study.

| Subjects of instruction. | Hours per week. | | |
|--|-----------------|--------------|-------------|
| | First year. | Second year. | Third year. |
| English..... | 6 | 6 | 6 |
| German..... | 4 | 3 | 3 |
| Bookkeeping and office practice..... | 8 | 4 | 10 |
| Commercial arithmetic..... | 6 | 5 | 3 |
| Stenography, typewriting, and drawing..... | 4 | 2 | 2 |
| Commercial law and tariff legislation..... | | 3 | 3 |
| Commercial geography and history, and political economy..... | 2 | 4 | 4 |
| Spanish and commercial forms..... | 4 | 3 | 3 |
| Natural and physical sciences, and commercial products..... | 4 | 3 | 3 |
| Hygiene..... | | | 2 |
| Total..... | 32 | 33 | 36 |

The curriculum is not absolutely uniform for all schools, but the variations are so insignificant that it would be useless to enter into many details. French is sometimes substituted for German, but English is everywhere required, and the amount of time devoted to it varies but little.

Interest in commercial education.—Commercial education enjoys in Chile a very high degree of public and governmental favor. The State takes pride in equipping the schools to the full extent of its ability, and the local municipality and chamber of commerce often add to the equipment of the home institution. It even appeals to individual generosity above other forms of education because of its evidently practical nature, and business men make donations to the support and betterment of the institution.

Methods.—Although the commercial high school of Chile is one form of secondary instruction and not merely a business college, its

avowed policy is to emphasize the practical. Instruction in all lines becomes less bookish, less dogmatic than elsewhere, and in the teaching of geography, history, and languages material devices are used wherever the subject will permit and the resources of the school make possible. The commercial museum, with its exhibits of raw and manufactured articles, native woods, minerals, grains, and charts representing processes of manufacture and types of machinery too bulky or expensive for exhibition, forms a distinct feature of every school. Its extent varies with the size and resources of the institution, but its value in instruction is universally recognized.

Instructors.—Another fact that explains the quality of instruction in the commercial school is the number of teachers that devote all their time to the one institution. In the liceo, with its wide range of studies and the policy of specialization prevalent in South America, many instructors teach but a short time each day, and spend the remainder of the day in other schools or in the practice of a profession. Since the commercial school has a relatively short curriculum and many subjects are continued throughout the entire course, most teachers can be employed throughout the entire scholastic day. This creates a unity of purpose and a feeling of pride in the institution that is conducive of better results.

The parent school.—The general excellence and uniformity of aim and method that mark all commercial schools in Chile are due in large measure to the normal course, which forms an important section of the Escuela Superior de Comercio of Santiago. This school is the oldest in the country, and in addition to the regular course similar to that in other schools maintains two advanced sections of two years each. One is a general course in commerce, economics, and administration; the other offers special training for teachers in commercial schools. The program of studies in the latter section is but a continuation of the most important subjects in the lower school, with the addition of a course in methodology. Particular attention is given to foreign-language study. The normal course itself is bifurcated. Foreign language and methodology are common to both divisions, but in one mathematics and bookkeeping form the specialty, while in the other it is science and commercial technology. The importance of this commercial normal course can hardly be overestimated. In the era of the establishment of commercial schools it sent out men with similar ideals and well-formed conceptions of the nature, type, and utility of this form of instruction, and has ever since remained a center to which all look for inspiration and improved methods. Most principals and many professors of the commercial schools in the Provinces are graduates or former students of the central school at Santiago.

The Argentine type.—The type of commercial education in Argentina is much the same as in Chile, but the federated system of government in the former country prevents the unity and uniformity that characterize the Chilean schools. The Argentine States are independent in affairs educational; consequently, provincial schools vary greatly, not only in curriculum but in method and purpose. The Federal Government, however, has the right to establish and maintain schools on its own account if it so decides, and in recent years the tendency has been in favor of central control of education—primary, special, and higher. Many States had already founded commercial schools, but facilities and equipment were often insufficient and unworthy of the economic advance of the country. The Federal Government at last came to the support of this type of education, and has founded a chain of schools under the name of *Escuelas Comerciales de la Nación*, of which there were seven in existence in 1911—three in the capital and one each in Rosario, Bahía Blanca, Tucumán, and Concordia. One of the three at Buenos Aires is for women only. In the provincial towns some of the schools are coeducational. Three grades of diplomas are granted. That of *dependiente idoneo* requires three years of study; that of *tenedor de libros*, four years; and that of *perito mercantil*, five years. The two higher schools of commerce at Buenos Aires and Rosario offer also an advanced course of three years for public accountants. For entrance to this course the diploma of commercial expert (*perito mercantil*), or an examination covering similarly advanced studies, is required. It is a course of university grade, and a minimum age of 19 is required for entrance.

A commercial high school.—The standard course in the Argentine commercial school is that which leads to the title of *perito mercantil* and embraces five years of study. This is the same length of curriculum as in the regular Argentine liceo, and as entrance requirements are identical for the two the commercial school is in reality a high school. In this respect it differs from the commercial school of Chile, which articulates with the third or fourth grade of the elementary school. The more advanced entrance requirements and the longer curriculum permit the Argentine school to give more attention to nontechnical studies. Consequently the school is an institution of general culture as well as a commercial school. A schedule of this course is herewith presented.

Argentine commercial school course.

| Subjects of instruction. | Hours per week. | | | | |
|--|-----------------|--------------|-------------|--------------|-------------|
| | First year. | Second year. | Third year. | Fourth year. | Fifth year. |
| Mathematics and drawing..... | 6 | 6 | 5 | 3 | 3 |
| Spanish and commercial correspondence..... | 6 | 4 | 3 | 3 | 3 |
| Civics and morals..... | | 3 | 2 | | |
| General and Argentine history..... | 4 | 3 | | | |
| General and Argentine geography..... | 4 | 2 | | | |
| Penmanship..... | 4 | | | | |
| Commercial geography and history..... | | | 4 | 4 | |
| Natural science..... | | | 3 | 3 | |
| Bookkeeping..... | | 4 | 5 | 5 | 6 |
| Commercial products..... | | | | 2 | 3 |
| Political economy..... | | 2 | 2 | 2 | 2 |
| Stenography and typewriting..... | | | | | 3 |
| Fiscal and tariff legislation..... | | | | 2 | 3 |
| Elementary commercial and civil law..... | | | | 2 | 3 |
| English, French, German, or Italian..... | 6 | 6 | 6 | 6 | 6 |
| Total..... | 30 | 30 | 30 | 30 | 30 |

Schools of Commerce.—In Bolivia and Uruguay commercial instruction is organized not as a part of secondary education but as a faculty of university grade. A high-school diploma or an examination covering the secondary school curriculum is required for entrance. These faculties were established for advanced study in commerce, finance, and administration. Among their functions is included the training of consuls, collectors of customs, public accountants, and administrators of State properties. The school at La Paz has always been an independent faculty, since there are no universities in Bolivia. The institution at Montevideo was incorporated into the university in 1904, but seven years later was organized as an independent school of commerce. It retains, however, much the same characteristics as heretofore, and is housed in the same building as the faculty of law. The change is almost wholly one of name, and in becoming an independent institution it has but followed the same tendency toward decentralization which has been shown by other institutions of higher education in Uruguay. In recent years the agricultural and veterinary faculties have also been detached from the university and erected into separate schools. The Montevideo school has maintained but a single course of study, extending over three years, and leading to the diploma of *perito mercantil*. The first two years of the same course, with the omission of foreign language study, leads to the lesser diploma of *contador*. The Bolivian school at La Paz has a course of study of five years which is both more extensive in scope and more intensive in content. The first two years are termed "preparatory," and include courses in mathematics, physics, chemistry, commercial geography and history, French, and English (both languages have already been studied in the lower school), and beginning courses in stenography and typewriting. In

the regular three-year course that follows, the study of foreign languages is continued, but the greater part of the student's time is given to the more technical branches, such as commercial operations, banking, exchange, commercial law, etc. The last year contains two divisions. One prepares especially for banking and international commerce; the other for the profession of consul, collector of customs, and other governmental administrative parts.

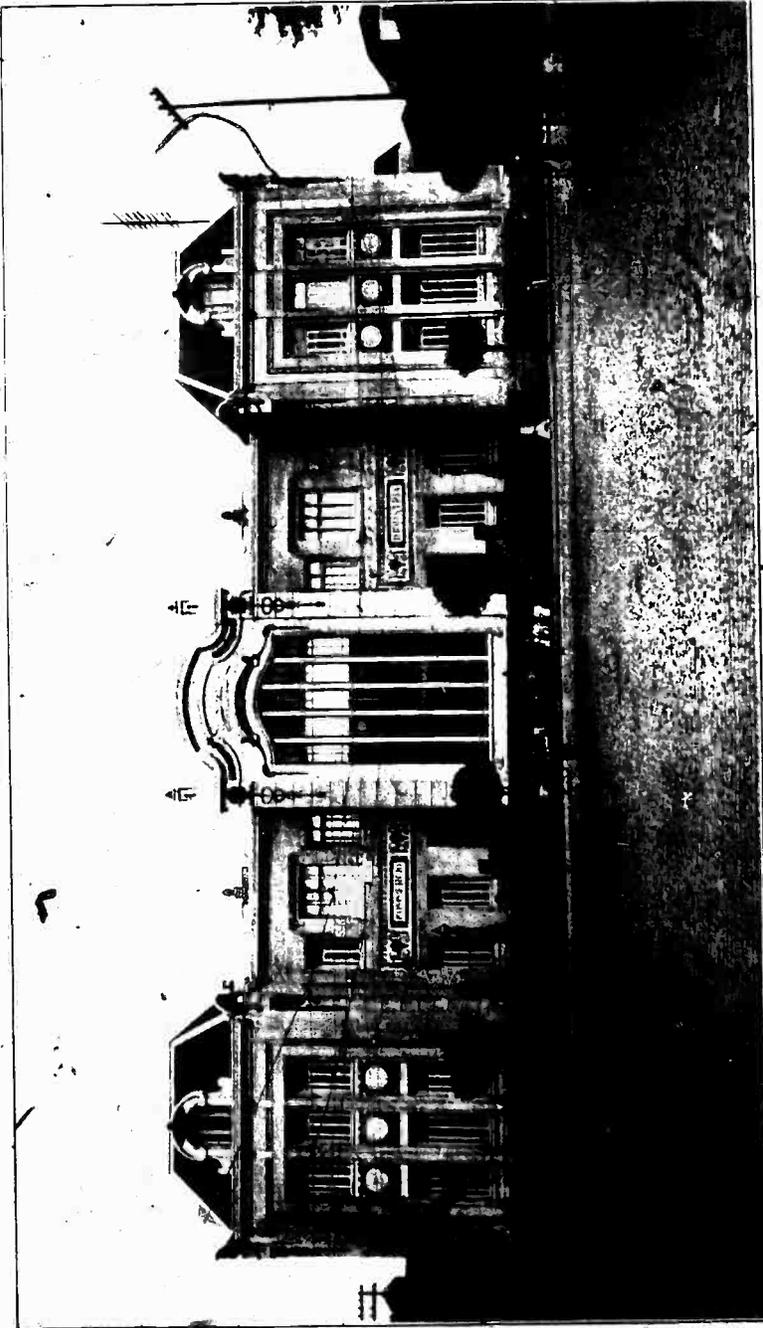
The commercial school of La Paz offers also a two-year course for girls. This section is distinctly elementary and practical, and a primary education only is required for entrance.

Commercial education in Brazil.—The subject of commercial education has not received the same attention or reached the same stage of development in Brazil that it has in certain other countries of South America. The Federal Government has established no school of this class and only one State has made the commercial school a regular part of the educational system. Neither are commercial branches included in the high-school curricula. The few commercial schools that exist are private foundations. In nearly every case they receive subsidies from the State or municipality, but there is no unity of method, purpose, or curriculum. Less than a dozen schools are in operation and the total enrollment does not exceed 1,000. The two most important are the School of Commerce at Sao Paulo and the Academy of Commerce at Rio de Janeiro, but in both the scope of the curriculum is narrower and the amount of technical study less than in the national commercial schools of Chile, Argentina, and Uruguay. The school at Rio de Janeiro is an adjunct of a commercial museum, which is much more important than the school, and is doing a valuable service in advertising abroad Brazilian products and Brazilian commercial opportunities. The school holds only evening sessions. This is true also of the regular course in the school of Sao Paulo. The latter institution possesses a magnificent building, the generous gift of a public-spirited citizen. The course of study comprises four years, including a preparatory year. For admission only the most elementary education is required. The first three years are devoted wholly to the study of foreign languages and elementary subjects, with the exception of a class in book-keeping in the third year. To the fourth year are assigned the really technical branches. An advanced course of two years prepares for banking, international commerce, and consular service, but the enrollment in this section is very small. Brazil is just awakening to the advantages of public commercial schools. Small centers are beginning to establish schools after the model of the one at Sao Paulo. Like the parent institution they are conducted in the evening only, and the patronage comes almost entirely from young men already in business positions.

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BUREAU OF EDUCATION



SCHOOL OF COMMERCE, SAO PAULO, BRAZIL.

Evening classes.—It is not alone in Brazil that evening classes in commercial schools are in vogue. In the countries that have the most successful systems of commercial education, the night school rivals the day section. Particularly is this true in the cities. At Valparaiso, Buenos Aires, and Rosario the enrollment in the evening classes constitutes two-fifths of the entire registration. Every national school of commerce in Argentina is required by law to maintain evening classes. The course of study in the night school is not merely preliminary or special. The entire curriculum of the first four years is repeated, and a student may graduate in this section, receiving either of the two elementary diplomas.

In the other countries.—The Federal Government of Mexico maintains at the capital two national schools of commerce, one for men, the other for women. Admission is based upon the completion of the higher primary curriculum, and the course of study extends over two years. The annual enrollment is six or seven hundred.

Peru and Colombia have a mixed system of State commercial schools. In the former there is a commercial college at Lima which receives national and municipal subsidies, and two primary commercial and industrial schools at Yurimaguas and Iquitos. In addition, the national high schools contain a section of commercial studies.

In the reorganization of her educational system, Colombia has planned the establishment of commercial colleges in the provincial universities and the incorporation of commercial studies in one type of national high schools. The grade of instruction will be much the same in both institutions.

Commercial studies in high schools.—The other countries of Latin America do not maintain separate schools of commerce, but in practically all some provision is made for commercial education. Many private commercial schools are regularly subsidized. In addition, commercial studies are introduced into the secondary school curriculum. This method assumes three distinct forms, depending upon the form of high-school organization. In most countries the regular high-school curriculum comprises but a single course of study, which is uniform for all pupils. In such cases the commercial studies are made a part of the common curriculum and are required of all. Where this organization is followed, the commercial branches are necessarily limited in number, elementary in character, and reserved for the last years. They can include nothing more than commercial arithmetic and the elements of bookkeeping. Moreover, they are of little value for encouraging industrial activities, since boys who complete the regular secondary studies are destined for the university and the liberal professions. This type is exemplified in the high schools of Guatemala, Salvador, and Venezuela.

The second type of commercial education in the high school is that in which it is made a parallel course equal in length with the others. This type is exemplified in the *liceo moderno* of Bogota, in which one section is distinctly commercial and the other is scientific. Colombia is one of the very few countries in Latin America that has retained the old classical high school with courses in Latin and Greek. But beside the classical liceo there has been created in recent years the modern liceo, and in this latter commercial studies have found their place as a separate section. The same system is applied in Cuba, except that there is only one class of high schools, including all sections. The course of study covers five years. Haiti has an organization similar to that of Colombia.

The third type is that in which all forms of secondary instruction are united in one school and where the studies of the first years are common to all. The best example of this type in Latin America is the organization of Costa Rica. During four years the studies are the same for all. At the end of this time three sections are formed—literary, commercial, and normal. The first two sections continue their studies for two years and the normal section for three years. In the commercial course the study of the national language and of English and French is continued, and the following technical branches are introduced with two and three recitations each per week: Bookkeeping, commercial arithmetic, and geography, industrial technology, commercial products, stenography and typewriting, political economy, and commercial law.

Private commercial colleges.—In addition to the regular State schools of different grades, commercial education is promoted in private business colleges organized after the popular North American model and conducted as a gainful enterprise. In educational merit they naturally vary greatly. Some are recognized as possessing very considerable merit and receive subsidies from the Government or municipality.

Church schools.—Still another class of commercial schools are those maintained by religious orders of the Roman Catholic Church and by the various Protestant societies. These schools recognize the popularity of the business course and are not slow to incorporate it into the organization of the school for the purpose of attracting patronage. The Salesian Brothers, who specialize in various forms of practical education, almost invariably include in their school a commercial section. Protestant institutions, which are to be found in almost all important centers, possess certain distinct advantages for this form of education, in that they are usually conducted by English-speaking persons, and much of the instruction is given in this language. English is everywhere recognized as the most important language for business, and many pupils attend these schools in pref-

erence to others, because they offer exceptional advantages for acquiring English in an easy and practical manner.

General status of commercial education.—In conclusion, it can be stated that the impulse toward commercial education in Latin America is very marked. It is one more manifestation of the modern, practical spirit which is moving in these countries. Some forms of the instruction given are much more efficient than others. When injected into an already overcrowded and uniform secondary curriculum and confined to rudimentary courses it can accomplish little good, but where it is made a distinct type of education, whether in separate schools or in a separate section of the high school, it has its own educative and utilitarian value, besides tending to modernize methods of instruction throughout the entire institution.

CHAPTER XII.

AGRICULTURAL EDUCATION.

In the past two decades Latin America has shared with the rest of the world an intensified interest in scientific cultivation of the soil, and in agricultural education as a necessary antecedent to better agricultural conditions. There is scarcely a country in Latin America that has not its agricultural college, one or more experiment stations, and other organized agencies for the dissemination of this branch of knowledge. The movement has resulted from two causes. First, the general advance in industrial life that has taken place at home; and second, the special interest in agricultural education that has developed in recent times in Europe and North America. Better industrial conditions in Latin America have improved the markets for agricultural products at home, and increased facilities for transportation by land and by sea have made Latin-American products a large factor in the world's markets. It became worth while, therefore, to study agriculture with a view to improving the quality and increasing the production. The example of the great agricultural nations stimulated the movement. As stated elsewhere, the Latin American ardently desires for his country the best and most progressive things of the world. He is quick to adopt a new idea, a new theory, or a new process. Modern agricultural education and experimentation have been accepted, therefore, in Latin America with the same fervor as elsewhere, notwithstanding the fact that conditions are less favorable for their practical application. Each South American nation, with the exception of Ecuador and Venezuela, has one or more agricultural colleges for advanced study in this science. Venezuela has recently employed a European specialist to study conditions in the country and advise the form of agricultural education best suited to her needs and capacity.¹ The smaller countries of Central America content themselves with elementary forms of agricultural education in connection with the primary school, but Honduras has recently inaugurated a policy of extending the scope of its agricultural instruction and of fostering in an especial manner this form of education. Prior to 1907 Mexico had only a moribund college of agriculture. In that year the institution was reorganized,

¹ On April 15, 1912, a decree was promulgated establishing a college of agriculture and veterinary science in Venezuela. The location of the institution was to be decided by the National Congress.

the curriculum changed, the plant improved, and practice joined with theory. The enrollment increased manyfold in a single year. The latest available statistics give 330 students in agriculture and 144 in veterinary science. Santo Domingo and Haiti each has a secondary school of agriculture. In the latter country it is combined with an industrial school called *Ecole des Sciences Appliquées*. The institution is a private foundation, but since 1905 has received an annual governmental subsidy. The course of study in agriculture extends over two years following a preparatory year in general scientific subjects. The school possesses a plot of ground for practical farming. Cuba has a regular agricultural college, which forms a department of the University of Habana.

At different epochs during the nineteenth century, there were sporadic attempts in different countries of South America to establish regular agricultural education. However, interest soon waned or conditions prevented the accomplishment of the enterprise, and it was not until late in the century that any permanent institutions were founded. The schools that exist at present represent two distinct categories and will be considered separately.

Agricultural colleges.—The higher schools can be designated as agricultural colleges, since they are on the same plane, as far as entrance requirements are concerned, as the professional schools of law, engineering, etc. Except in Argentina the agricultural college does not form a part of the university. Elsewhere it is an independent institution, and instead of being subject to the ministry of public instruction, it is responsible to the department of agriculture. Some institutions were of college rank from the date of their foundation, others represent a gradual evolution from a primary agricultural school (*Escuela practica de agricultura*).

The oldest agricultural college of South America is the Instituto Agrícola of Chile, founded in 1876, and located at Santiago. No other permanent foundation of college grade was effected until 1897, when the school at La Plata was established as an outgrowth of the practical school of Santa Catalina. In 1905 it was incorporated into the University of La Plata as a faculty. The State of Sao Paulo, in Brazil, established its college at Piracicaba in 1900. The college of Peru, at Lima, was definitively organized in 1901. Uruguay added a faculty of agriculture to the university of Montevideo in 1906, but two years later made it a separate institution. The college of agriculture in Buenos Aires was organized in 1904, and incorporated into the university in 1909 as a faculty of agriculture and veterinary science. In 1910 Colombia authorized by law the establishment of an agricultural and mechanical college in connection with the University of Cauca. The list, as now constituted, of national colleges of agriculture in South America was completed in 1911.

when Bolivia opened one at Cochabamba and Brazil began the organization of a national institute at Rio de Janeiro. In the latter case the technical courses in agriculture were removed from the engineering school and transferred to a new plant on the outskirts of the city, where practical application can be combined with theoretical instruction.

With the exception, therefore, of the institute of Chile, Latin-American colleges of agriculture are of very recent establishment. Since it was a new form of education, and in the main a direct importation from Europe and North America, few States possessed the personnel required for directing and teaching in such institutions. Often the first principals and professors were brought from Europe or the United States and many faculties still contain a large number of foreigners. Belgium especially, on account of the excellent reputation of its agricultural schools, has furnished a large number of teachers. The faculty of an agricultural college in South America is more often than not a cosmopolitan club. It is not unusual to find representatives from a half dozen different nationalities. In order to train a corps of native principals and professors, the States have granted liberal scholarships for study abroad in this line of specialization. Gradually the schools are filling up with native-born teachers.

Expenditures for agricultural colleges.—The States have been lavish in their expenditures for agricultural education. The teaching staff, so largely recruited abroad, is of itself an expensive item. The buildings almost everywhere are good, built expressly for the purposes of the college, and furnished in a modern manner. In some the classrooms and principal laboratories are grouped in a single large structure; in others each department has its own pavilion. Some of the large buildings are palatial in appearance. The new central hall of the agricultural faculty of the University of La Plata is a handsome and commodious building, as it stands to-day, while a large addition yet remains unfinished. The school at Montevideo occupies a building completed only three years ago, which is a model of elegance in its appearance and is admirably arranged for class and laboratory work. The school at Piracicaba in Brazil is a veritable paradise, where the large central building with two long unconnected lateral structures faces a park comprising a hundred acres, filled with such a variety and luxuriance of trees, shrubs, and flowers as only a tropical landscape can produce. Likewise the school at Lima is beautifully located, with adequate buildings for the school work proper and four special laboratory pavilions for the use of the experimental staff. At Buenos Aires the school is located in the suburbs, on the level pampa in the midst of fertile fields. The buildings are all pavilions, a half dozen in number, and each designed for

a special department. The Agricultural Institute of Chile has never had a building of its own, but it has enjoyed fairly adequate quarters in one wing of the Natural History Museum. Immediately in the rear is the experiment station and near by is the Practical School of Agriculture. Plans have been perfected whereby the institute will have in the near future other and more commodious buildings.

In the matter of equipment, the different States have exhibited great liberality. Nearly every school possesses a large farm well provided with buildings, machinery, and live stock. Laboratories are sufficient for the needs of instruction, and also of experimentation when this function has been combined with the duties of instruction.

A few figures may not be amiss to prove the solicitude shown everywhere for this form of education. The annual budget of the school at Lima is upward of \$50,000, which is double the amount allotted in 1902; the buildings cost \$150,000. The budget of the Bolivian school is \$10,000; that of the Chilean institute, \$20,000. This relatively small amount in the latter case is due to the fact that it includes the teaching staff only. The experimental station is a different organization, and so is the practical school of agriculture, although both institutions are located in the Quinta Normal with the agricultural college. In 1911 the University of Buenos Aires allotted to its faculty of agriculture and veterinary science the sum of \$180,000. The faculty of the University of La Plata received an even greater sum, and, in addition, the Government appropriated \$120,000 for new buildings. Uruguay spent in the years 1906-1908 a quarter of a million in buildings and equipment for her agricultural college, and is now erecting a new plant for the school of veterinary science, which will cost a like sum. The State of Sao Paulo in Brazil appropriates annually more than \$300,000 for the support of agricultural instruction and experimentation, and of this the college at Piracicaba receives from seventy-five to one hundred thousand. In the year that agricultural education in Mexico was reorganized, \$125,000 was spent in buildings, repairs, and apparatus. The University of Habana has recently erected a handsome building for its department of agriculture.

Dissimilarities in organization.—The organization of the agricultural college in its relation to the entire State educational system presents some variations. In Argentina it forms, together with the school of veterinary science, a faculty of the university and offers two parallel courses, one in agriculture and one in veterinary science. The same organization was effected in Uruguay, but after two years the schools were separated from the university and each erected into a separate institution. In their new locations they are widely separated from each other. In Bolivia both schools are united in the

same organization, but have no organic connection with other departments of higher education. A similar organization prevails in Mexico. In Brazil, Chile, and Peru practical courses in veterinary medicine are included in the agricultural college.

In the matter of experimentation also there is dissimilarity. Some, by reason of their charters, are experiment stations at the same time that they are schools, and the two functions are carried on with the same equipment and by the same personnel; others are distinctly teaching schools in which experimentation is only incidental. Most States founded experiment stations before agricultural schools, and the experiment station frequently remains distinct from the college. It is usually administered by foreigners, contracted for abroad for this particular activity.

Admission requirements.—The usual scholastic requirement for admission to the agricultural college is the certificate of having completed the regular secondary education or an examination covering equivalent studies. Certain States grant scholarships of sufficient value to cover practically all the expenses of the student. In such cases the examination is presumably competitive. In a few colleges the students, both State scholars and students who pay, room and board in the institution, but more usually the college is a day school only. Providing a college home and granting scholarships have come about because of the earnest desire of the States to encourage agricultural studies.

Curriculum.—The course of study almost uniformly covers four years. Not infrequently the first year is a preparatory course, comprising general scientific and mathematical studies, but without technical branches. The curricula given below are typical and show the range of studies and the order in which they are presented. The regular curriculum of Piracicaba is preceded by a "preliminary course" of one year, embracing the following subjects: Portuguese, French, arithmetic, elementary algebra, geography, history of Brazil, geometry, shop and field work. This school divides its year into semesters, and the subject matter is more subdivided. The student carries fewer subjects at a time, concentrates his attention, and changes many classes each semester. In accordance with Brazilian law, military training is given throughout the four years. With this explanation, the insertion of the preliminary year in the table of studies is unnecessary. It will be observed that two schools combine with agriculture practical studies in veterinary science. The college of Montevideo is strictly agricultural, since the State maintains a separate college of veterinary medicine. The same division of studies is observed at La Plata, Buenos Aires, Mexico, and in the Bolivian college at Cochabamba. The great stock-raising countries very naturally give particular attention to veterinary science, while in the others it is subordinate to general agriculture.

TYPICAL CURRICULA OF AGRICULTURAL COLLEGES.

FIRST YEAR.

Montevideo.

Meteorology
Chemistry
Botany
Anatomy and physiology
Geology and mineralogy
General zoology
Mathematics and surveying
Drawing

Santiago de Chile.

Physics
Chemistry
Agricultural botany
Arithmetic and algebra
Geology and mineralogy
Agricultural zoology
Geometry and trigonometry
Drawing

Piracicaba (Brazil).

(First semester.)

Elementary physics and mechanics
Algebra and geometry
General chemistry and mineralogy
Botany
Zoology (domestic animals)
Animal anatomy and physiology
Drawing
Practical field work

(Second semester.)

Hydrostatics and hydrodynamics
Geometry and trigonometry
Organic chemistry
Plant physiology
Domestic animals
Drawing and carpentry
Practical field work

SECOND YEAR.

Agriculture
Zootechnics
Rural economy
Hygiene and prophylaxis
Technology
Mechanics
Viticulture

General agriculture
Arboriculture and horticulture
Agricultural entomology
Plant physiology
Animal anatomy
Zootechnics
Topography
Organic chemistry
Agriculture
Drawing

(First semester.)

Light, heat, and sound
Analytical and agricultural chemistry
Microbiology
Agricultural geology and soil preparation
Stock breeding
Surveying

(Second semester.)

Electricity and climatology
Analytical and agricultural chemistry
Phytopathology and entomology
Soil preparation and crops
Zootechnics (special)
Surveying

THIRD YEAR.

Agriculture
Analytical chemistry
Geology and related sciences
Rural engineering
Applied zoology
Arboriculture
Drawing and rural architecture

Agriculture
Viticulture
Plant pathology
Rural legislation
General zootechnics
Political economy
Agricultural technology
Hydraulics and rural constructions
Veterinary clinics
Applied hygiene

(First semester.)

Agricultural industries
Farm machinery
Stock feeding and poultry raising
Horticulture and fruit raising
Agricultural mechanics
Political economy

(Second semester.)

Agricultural industries
Forestry
Rural economy
Zootechnics (special and veterinary)
Practical arboriculture
Apiculture
Rural constructions (roads, drains, etc.)
Practical work on the farm and in creamery

FOURTH YEAR.

Agricultural chemistry
Microbiology and phytopathology
Rural economy
Zootechnics
Agricultural mechanics
Rural legislation
Technology

Zootechnics (special)
Rural economy and statistics
Mechanics
Hydraulics and constructions
Applied analytical chemistry
Agricultural technology
Forestry

Two grades of titles.—Frequently the course of study is divided into two parts. On the completion of the first, which usually comprises two or three years, the student receives the certificate of skilled agriculturist (*agronomo perito*). If he continues and completes the entire curriculum he becomes an agricultural engineer (*ingeniero agronomo*). Some schools do not grant the final degree until the candidate has spent at least one year in the practice of his profession, during which time he prepares an original scientific paper in some special field of agricultural investigation.

The agricultural career.—Many students, even among the State scholars, do not study with the intention of devoting themselves entirely to agriculture as a profession. As has been remarked in preceding paragraphs, scientific, practical studies are not the most highly esteemed. An agricultural graduate is easily diverted from the vocation of agriculture and is drawn off into political life or into governmental bureaucracy. This is all the more common, since the patronage of the agricultural college comes not so much from families of practical farmers as from the wealthy planters who give little personal attention to the management of their estates, but intrust them to a hired steward (*major-domo*): These families have long furnished the political leaders of the country, and it is but natural that the sons, no matter whether their studies have been in law, agriculture, engineering, or even medicine, should maintain the family tradition and drift into politics. This condition is, however, slowly disappearing. The agricultural college is beginning to appeal to a class of young men who study with the firm intention of following the profession. When they do not possess an independent fortune permitting them to engage in agriculture on their own account, they seek employment on the large estates as managers, become teachers in the "practical agricultural schools," or investigators in the experiment stations.

Primary agricultural schools.—Besides the agricultural college, which is a school of university rank, there exists in Latin America another type of agricultural instruction of a lower grade called the *escuela practica de agricultura*. In some countries it was the first type of agricultural instruction introduced and preceded the college; in others it was established at the same time and placed alongside the higher institution. In many ways the two schools mark the sharp distinctions that exist in the Latin-American social structure. The college is for the sons of gentlemen whose social position calls for a university education, which may be taken in an agricultural college, providing it is of university grade. The practical school, on the other hand, is for the sons of the less fortunate, and is a school of a lower grade both scholastically and socially.



11. AGRICULTURAL SCHOOL, PIRACICABA, BRAZIL.



12. GENERAL BITTENCOURT INSTITUTE, PARA, BRAZIL.



A. GAME OF SOCCER AT THE AGRICULTURAL COLLEGE, PIRACICABA, BRAZIL.



B. BOTANICAL LABORATORY IN AGRICULTURAL COLLEGE, PIRACICABA, BRAZIL.



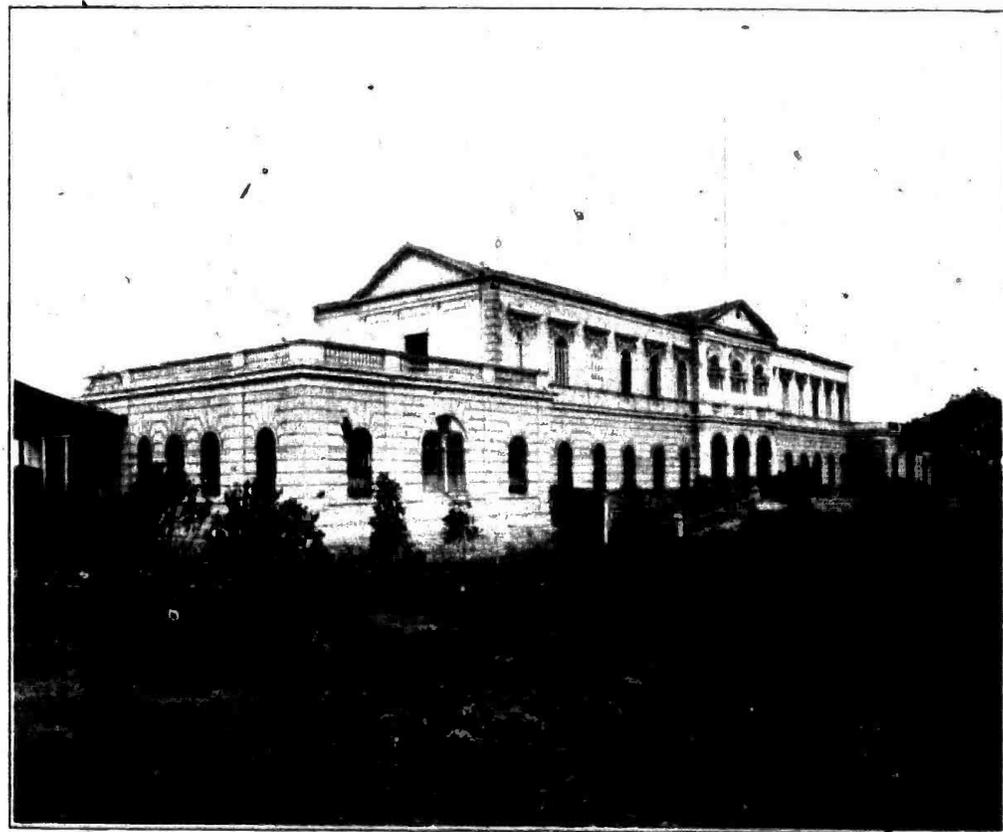
I. FAÇADE OF THE RECITATION HALL OF THE INDIAN SCHOOL AT LA PAZ.



II. A GROUP OF PUPILS OF THE SAME SCHOOL.



A. AGRICULTURAL SCHOOL, SAYAGO, URUGUAY.



B. SCHOOL OF ARTS AND TRADES, LIMA, PERU.

Number of schools.—The practical schools are not limited in number as are the agricultural colleges. In those countries that have made or are making the greatest strides in agriculture they are very numerous. Chile has seven; Argentina, three special and nine general schools, with six others in process of organization. In addition many Provinces in Argentina maintain their own local schools. In the Brazilian Federation at least seven States have one or more each; the State of Sao Paulo has no less than four. Many States maintain also model farms. The Federal Government grants a subsidy to every State or municipality that maintains an experiment or zootechnic station. In the reorganization of its agricultural education in 1907 Mexico adopted the policy of founding many regional schools of practical agriculture. Cuba has undertaken to maintain a school farm (*granja escuela*) in each of her six Provinces. Peru has a practical school in connection with the agricultural college at Lima, and three others in the Provinces.

The advantage of this type of agricultural instruction is beyond all question, and many of the schools are doing a very valuable work. There is, however, a tendency in some countries to increase the number beyond reasonable bounds and to establish them faster than they can be properly equipped. As can be readily imagined, political reasons are often the cause. It is a school for the sons of "the people," and each representative wants one for his district.

Physical equipment.—The plant and equipment of the practical school is simple and modest, as indeed it should be. Nowhere is there the magnificence, the palatial buildings, and abundance of scientific apparatus so often noticeable in the agricultural college. The farm is of varying size, but always ample. Only the staple crops of the region in which the school is located are cultivated. Some schools may almost be said to devote themselves to a single specialty, such as viticulture, grains, horticulture, or stock raising, and forage products. The buildings consist of the necessary farm structures, a principal's home, and a central edifice containing the offices, classrooms, dormitories, dining hall, and culinary department; for it is a boarding school in which the great majority of the pupils are State scholars, selected from the different administrative districts of the territory which the institution serves. The boys are sons of the managers and overseers of the large estates or of the smaller farmers. The last-named class is much the smaller, since unfortunately the small landowner, cultivating his farm with his own hands, is the exception in most parts of Latin America. Large estates supervised by overseers are the rule. The furniture and equipment of the classroom, dormitories, and culinary department are always simple, sometimes even crude. A part of the products of garden and farm is used in the

school; the rest is sold. When the management is good a considerable part of the expenses of the institution, including the *pension* of the students and resident teachers, can be met by the products of the farm.

Course of study.—The curriculum is simple and is designed to be especially practical. It comprises two or three years. Sometimes a preparatory year is prefixed; in other schools a deficient pupil is required to repeat the first year. Nothing is required for admission beyond elementary instruction, which is usually interpreted to mean only reading, writing, and the elements of arithmetic. In some schools which are not in themselves special a pupil may remain a year after finishing the regular course in order to perfect himself in some specialty. During this year his work is wholly practical. The two curricula here reproduced—Santa Catalina in Argentina and Santiago de Chile—represent the highest type of the practical school of agriculture. The former is a dependency of the University of La Plata and is not far from Buenos Aires. Smaller provincial schools would show lower entrance requirements and less advanced studies in the last year. In the Chilean curriculum the hours of theoretic instruction only are indicated, but the time devoted to practical field work can be estimated as much the same as in the Argentine school. The term of the Chilean institution comprises three and one-half years; the last semester, which is not reproduced here, is for the most part a continuation of the technical studies begun in the third year, with the addition of zootechnics and further studies in practical veterinary science.

CURRICULA OF PRACTICAL SCHOOLS OF AGRICULTURE

FIRST YEAR.

| <i>Santa Catalina.</i> | | <i>Santiago de Chile.</i> | |
|--------------------------------------|-----------------|-----------------------------------|-----------------|
| | Hours per week. | | Hours per week. |
| Applied arithmetic and geometry..... | 3 | Mathematics..... | 3 |
| Elements of natural sciences..... | 4 | Spanish..... | 3 |
| Elements of physics..... | 2 | Gymnastic exercises..... | 2 |
| Spanish..... | 2 | Religion..... | 1 |
| Drawing..... | 2 | Elements of physics..... | 2 |
| Laboratory and field work..... | 27 | Commercial arithmetic..... | 2 |
| | | Drawing..... | 3 |
| | | Foreign language..... | 3 |
| | | Zootechnics..... | 4 |
| | | Practical veterinary science..... | 8 |

SECOND YEAR.

| | | | |
|--|----|-------------------------------------|---|
| Agriculture..... | 3 | Mathematics..... | 3 |
| Elements of chemistry..... | 3 | Spanish..... | 3 |
| Elements of practical zootechnics..... | 3 | Gymnastic exercises..... | 2 |
| Orchard and garden products..... | 2 | Religion..... | 1 |
| Arboriculture..... | 3 | Elements of hygiene..... | 1 |
| Aviculture, apiculture, and sericulture..... | 2 | Chemistry..... | 3 |
| Drawing..... | 2 | Accounts..... | 2 |
| Laboratory and field work..... | 27 | Drawing..... | 1 |
| | | Foreign language..... | 3 |
| | | Climatology..... | 2 |
| | | Arboriculture and horticulture..... | 2 |
| | | Practical agriculture..... | 2 |

THIRD YEAR.

| | | | |
|---|----|---|---|
| Agriculture..... | 2 | Mathematics..... | 2 |
| Rural industries..... | 3 | Spanish..... | 2 |
| Rural constructions and machines..... | 2 | Gymnastic exercises..... | 2 |
| Accounts and rural economy..... | 2 | Religion..... | 1 |
| Elements of practical veterinary science..... | 2 | Accounts..... | 2 |
| Elements of agricultural chemistry..... | 2 | Civilization and rural constructions..... | 2 |
| Drawing..... | 2 | Drawing..... | 1 |
| Laboratory and field work..... | 27 | Foreign language..... | 3 |
| | | Plant pathology..... | 3 |
| | | Viticulture..... | 3 |
| | | Wine making..... | 3 |
| | | Agricultural machines..... | 3 |

Other types.—The provincial agricultural institutes in both Argentina and Chile, as well as those in other countries, are much more elementary in character than those whose curricula have been given. In Argentina, where there are two types of primary agricultural education, the general and the special, the elementary and practical character of the former is especially marked. Theoretical instruction is limited to six hours per week. The rest of the student's time is spent in work in field and garden. The special schools, on the other hand, give considerable time to class and laboratory work. They are three in number—Cordoba, for agriculture and stock raising; Mendoza, for viticulture; and Tucuman, with two distinct specialties, arboriculture and the sugar industry. Each of these institutions has a three-year course in addition to a preparatory year, and the curriculum includes such general scientific studies as physics, chemistry, botany, geology, bacteriology, plant pathology, etc., besides courses in drawing, mathematics, and French. Entrance requirements are also greater than in the other class of schools and presuppose the entire elementary school curriculum. In fact, these special schools are but a reduced model of the agricultural college, with all the practical and much of the theoretical work directed toward a single specialization.

Indian schools.—In those countries in which the native Indian race still forms a very considerable portion of the population, the practical agricultural school assumes a different organization, in which agricultural training is only an incident—important, it is true, but after all, only an incident—in the general plan of instruction. The Indian is notably conservative. He clings conscientiously to the customs of his ancestors. He not only spurns the intellectual civilization of the white race, but he prefers his own traditional methods of agriculture and industry. In the few countries in which he has remained dominant he cultivates the soil with the same crude implements, and according to the same primitive methods that were in vogue at the time of the conquest. He has adopted no new industries, and what renders his assimilation still more difficult is the fact that he often retains his native dialect, and learns and uses Spanish only when circumstances actually force him to make this concession.

In recent years a heroic effort has been made in States like Bolivia and Guatemala to penetrate this crust of Indian conservatism and to bring the native population into touch with modern civilization by the establishment of special Indian schools, called Escuelas de Indígenas. The object of these institutions is threefold—to teach the national language, to create a class of artisans, and to inculcate modern methods of agriculture, with the idea that the pupils will become in their native villages schoolmasters and missionaries of modern civilization.

The studies of the school correspond to the triple purpose of the institution. Primary subjects are taught more for the purpose of teaching Spanish than for the subjects themselves. Great emphasis is laid on manual training and elementary agriculture. The curriculum extends over three or four years. The pupils are State scholars and live in the school. This enforced separation from their families and Indian life, together with the constant association with the white man's civilization, is a necessary part of the system. By this means it is hoped to teach him the language and to convince him that there are more efficient methods of agriculture and industry than those in vogue in his native village.

An agricultural normal school.—Another form of systematic practical instruction in agriculture is the new type of normal school evolved in Argentina for the training of teachers for the rural schools. This school has already been described in detail in the chapter on normal education, and is mentioned here only for the sake of completeness and to emphasize its importance as an agency for the dissemination of scientific agricultural knowledge. The introduction of elementary agriculture into the rural school program is favored everywhere. The usefulness of the study depends almost entirely on the character of the instruction, and requires of the rural teacher a very different preparation from what he has hitherto received. The special normal school, founded by the Province of Parana, is becoming a model for other provinces of Argentina, and is a distinct advance in general agricultural education, as it prepares teachers who can make the elementary agricultural program of the rural school a vital part of the system and not a mere incident.

CHAPTER XIII.

INDUSTRIAL EDUCATION.

Interest in industrial education has increased steadily in Latin America during the past thirty or forty years. In the higher forms this has been evidenced by the change, in name or in fact, of the *Facultad de ciencias exactas* into the school of engineering; in the lower forms by the establishment and constant improvement of State-supported trade schools. If their success has not been uniform, it is not due to lack of governmental encouragement, but rather to the peculiar and often unpropitious conditions with which they had to contend. In both faculties and lower schools the first directors and professors were very commonly foreigners. As it was a new type of instruction, it was felt that local talent was neither sufficiently expert nor properly cognizant of the aims and methods of this class of schools, and Europe was called upon for skilled men to introduce and develop the purely technical branches of the new education. The foreigner always labors at a disadvantage. The language is at first a serious handicap, but much more serious is his ignorance of local conditions, habits of thought, hereditary prejudice, and public sentiment. In this particular instance he was at the additional disadvantage of being called to organize and further a type of studies generally regarded as menial by those who laid claim to social or intellectual distinction. In many cases, too, the time was not ripe for the introduction of the industrial school.

Progress in industrial education.—Hampered as it was by traditional prejudices in education and by an insufficient demand for its product, industrial education in Latin America has prospered very unequally. In those countries where industrial progress has been most marked the industrial schools, high and low, have come into public favor and have taken high rank.

In the University of Buenos Aires the engineering school enrolls annually eight or nine hundred students, and in numbers is now third in the university faculties. The engineering schools of Santiago, Montevideo, Lima, and Sao Paulo show a proportionate increase in students and a growing prominence as compared with the other professional faculties.¹

¹ For detailed information concerning engineering schools, their courses of study, equipment, etc., the reader is referred to Chapter VIII, where they are considered as a part of the university system.

Elementary industrial schools.—This chapter is primarily concerned with the lower forms of industrial education. Such institutions are to be found not only in the capitals and larger cities, but in many smaller towns as well. Particularly is this true of the more industrial nations, and if perchance the State or local government has not established the school, the field is often occupied by the teaching orders, especially by the Salesian Brothers, who make a specialty of agricultural, industrial, commercial, and the more practical types of education. The State industrial school for boys is most commonly designated as *La escuela de artes y oficios*; and the type of organization varies but little, except that in some countries it is in whole or in part a boarding school, in others a day school only. Instruction everywhere is practically free. Even the materials used in the workshops are furnished by the Government, which, however, is reimbursed, in part at least, for this outlay from the sale of manufactured articles. In addition, the State offers a certain number of scholarships to poor boys. In the boarding schools these are given in the form of board and lodging in the school itself. Almost everywhere the industrial school is well equipped in the matter of buildings. The very nature of the institution, with its laboratory instruction, necessitates special buildings; and while primary, secondary, or even higher schools may be lodged in remodeled houses, *La escuela de artes y oficios* usually has the honor and advantage of possessing its own building, designed especially for its peculiar needs and uses.

In some places the industrial school was originally established as a penal institution for boys—a reform school; but this type has now disappeared. The industrial feature may be continued in penal institutions, but the *escuela de artes y oficios* is simply a school and nothing more.

In grade it corresponds to the upper classes of the primary school. Pupils are expected to be able to read, write, and perform the simple operations of arithmetic before being admitted, but as industrial training is the principal feature of the school boys are frequently received who are deficient in the common branches and special classes are formed for them. Instruction in nontechnical studies is given throughout the entire course and includes the mother tongue, geography, local history, and arithmetic. A prominent subject is drawing, both free-hand and mechanical, but this becomes almost technical on account of its immediate application to the trades. The length of the course of study varies but slightly in different countries, the extremes being three and five years. One-half the day is devoted to the primary academic studies mentioned above and the other half to work in the shop.

Training for the trades.—Notwithstanding the time given to academic branches, *La escuela de artes y oficios* is in its organiza-

tion and purpose a trades school and not a manual training school. Shopwork is not arranged to afford a comprehensive view of the manual arts or to give a general training. It is specialized from the very first, and the pupil is assigned immediately to the acquisition of a certain trade. Later he may pass to another shop and acquire an allied trade. The number and class of handicrafts vary according to the importance of the school and the character of local industries. All schools teach carpentry, tailoring, shoemaking, blacksmithing, and furniture making; the more pretentious may include engraving, electrical construction, machinery, and industrial chemistry. A great many teach printing and bookbinding, and some of these shops are in reality Government printing offices from which are issued a considerable part of the State publications. The furniture shop is also utilized for the manufacture of school desks and office equipment for other State institutions.

Equipment.—The shops are usually well supplied with machinery and tools; in some the equipment exceeds even the needs of the institution. Organically the shops are the central feature of the industrial school and shop practice the chief business of the pupils. Some industrial schools, however, have deviated from their original purpose and have assumed the character of engineering schools or elementary academies of fine arts, although the pupils, on account of their meager preparation, were not well fitted for such studies.

Students.—The patronage of the *escuela de artes y oficios* comes entirely from the artisan classes of society. The strong social distinctions that exist everywhere in Latin America separate sharply manual from other vocations, and in those countries where modern industrialism has made the least inroads the skilled mechanic enjoys little, if any, social advantage over the common workman. This condition of affairs explains the fact that many pupils discontinue their trades, and, taking advantage of the academic instruction received in the schools, adopt some other occupation, preferring humble clerical posts to more lucrative positions in the trades. This is a condition that will disappear in time, and it has already partially disappeared from those districts where industrial activities have become prominent.

The school at Santiago de Chile.—The central industrial school of Chile, located at the capital, and the chain of Federal institutions in the larger cities of Argentina are of a distinctly higher type. The school of Santiago bears the same common name, but its equipment and instruction are much superior to those of the ordinary *escuela de artes y oficios*. It comprises under one management two separate divisions—the day school and the boarding school; the former of two years, the latter of three and four. The two institutions have separate classrooms and are entirely segregated. Only the shops are common to both divisions, but even here the pupils never meet, since

one section uses the shops in the forenoon and the other in the afternoon. The character of the divisions is quite different. The day pupils are distinctly trades pupils. They come from artisan families, and their object is solely to learn more or less thoroughly a single trade. They very rarely complete the entire course, but leave the school as soon as they can profitably enter upon their vocation. This section corresponds closely to the ordinary industrial school as described in preceding paragraphs.

The other section constitutes the real school, an institution higher in rank than the *escuela de artes y oficios*, and lower than the engineering school. It might be termed a practical school of engineering of the second grade. The pupils are State scholars, drawn from all Provinces in proportion to the population, and selected through a modified form of competitive examination. They must have completed the full course of elementary instruction, or its equivalent, and their preparation at entrance is therefore much in advance of that of pupils in the day section or of those in the provincial industrial schools. During their residence they are under strict, almost military, discipline, and their energies and attention are directed steadily to the work of the school. In fact, they are civilian soldiers preparing for posts of responsibility in the national railways and other State-controlled industries. While great numbers of the graduates are absorbed by governmental activities, they are free to enter private industries. The only obligation assumed at the time of accepting the State scholarship is to continue their studies throughout the entire course of three and four years. If for any reason they do not, the State must be reimbursed by the student or his bondsman. The division of the course into three and four years is effected in a unique and interesting fashion. During the first year the studies and shopwork are the same for all pupils. At the end of this period the most apt are put into a section that continues its studies for three years more, of which the last is devoted to real engineering subjects of an elementary and essentially practical nature. The less proficient pupils are restricted to a shorter course which excludes technical studies and prepares especially for certain trades. Both sections, however, pass through the wood and iron working shops, and thus secure a more general manual training than that offered in the strictly trade school.

Curriculum.—The academic studies of the first year are elementary, comprising commercial arithmetic, Spanish, penmanship, and drawing. The four-year course continues as follows: Second year, elementary algebra and geometry, drawing, hygiene, and English; third year, descriptive geometry, mechanics and graphical statics, machine design, elements of industrial physics, chemistry, and English;

fourth year, mechanics and graphical statics, machine construction, machine design, elements of resistance of materials, and English.

Shop practice in the first year is in wood; in the second, forging and foundry; in the third and fourth, mechanical and electrical.

The three-year students pursue practically the same academic studies, with the exception of those of the fourth year English and mechanics, and their shopwork does not include mechanics.

Pupils in the day section spend seven hours daily in the school, four in elementary academic studies and three in the shops. They have the opportunity of learning any one of a half dozen mechanical trades.

History.—The institution at Santiago has had a long and honorable history, and to it is due in no small measure the industrial progress of Chile. It was established in 1849 and began with 24 pupils. At present there are 300 State scholars in the three and four year courses and 100 in the two-year day-school course. The buildings are valued at \$175,000 and the shop equipment at \$75,000. In different local and international expositions the school has received 22 medals and 36 diplomas of merit. Besides the usual wood and iron working shops, it maintains others for boiler making, bronze work, electricity, and mechanics.

Industrial education in Argentina.—Argentina has planned to found and equip high-grade industrial schools in all the great centers. Already five such schools have been established—one each in the following cities: Buenos Aires, Rosario, Santa Fe, La Plata, and Salta. The institutions all bear the name of Escuela Industrial de la Nación, indicating that they are creations of the Federal Government and independent of the Province in which they may be located. As a result of their national character they are of uniform grade, although they may specialize in the industries most important to the locality. Entrance requirements, the academic branches of the curricula, and the length of term are uniform. Several parallel courses of study are offered, the number varying with the size and resources of the school. The institution at the capital offers four—general mechanics, electricity, industrial chemistry, and general industry. Below is given the curriculum and distribution of hours for each of the six years of the course in general mechanics. The other courses are of equal length and contain an equal amount of practical work.

Curriculum of industrial schools of Argentina.

| Subjects of instruction. | Hours per week. | | | | | |
|--|-----------------|--------------|-------------|--------------|-------------|-------------|
| | First year. | Second year. | Third year. | Fourth year. | Fifth year. | Sixth year. |
| Mother tongue..... | 3 | 3 | | | | |
| Pennmanship..... | 3 | | | | | |
| French, English, German, or Italian..... | 4 | 4 | | | | |
| History and geography..... | 3 | 3 | | | | |
| Natural science..... | 2 | 2 | | | | |
| Free-hand drawing..... | 3 | 3 | | | | |
| Mathematics..... | 6 | 6 | | | | |
| (Geometrical drawing and descriptive geometry..... | | 3 | | 4 | 6 | 6 |
| Machine designs..... | | | | 4 | | |
| Chemical technology..... | | | | | 6 | 6 |
| Physics..... | | | | | 3 | |
| Graphical statics and resistance of materials..... | | | 3 | 4 | | |
| Mechanics and applied kinematics..... | | | | 18 | 2 | |
| Machinery..... | | | | | 3 | 3 |
| Constructions..... | | | | | | 4 |
| Hydraulics..... | | | | | 2 | 3 |
| Electrotechnics..... | | | | | 3 | |
| Heat and its applications to industry..... | | | | 2 | 2 | |
| Photography..... | | | | | | 2 |
| Bookkeeping..... | | | 3 | | | |
| Commercial law and industrial legislation..... | | | | | | 2 |
| Mechanical and metallurgical technology..... | | | | | 3 | 1 |
| Carrying machinery, cranes, etc..... | | | | | 1 | |
| Hydraulic machinery..... | | | | | | 3 |
| Gas motors and steam engines..... | | | | | | 4 |
| Shopwork..... | 12 | 12 | 11 | 10 | 8 | 8 |
| Total..... | 36 | 36 | 36 | 36 | 42 | 41 |

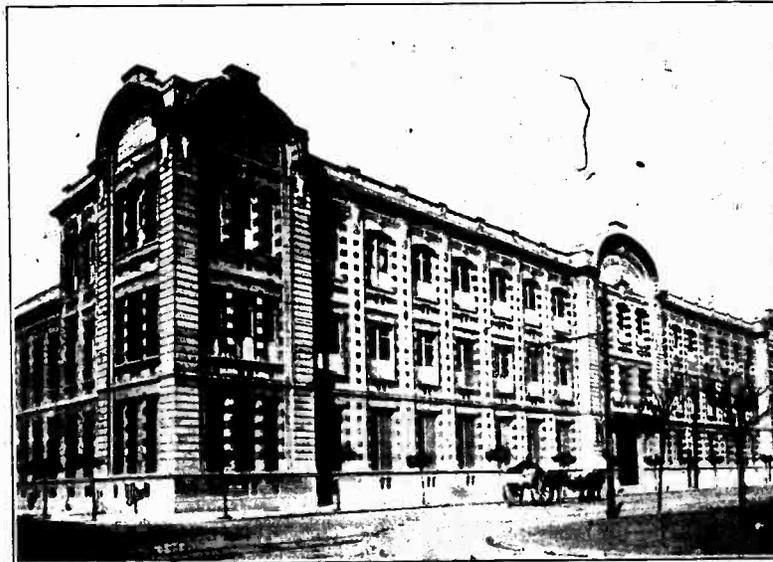
The studies in all courses are practically uniform during the first three years, and not only is this true of the academic portion of the curriculum but also of the practical exercises. Regular progressive shopwork in wood and iron precedes specialization. This policy determines the character of the institution and makes it, like the Chilean school at Santiago, a type of practical engineering college. In fact, a graduate of the school may enter the second year of a faculty of engineering. In the smaller schools, that can not offer as many specialties, the uniform course may extend over as many as four years. The foreign language elected is usually French, on account of its ease for a pupil whose mother tongue is Spanish and on account of the greater proficiency that can be acquired in a given time.

Tuition, fees and scholarships.—Instruction is not entirely gratuitous, but the fees are so small as to be merely nominal. It is an educational policy in Argentina to impose a trifling tuition charge in all schools, even in the primary, where attendance is compulsory. It is argued that the amount is so small that it never constitutes a hardship, but that, small as it is, it makes both pupil and parent feel a greater interest in the school. Even a small contribution creates a sense of ownership, a desire to promote the prosperity of the institution, and a determination to profit by the outlay.

Another national educational policy in Argentina forbids a boarding department in State schools of any grade. The industrial schools are therefore day schools only, and there are no national scholarships.



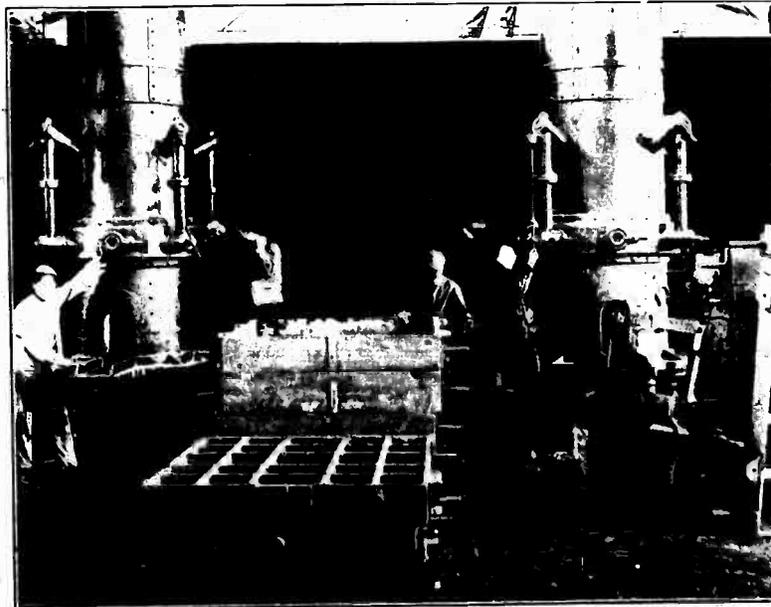
A. INDUSTRIAL SCHOOL, ROSARIO, ARGENTINA.



B. NATIONAL INDUSTRIAL SCHOOL, BUENOS AIRES, ARGENTINA.



1. SCHOOL OF ARTS AND CRAFTS FOR GIRLS, LA SERENA, CHILE.



2. IRON FOUNDRY, SCHOOL OF ARTS AND TRADES, SANTIAGO, CHILE.

However, the Province in which the school is located sometimes grants to boys who live in other towns scholarships sufficient to cover actual living expenses.

Buildings and equipment.—While the curricula, entrance requirements, and policy of all the federal industrial schools are uniform, in material equipment they are at present very unequal. The school of Rosario occupies modest and totally inadequate buildings, originally constructed for other purposes. Congress has, however, voted funds for the erection of new and specially designed buildings, and in a year or two the present unfavorable conditions will be eliminated. In the matter of equipment also the smaller schools suffer in comparison with the institution at the capital, and this is but a corollary to the inadequacy of buildings. Machinery and laboratories can not be installed when floor space is wanting, and the lack of proper buildings is an excuse for not providing funds for improvement of the shops. However, the smaller schools are steadily increasing their facilities and improving their work. The general policy of the federal schools is to be really practical in their training, and this policy is the more vigorously adhered to since the large central institution at the capital sets a standard of efficiency and methods to which all the others aspire. This prevents the more poorly equipped from lapsing into mere theoretical instruction. Good use is made of the facilities and equipment they possess, and, as the basic shopwork for all pupils is the same, better general training can be effected with meager facilities than if specialization came earlier.

The school at Buenos Aires.—In marked contrast to the limited facilities of the smaller schools are the magnificent quarters and thorough equipment of the great institution at the capital. Covering an entire block, three stories in front containing offices, classrooms, laboratories, and library, and one story in the rear occupied by the shops, the building is a splendid tribute to the spirit of modern industrialism which is pervading Argentina of to-day. Classrooms, laboratories, and shops are well equipped. Nearly all the furniture in the building was made in the shops, and much of the machinery was likewise constructed in the school.

Six hundred and sixty-five students were matriculated in 1911. The high standard required and the ease with which pupils with a modicum of industrial training can find ready employment in local industries tend to deplete the upper classes. Five-sixths of the entire enrollment is found in the first three years. Discipline both in class and shop is rigid. The *laissez faire* method of university life is not imitated here. Regular attendance is insisted upon. Written monthly examinations are given on all subjects, and these count equally with the final oral examination toward determining the student's annual classification. A certain unusual rule of administration is not with-

out merit: A student who fails one year is not debarred from re-enrollment, but must pay double fees.

The desire of the Government to encourage industrial education is proved by the liberal appropriations. In 1911 the five schools received \$400,000, of which half went to the school of Buenos Aires.

Industrial schools for women.—Industrial education for women is also widespread in Latin America. Besides the regular industrial schools, instruction in household arts is given in all good normal schools for girls, although in many, for lack of appliances, there are no practical courses in cooking. This feature of the normal school can not, however, be termed industrial education in the strictest sense, since it is designed solely for reproduction on a reduced scale in the primary grades. However, it is a powerful influence for the popularization of the importance of practical things in the life of women and for ennobling manual labor is general.

All the southern nations of South America, and some in the north and in Central America, have established special schools for the industrial education of girls. The Argentine Federal Government maintains no less than five in the national capital and five more in the Provinces. Some Provinces maintain schools of their own. In Chile 28 schools have been organized, besides the normal industrial institute at Santiago, which is at the head of the system and supplies teachers for the technical branches. The Chilean Government expends annually \$200,000 on its industrial schools for girls. This form of education appeals also to private benefactions and to religious societies. In many States schools have been founded and are maintained by these agencies with the help of subsidies from the Government. The large number of industrial schools for girls, State and private, in many countries indicates that a decided social revolution is in progress in Latin America. The sphere of woman is no longer limited to her own household or to domestic service, which was for so long her traditional place in Latin civilization. In many countries of Latin America she has entered business and industrial occupations, not to the same extent, it is true, as in the United States, but in recent years the movement has been greatly accelerated.

Different types.—The industrial school for girls is known in different countries by different names, as *Escuela profesional de niñas*, or *de mujeres*; *Escuela de artes femeniles*; *Escuela practica de niñas*. The difference is not wholly one of name. There are two somewhat different types of institutions, and the same type in different countries is not always designated by the same name. In one the trades feature is especially emphasized; in the other a complete, rounded training in household arts is the aim. The one is a professional school for women; the other a girls' manual training school. The distinctive aims of the two types are not incompatible, although the spirit of the institutions may be quite different. Both offer oppor-

tunity for learning the most common trades, and both likewise afford a general training in household arts.

In the trades school the pupil enters at once upon the study of any one particular line of work which she may choose and for which she is prepared. Often she studies two allied trades. There is no fixed length of curriculum. When the student has mastered a trade she receives a certificate of competency. This may be won in a single year if the student is intelligent, quick to learn, and confines herself to a single subject. As it is more usual, however, to combine two allied trades, two and even three years may be necessary to win the certificate. The trades commonly taught are dressmaking, millinery, and tailoring. Practical cooking is offered wherever the State can be induced to furnish the necessary facilities.

The girls' manual training school, on the other hand, has a fixed curriculum covering usually three years, and the diploma is granted only to those pupils who complete the entire course. In other respects the two types of schools have much in common. The entrance requirements, as in the corresponding school for boys, include only the rudiments of a primary education. A minimum age of 14 years is another requirement. Primary studies are continued. Much attention is given to drawing and to composition in the mother tongue. The best schools always require that a design of the work be made before the task is undertaken, and that a full and careful written description of the process be prepared after its completion. A careful estimate is required of materials used and their cost, so that practical arithmetic is interwoven with handwork.

A very common adjunct to the industrial school for girls is a short commercial course, comprising commercial arithmetic, elements of bookkeeping, and typewriting.

Patronage of industrial schools.—Industrial schools are to be found only in the cities and larger towns where the industrial population is the greatest, but it would be a mistake to assume that all girls enter, or even study to enter, industrial pursuits; many study simply to become proficient in household arts. One problem of industrial education in Latin America is to induce girls of the poorest families to avail themselves of the opportunities offered. Most schools include in their curriculum personal and household hygiene which, with domestic economy as taught in connection with practical work in household arts, would be of incalculable value in the homes of the very poor. However, the great majority of matriculants come from families of artisans and small shopkeepers.

A unique institution.—An institution at Santiago which is directly connected with the departments of manual training and domestic science in the State system of education in Chile deserves special notice, not only because of the important functions it performs but also because it is unique in South America. Its official designation—

Escuela de Educación Física—conveys only an imperfect notion of its manifold activities. In reality it is four schools in one, containing the following departments: Physical culture, domestic science, manual training, and stenography. Instruction is also given in pedagogy and drawing, the latter for application in manual training and the former because the primary purpose of the institution is to prepare teachers in the various special branches for service in the State industrial, normal, and high schools.

The equipment of the institution is remarkably good in all departments: Roomy shops for wood and iron work, well-furnished kitchens with complete culinary apparatus, a large number of typewriters, splendid gymnasium with sufficient apparatus, and a complete set of instruments for physical measurements. The building is of recent construction and thoroughly adapted to the needs of instruction.

The institution was founded in 1906, and has been well patronized from its very inception. The average enrollment during the first year was 220. In 1911 it was 239, of whom 77 were men and 162 women. The school is almost of university grade. Matriculants must either have completed five years of the secondary school program or have graduated from a normal school.

A considerable number of students are teachers in the provincial schools who are granted leave of absence that they may take short, practical courses in their specialty. Vacation courses are also given for the same purpose. The utility of the institution to the State system of schools is unquestioned, and it is preparing an excellent corps of special teachers in domestic science, physical culture, and manual training. The policy of the school is intensive study and much practical application. The full course of study in each department extends over only two years with 14 and 15 hours per week. During the last year there is given a course in methods with practice lessons in order to prepare the student for teaching the particular subject.

Another unique type.—Rio de Janeiro possesses a school of arts and crafts which differs materially from the accepted type. It is not a State institution, but its public utility is recognized by the Government and it receives an annual subsidy. The association that maintains the school bears the name of La Sociedade Propagadora das Bellas Artes, and this fact in itself gives a hint as to the character of the institution. The school is known as the Lyceo de Artes e Officios, but its province is not to teach the trades themselves, but rather to make workmen intelligent and efficient in general, and more skillful and artistic in their work. The school maintains no shops in the ordinary sense of the term, but its curriculum contains useful groups of studies for more than 50 callings and trades. A workman is expected to learn his trade through an apprenticeship outside

the school. The latter merely aids by furnishing him the scientific knowledge and arousing artistic feeling. The curriculum comprises courses in applied sciences and in art. The former include arithmetic, algebra, geometry, trigonometry, applied physics, chemistry, and mechanics; the artistic courses comprise drawing in all its forms, arithmetic, sculpture, painting, and engraving. Through a wise selection of subjects related to his particular vocation a workman can prepare himself to pursue his calling with intelligence, and in those vocations that admit the element of beauty, with artistic touch and appreciation. On the trades the influence of the school is supplementary only, not basic, except in so far as scientific knowledge is basic for all vocations. For architecture and the fine arts, the institution offers a complete education both scientific and practical. Classes for men are taught during the day and in the evening, but for women only during the day. The annual enrollment is large and indicates the popular character of the institution. During the year 1911 the matriculants numbered 2,487, of whom 1,987 were men and 500 women. This was an increase of 450 over the enrollment of the preceding year.

The society that maintains the school is unusually interesting in its history, organization, and methods, and is a fine example of what can be done in education by non-State and non-sectarian institutions in Latin America. It was founded toward the middle of the nineteenth century. Its present constitution recognizes eight classes of members. Ever since its organization the titular head has been the chief executive of the nation, and during all its history membership has been counted a signal honor. The great and wealthy have considered it a privilege to contribute to its support. Regular members pay an initiation fee and small monthly dues. These moneys, together with gifts, endowments, and the State subsidy, constitute the revenue of the society. The teaching staff is chosen from the membership. No salaries are paid the instructors, but they are exempt from the payment of dues, and through length and regularity of service rise to the position of honorary membership. In its origin the society clearly recognized the principle of cooperation in education; children of members paid no tuition, but the same privilege was later extended to other matriculants, so that now instruction is gratuitous for all.

The constitution of the society is not a model that could be generally copied. Local conditions and a certain social prestige acquired at its very foundation have no doubt contributed to its success, but the principle of private secular initiative which it embodies constitutes a pleasing variation in the general uniformity of State or religious organization of higher and special education in Latin America.

PART III. GENERAL EDUCATIONAL TOPICS.

CHAPTER XIV.

COEDUCATION.

Tradition in Latin America was at one time wholly opposed to the coeducation of the sexes; indeed, it was very generally hostile to any education for girls, except the very imperfect type given in the old convents. The past half century, however, has produced remarkable changes in public opinion in this regard, and school customs of today, even in the most conservative countries, bear little resemblance to those of two generations ago. In the first place, the secular education of girls is everywhere recognized as a duty of the State, equally with that of boys. Nor is their schooling confined to the elementary grades; secondary education also, in some form, is provided for girls.

While it is universally admitted that the State's duty is to provide instruction for all the youth of the nation, without distinction of sex, the organization of schools in reference to the sexes and public sentiment in regard to coeducation are far from uniform. In general practice each sex has its own school, but the exceptions to the rule are very numerous and are often found where least expected.

In elementary schools the practice differs as between town and country. In the larger centers the sexes are usually grouped in separate schools from the very first, or, at least, after the primary grade. In towns the number of pupils and teachers permit segregation without any serious economic loss. In the hamlets, however, there are not always sufficient children to form two full parallel classes in all grades. Moreover, the village and rural schools are usually of an elementary character, comprising perhaps only three or four grades. They are, in fact, but primary schools, and the tender age of the pupils does not antagonize the general sentiment against coeducation. Besides, the economic and material difficulties of maintaining two parallel schools with a small enrollment would be insurmountable. Some States, however, forbid the enrollment in mixed classes of boys beyond a designated age, which varies from 10 to 12.

Some statistics will indicate the variance in custom that exists in different countries in regard to coeducation in public primary schools. The figures in the table are taken from the latest available reports, but are not all for the same year. Notwithstanding this disadvantage, they represent accurately the proportion of the various types in any one country and the wide divergence between different countries.

Coeducation.

| Countries. | Schools for boys. | Schools for girls. | Number coeducational. | Total. |
|---|-------------------|--------------------|-----------------------|--------|
| Ecuador..... | 596 | 500 | 92 | 1,197 |
| Salvador..... | 203 | 200 | 83 | 486 |
| Guatemala..... | 521 | 454 | 283 | 1,258 |
| Costa Rica..... | 33 | 32 | 272 | 337 |
| Uruguay..... | 59 | 52 | 692 | 793 |
| Mexico (Federal and State schools)..... | 2,977 | 1,484 | 1,062 | 5,483 |
| Mexico (local schools)..... | 1,426 | 783 | 750 | 2,959 |
| Chile (urban)..... | 166 | 184 | 201 | 551 |
| Chile (rural)..... | 330 | 133 | 1,225 | 1,688 |
| Argentina..... | 412 | 287 | 4,140 | 4,839 |
| Buenos Aires (city)..... | 50 | 97 | 42 | 189 |
| Buenos Aires (Province)..... | 64 | 6 | 1,573 | 1,643 |
| Province of Entre Ríos, Argentina..... | 15 | 4 | 341 | 360 |
| Province of Santa Fe, Argentina..... | 26 | 12 | 318 | 356 |

Even in the countries where the proportion of mixed schools is the largest coeducation is practiced chiefly in the country and villages. This is clearly shown in the statistics from Chile, where the schools are classified as urban or rural. Coeducation has acquired greater favor in Argentina than in any other nation, but even there the difference in custom between city and country is still marked, and in order to show this divergence figures are given separately for the capital alone and for several Provinces. The proportion also varies as between Provinces. In the Province of Santa Fe there is one city of two or three hundred thousand inhabitants and another of thirty or forty thousand. In this Province the proportion of mixed schools is far below the average. In the Province of Entre Ríos there is only one large town, and, besides, the sentiment in favor of coeducation is very marked even in the town itself. The detailed statistics given below for Uruguay portray very accurately the prevailing custom throughout Latin America. The table shows the division of schools into rural, first class (3 or 4 grades), second class (4 or 5 grades), and third class (a complete elementary school). It also shows separately Montevideo (including city and Province) and the entire Republic. Argentina, Costa Rica, and some States of Mexico are the only parts of Latin America that would give statistics more favorable for coeducation in public elementary schools.

Coeducation in Uruguay.

| | Schools for boys. | Schools for girls. | Mixed schools. | Total. |
|--------------------------|-------------------|--------------------|----------------|--------|
| <i>Montevideo.</i> | | | | |
| Rural..... | | | 20 | 20 |
| First class..... | | | 16 | 16 |
| Second class..... | 18 | 1 | 20 | 39 |
| Third class..... | 1 | 1 | | 2 |
| Total schools..... | 19 | 2 | 65 | 86 |
| <i>Uruguay (entire).</i> | | | | |
| Rural..... | 5 | 5 | 554 | 564 |
| First class..... | 3 | 2 | 71 | 76 |
| Second class..... | 69 | 43 | 37 | 149 |
| Third class..... | 2 | 2 | | 4 |
| Total schools..... | 79 | 52 | 662 | 793 |

In regular secondary instruction there is no coeducation, except in rare instances. The State maintains one set of liceos for boys and another for girls, although the course of study is practically the same in both. Economic reasons may, however, bring about a change in the policy. Already there are some signs of innovation. A few high schools in Argentina admit both sexes, and in Costa Rica girls who have completed the curriculum of the girls' high school, which is not so extensive as that of the boys', may continue their studies in the liceo. In some other places the same building is used for both sexes, but they are organized with different classes, and even the hours may be different, one sex in the forenoon, another in the afternoon.

In the universities.—The State universities are open to women, and in this grade of education the old traditions and prejudices against coeducation have broken down almost everywhere. It is true that women do not enroll in the schools of law and engineering, but they are at liberty to do so if they choose. In other faculties, however, they are present, even in the most conservative countries, and in many universities their number is very considerable. Wherever the faculty of letters has been retained there will be found some women matriculants, and where this faculty has become, either in name or in fact, a higher normal school the number of women students has increased from year to year, until now they constitute a decisive majority of the entire enrollment. This is the situation at present at Santiago, Buenos Aires, and La Plata, and so natural does it appear that it has ceased to cause comment. It is, however, in the medical faculty and in the related schools of pharmacy and dentistry that the presence of women is most marked. The actual number in this department exceeds that in the faculty of letters, but the proportion is not so great, since there is a much larger enrollment of men. The history of the admission of women into the university has been much the

same in Spanish America as elsewhere. It was first a special privilege. The complete secularization of the universities prevented any discrimination; the institution was legally open to all. The number of women gradually increased. Their presence was at first a curiosity, but in time became a matter of indifference, and later an accepted fact. In its every phase the movement was prompted by economic motives only. There was no woman question involved. It was not from a desire to share men's education that the women came to the university. Certain vocations were opened to them through social and economic evolution, and they resorted to the university, since it was the only institution that afforded the opportunities of sufficient preparation.

Results.—It does not appear that the men students exhibited pronounced animosity to the enrollment of women in any of the university departments, nor does the presence of the latter seem to have given rise to special problems, either academic or social. The common report is that the young women have comported themselves with dignity and maintained the most natural relations of comradeship with their classmates. The same is true in the few institutions of secondary education where coeducation exists. After the first year of the experiment in the upper grades of the national high school of Costa Rica, the principal reported that the presence of the young women, instead of injecting new problems into the discipline of the school, had exercised a decidedly good effect.

An economic movement.—The large number of women students in certain departments of the universities is astonishing, considering the long tradition and pronounced prejudice against coeducation in general in Latin countries and the comparative rarity of the practice in higher elementary schools even to-day in Latin America. It should be noticed that the movement is, in one respect, quite different from that in North America. In the United States it is in the college of liberal arts that the enrollment of women has grown prodigiously during the last generation. The motive on the part of the majority is a desire for a higher general education without reference to its application to any particular vocation. In Latin America, on the other hand, it is the vocational departments that women have invaded. They study to be teachers, physicians, pharmacists, or dentists. If they were seeking a general literary education, they would enroll in the faculty of social and political sciences, which offers more cultural studies than any other department of the university, but this is precisely where none are found. Their presence in such large numbers in the faculty of letters and philosophy in Santiago, Buenos Aires, and in the corresponding department of La Plata is because they can there prepare for teaching. In this

case, as in the others, it is professional, not general, education that they seek.

In industrial schools.—The industrial schools are nowhere coeducational. The only exception is the Escuela de Educación Física of Santiago, and this is explained by the fact that it is practically a normal school, preparing teachers for physical culture, manual training, and household arts for the various secondary, normal, and industrial schools of the nation. Even here the class and laboratory instruction is, in the very nature of the studies, separate for the two sexes.

In commercial schools.—Curiously enough, in commercial education, where one might expect more frequent instances of coeducation, it is not found except in Brazil, where organized, public commercial instruction has been less developed than in most countries. The school in Sao Paulo and one in Rio de Janeiro admit both sexes, and the latter has a relatively large enrollment of women. Another exception is the commercial section of the high school of San José, in Costa Rica; but the reason for the introduction of coeducation there was purely economic. The city is not large enough to warrant separate schools, with the additional expense of installation and equipment.

Coeducation in normal schools.—In normal education, except in the higher normal schools, as mentioned above, the sexes are usually educated and trained in separate institutions. Since normal schools are most often State boarding schools, coeducation is less feasible than in other institutions. Even in countries where the normal is a day school only, the general custom is to provide separate institutions for the sexes. However, the school of Rio de Janeiro is coeducational, and the Sao Paulo normal school has an evening course for young men. The single normal school as yet established in Bolivia, and located in the ancient and conservative city of Sucre, is also coeducational.

In Argentina the normal schools of the capital and larger provincial cities are for one sex only. Of the more than 60 normal schools supported by the Argentina National Government, 24 are for women and 34 for both sexes. There is no doubt that the coeducational normal schools in the Provinces are thoroughly successful, and in the towns in which they are located public sentiment is decidedly in their favor. Their establishment was due partly to reasons of public economy and partly to the preponderating influence of North Americans in this branch of public instruction at the time of its introduction. But notwithstanding its original impetus and its continued success where tried, the policy of coeducation in Argentina normal schools does not seem to have gained force. The two types will

doubtless continue in much the same relative number as at present. The capital and larger cities are not likely to be soon won over to the coeducational normal school, especially when segregation is the rule in other forms of secondary instruction. However, the presence of young women in the universities and in the higher normal school of Buenos Aires may in time affect the general sentiment on this subject even in the large centers. At all events the coeducational normal schools in the Provinces have promoted the practice of coeducation in elementary schools—a practice much more common in Argentina than in other Latin-American countries.

CHAPTER XV.

ANCIENT LANGUAGES.

In general it may be stated that the study of ancient languages in Spanish America has been eliminated. The few exceptions, which will be considered later, do no more than emphasize the rule. At first thought it is a subject of wonder that nations whose common speech is descended in direct and unmixed line from the Latin, the great learned language of Europe during so many centuries, should have relinquished this together with the remote classic tongues of antiquity. One would suppose that racial pride, to say nothing of philological reasons, would have constrained the Neo-Latins of the New World to retain the subject very generally, and even to foster it more jealously than is done by Anglo-Saxon and Germanic nations. School tradition, too, should have aided the cause of Latin, to say nothing of Greek. Custom is almost as dominating in the school as in law and religion, and Iberian tradition was and continues to be strong in favor of the retention of the ancient classical languages. But notwithstanding reasons of kinship of speech, pride of race, and scholastic tradition, Latin, as well as Greek, has almost wholly disappeared from the curricula of South and Central American educational institutions.

One reason for the elimination of Latin is neither hard to find nor difficult to state. It is the antagonism, either open or latent, which exists almost everywhere between state and church. So self-explanatory is this reason that every intelligent Latin-American, when asked why Latin has been discarded in the schools, immediately and unhesitatingly offers this obvious explanation. Others there are, but this one is so patent that it is apparent to all.

Up to the time of their independence, Latin-American countries relied entirely on the church for the establishment and maintenance of schools. The local priest had oversight of the primary school, if there was one. Religious orders maintained institutions of secondary grade, and the colonial universities all owed their foundation to the church. In the struggle for independence, the clergy very generally favored the colonies, for it was not Spain the Catholic against which they first rebelled, but against Spain, the subject of Napoleon; the man who had despoiled the church and virtually imprisoned the Pope. The formation of the independent republics did not at first

change the status of education. During the first decades of the new era the religious orders continued in charge of the schools, high and low, to the entire satisfaction of all concerned. The State willingly granted subsidies for their improvement and extension. But during the latter half of the nineteenth century conditions changed. The idea of secular education, which should be free to all and required of all developed in Latin America, as it had slowly developed in Latin Europe. Education by the state, for the state, without reference to the ecclesiastical organization or to specific religious instruction, was abhorrent to the tenets of the church, and it resisted to the full extent of its power, but in America, as in Europe, the state triumphed. Public secular primary schools were first established, then high schools, and the universities also were in time wholly secularized. This struggle long continued alienated and embittered the two powers, and the doctrine of complete separation of church and state gained added force. It is a bit fantastic that the animosity should be reflected in school curricula, but such proved to be the outcome. Since the state had undertaken public instruction, it must perforce make its schools popular. The church schools had remained classical and conservative. The state, in contrast, made its schools scientific and practical. Latin was the central, all-pervading feature of ecclesiastical education. In order to discredit this education, the study of Latin was decried. Latin was the official language of the church; to teach it in the secular school was almost like teaching an ecclesiastical subject. Again, if Latin were recognized as an important study, the state educator could not compete with the clerical, since the best Latinists were the clergy themselves and the members of the religious teaching orders, and to admit them into the secular teaching corps and to give Latin its pristine position in the rôle of education would be but to transform the new secular system into the old ecclesiastical school.

The outcome of the struggle was the entire elimination of Latin from State-supported and subsidized schools, and when it was no longer required, or even "credited," for the baccalaureate—a State-conferred degree—it naturally disappeared from the private schools as well. Latin is not included in the curricula of secondary schools, much less in primary, in any of the following countries: Argentina, Bolivia, Chile, Costa Rica, Cuba, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Salvador, and Uruguay. Haiti and Colombia maintain two classes of secondary schools, the classical and the modern. In his last report the minister of public instruction of Colombia, although agreeing to the retention of the classical school, urges the further development of the modern. Some Venezuelan high schools offer courses in Latin, but the studies are elementary, embracing only the rudiments of the

grammar and simple translation. In some countries it is positively forbidden by law to teach the subject in schools. Exception is always made of the *seminarios* for the education of priests. The disappearance of the classic language was not always effected without a contest. Aside from the clerical influence many educators trained under the old system recognized the value of the subject in any scheme of education and fought valiantly for its retention. Some States wavered in their policy; under one régime it was abolished; under another, restored; only to be cast out again when its opponents returned to power. Argentina fluctuated many years in her policy; Uruguay but recently discarded the subject.

In the universities there may be, and usually are, courses of lectures on the history of classic literatures, but these are given in the mother tongue and do not presuppose the reading of these literatures in the original by the students. In the Instituto Pedagógico of Chile, which, as stated above, is the only section of the faculty of letters yet organized, an elementary course of three years in Latin is required of those preparing to teach Spanish and French; but even here Latin is not taught for the sake of Latin, but as a suitable background for the scientific study of Spanish or French grammar. The same arrangement obtains in the faculty of philosophy in the University of Buenos Aires, which is also in fact, although not in name, a higher normal school. Elementary courses in Greek are also offered in the University of Buenos Aires.

In many institutions educators recognize the very great value of Latin in any extended study of Spanish, especially for future teachers of the mother tongue, and some attempt to evade the school regulation by introducing a short course in "linguistics," which in practice becomes a study of word formation and the morphology of Latin. But these studies are only primary; even those in the higher normal schools are exceedingly elementary and confined to small groups of students, so that the opening statement of this chapter that instruction in Latin had generally disappeared in Spanish America remains nevertheless true.

A reason other than the clerical has militated against Latin—a reason interwoven to a certain extent with the question of church and more difficult both of appreciation and expression, but none the less potent. The Spanish American has great admiration for and faith in the efficacy of all things modern. When he has applied to any object or idea the epithet of *moderno*, he has expressed the highest possible appreciation. The latest ideas in philosophy, in sociology, in education find nowhere more ready and earnest disciples than in South America. This trait of character, joined with his confidence in the power of education to reform undesirable conditions and to advance the material and social status of the nations, makes him

seek earnestly the most advanced theories. To him Latin was an antique, like the fine old massive furniture of his colonial ancestors which he is prone to discard in favor of the lighter and newer styles. Western Europe was developing certain types of education in which the classics were replaced by scientific studies. The Spanish-American argues that the school must regenerate the nation, advance civilization, develop the material resources of the country, and bring it into touch with its most progressive neighbors. In order to perform this mission, it must use the most effective means. In this utilitarian theory Latin could not compete with sciences and modern languages, and it was forced to the wall.

The Portuguese branch of Latin America presents a notable exception in its treatment of the classics. In the Brazilian secondary school curriculum, linguistic and humanistic subjects are prominent, and both Latin and Greek find a place. There is no election in the course and no alternate line of study; all pupils conform to the same curriculum and study the classics regardless of their inclination or purpose in life. To be sure the course is not extensive, only five hours per week of Latin and three of Greek in the last two years, but it must not be forgotten that a pupil to whom Portuguese is the mother tongue is capable of acquiring a considerable facility in Latin in a relatively short time. This course of study is not confined to the few principal city high schools of Brazil, but is found also in the smaller towns, since the law prior to 1911 set a standard and required all *colegios* to conform to the model of the large school at Rio de Janeiro in order to confer the degree of *bacharel*. No provision is made for advanced study of the classics outside the theological seminaries since, as noted in the chapter treating of universities, there exists in Brazil no faculties of philosophy and letters.

CHAPTER XVI.

MODERN LANGUAGES.

In Latin-American schools a very large and honorable place is accorded to the study of modern foreign languages. In Guatemala and Mexico such study is even introduced into the elementary grades. Fortunately this practice is exceptional. It is in the secondary and special schools that modern languages receive an attention that in comparison with North American practices seems excessive.

In secondary education.—In the regular secondary school (*liceo* or *colegio*) two languages are always taught, running usually through three or four years. Often a third is introduced in the last years. The following table conveys at a glance the languages offered in secondary schools in certain representative countries and the time given to each. The curriculum is uniform for all pupils, no election being permitted.

Modern languages in secondary schools.

| Countries. | Languages. | Number of years. | Average hours per week. |
|-----------------|-------------------------|------------------|-------------------------|
| Argentina..... | French..... | 3 | 4 |
| | English..... | 4 | 3 |
| | Italian..... | 2 | 2 |
| Chile..... | French..... | 6 | 2 |
| | English or German..... | 6 | 3 |
| Brazil..... | French..... | 4 | 3 |
| | English..... | 4 | 3 |
| | Italian or German..... | 2 | 3 |
| Peru..... | French and English..... | 4 | 5 |
| Costa Rica..... | English..... | 6 | 4 |
| | French..... | 4 | 3 |
| Panama..... | English..... | 6 | 3 |
| | French..... | 4 | 2 |

In the university.—In the university proper no practical linguistic instruction is offered save in the teachers' colleges. The few faculties of letters that subsist may give lecture courses on the history and appreciation of modern literatures, but no lessons in the languages themselves. In the professional schools, however, especially in medicine and engineering, many of the texts used are in French or English. On account of the ease with which a Neo-Latin can read French, that language is preferred, and in medicine, pharmacy, mathematics, and general science the texts are almost wholly in French. The libraries in medical, scientific, and even in law schools

contain more works in French than in all other languages combined. The utility of American and English treatises on subjects of practical engineering is everywhere recognized, and while many are used for reference few are adopted as texts. German is little studied, except in parts of Chile and in the German colonies of Brazil. German scholarship is appreciated, but only a small minority can profit by it at first-hand, and texts in German could very rarely be used. The very general use of French texts in the professional schools is a practical continuation of that language in the university. The same is true of English, but to an extent much less.

In normal schools.—The important position of modern languages in the regular secondary schools of Latin America is not so surprising when one remembers that Latin and Greek have been practically eliminated. Their prominence, however, in special schools is equally marked and is in direct contrast with North American practices. Foreign languages find no place in the ordinary American industrial or normal school. Even in commercial high schools they are not emphasized and are often taught in an impractical manner. In similar schools in Latin America these studies occupy a post of honor. In Chile the primary normal schools require one foreign language throughout the entire course of five years; in Argentina, one for three years, and in the supplementary course for preparing teachers of the normal school itself a second foreign tongue for two years; in Costa Rica, one for five years, another for four; in Brazil, three years of French, but in addition two or three years are required for entrance; in Guatemala, four years each of two languages; in Panama, English five years, French four years; in Salvador, two years each of two languages. In other countries the amount of time given to this subject in proportion to the entire normal course is much the same.

In other schools.—The industrial schools of Argentina require two years of a foreign language. In the Escuela de Artes y Oficios of Santiago de Chile English is required throughout three years. The same is true of the school at Lima. In the industrial school of Bogota both French and English are studied, but for a year only. At Mexico City the national industrial school, in a three-year course, requires either French or English during two years. Even some of the elementary schools of agriculture (*Las escuelas practicas de agricultura*) include in their curriculum a class in French.

In commercial schools.—In commercial schools the central studies are foreign languages, English, French, and German, whose importance is in the order named. In some few localities, as a result of local conditions, Italian is also taught. It matters not whether the institution be a distinct separate commercial school or simply a business section in the high school, the emphasis laid on the practical acquisition of foreign tongues is all-important. For example, in the

commercial section in the Costa Rican national high school English is carried throughout the entire course of five years, with an average of more than four hours per week, and French four years, with an average of three hours per week. In the Business College of Sao Paulo, English and French are required in three years of the four, and in the higher supplementary course of two years elementary courses are given in German, Italian, and Spanish. In the regular course of the higher Argentina commercial schools, six hours per week throughout the entire course of five years are devoted to foreign language study, English, French, and either Italian or German. In the commercial schools of Chile English is required for four years to the extent of six hours per week, and either French or German for three years with four recitations per week.

As can be observed from the data given in the preceding paragraphs, the two most widely studied foreign languages in Latin America are French and English. In the south, French is given by far the greater prominence, while in the countries that surround the Caribbean Sea English is predominant. In commercial studies English is everywhere recognized as the more valuable. German and Italian have been introduced only in localities where immigration from those countries has been considerable, and their presence is due more to political than to other motives.

Reasons for foreign-language study.—The reasons for the unusual importance given to modern foreign-language study are many and varied. One is the tradition in favor of so-called cultural studies, a tradition strong and steadfast in Latin countries. Linguistic studies are humanistic. They appeal strongly to the Latin mind. Language and literature, together with history, philosophy, and logic, were the central features of the old education which was brought from Europe by the first settlers, and they have retained their privileged position largely through the force of tradition. The classics disappeared from causes largely extraneous to educational philosophy, and it was but natural that the modern tongues should fill the breach. French owes its preeminent place in part to the fact that it is a sister language and easy to acquire. It was also the universal cultured speech at the epoch when the Spanish colonies broke away from the mother country, and Latin America has ever since considered France the leader in Europe, not only in literature and art but also in philosophy and social sciences, and in the battle for civil and religious freedom. English has come with increased commercial relations, and more especially in the countries around the Caribbean on account of their proximity to English America.

Another reason for the emphasis put upon foreign language in the schools is entirely utilitarian. It is the desire of Latin America to get into closer contact with the world and to give to its children the

advantages that are enjoyed by the most progressive nations. Spain is not regarded by her former colonies as a great world power, or the Spanish language as one of the great world speeches. French and English enjoy that distinction, the former on account of its past history and the present prominent place occupied by France in letters, arts, progressive thought, and European politics; the latter because of its wide diffusion, and the ever-increasing importance of Anglo-Saxon industry and commerce. German does not commend itself so strongly because it lacks the historic element of French and the diffusion of English. The Latin American feels that the world's great store of knowledge is embedded in languages other than his own.

In order to become modern, to increase his material prosperity, to give to his America the importance in the world that its extent of territory and its material resources warrant, he must perforce acquire the languages of progressive peoples and learn through them the secrets of progress and prosperity. Whether it be in medicine, in engineering, in pedagogy, in industry, or in the more abstruse sciences of sociology, politics, or theology, he does not feel that he has the most accepted theory or the most exact knowledge unless it bears the trade-mark of a foreign idiom. Secondary-school programs are therefore crowded with modern languages in order that the student may use foreign texts in his professional studies, or even in the high school itself. The primary normal schools include the study of at least one foreign tongue, in order that the teacher may have access to foreign pedagogical treatises and periodicals, and thus know the latest and best educational methods of the progressive nations; in the commercial school unusual emphasis is laid on the acquisition of foreign tongues, not only for the mere sake of intercourse in business relations, but also from the conviction that the knowledge of these tongues will bring increased commercial ability; even the student in the practical industrial and agricultural institutes is thought to be hampered unless he knows the language of at least one nation that has made noted progress in the arts, manufactures, and agrarian pursuits.

Method of instruction.—The manner of teaching foreign languages in Latin America and the extent of the instruction are worthy of remark. The direct method is universally employed, although variations in its application are numerous. The teacher can always speak the language with more or less fluency and exactness, and classroom instruction is given principally in the language studied. Practically all work is done in class in these subjects, as in fact in many others. Since the recitation schedule contains a large number of hours, as is the practice in Europe, little private study is done by the pupil, and what little he does is not new work but merely a

review and development of the theme presented in class. In the earlier lessons in foreign language, objects, mural charts, and pictures are much used, and many schools possess an admirable equipment of this sort of apparatus. Formal grammar is not neglected, but in conformity with the philosophy of the direct method is presented in an inductive manner. Much repetition is used. The exercises are kept for a long time in the simplest forms, and reading texts are of the most elementary character. The study is more than practical; it is entirely utilitarian. Literature is not taught either systematically or incidentally except in the universities. The three, four, five, or even six years that may be devoted to a language in the secondary or special schools are spent exclusively upon the language itself. What little reading is done is done not as literature but as a linguistic study. The result is that the average student has a good practical command of foreign languages. He has missed, however, a rare opportunity for cultural study through a wide reading of the literatures, and this could be attained without sacrificing the practical aim.

CHAPTER XVII.

SCHOOL TEXTS.

Reference has already been made to this subject in connection with foreign languages, but only in so far as it applied to higher and special education. The topic presents, however, in Latin America other phases that deserve consideration. It is not only in advanced studies that the want of good texts is felt. The elementary schools also in some countries are very inadequately provided with these common means of instruction, and even the most progressive nations will admit that there is much room for improvement. A good text is a decided aid—nay, more—an incentive to good method, and, on the other hand, methods are commonly reflected in the texts.

Animosity to texts.—When Spanish America began her aggressive campaign in favor of education, the texts commonly in use were antiquated. Moreover, the old pedagogy encouraged the mnemonic habit. Children did little more than memorize the text and repeat the contents in parrot fashion. In the revulsion against this unpedagogic method, texts were largely abolished. Oral teaching came into vogue. The teacher developed the theme and dictated. The pupil listened and took notes or rather copied verbatim the dictation. Such a method was employed not only in the grades, but in the high, normal, and special schools. The lecture method has always been customary in professional schools. The abolition of texts did not overcome the habit of mnemonic recitation, which was the fault of the teaching and not of the text. The pupil simply reproduced the dictated words instead of the printed words. In time the use of textbooks was in a measure restored, but a certain distrust of them persisted and their quality was not always what might be desired. At present conditions vary enormously. The difficulty of the problem is not appreciated at first glance. It is not simply a question of pedagogy or school management. Political, geographical, and historical considerations are involved in the problem. Spanish America is not one unit. On the contrary, it is broken up into 20 different units, widely separated as regards distance and more widely still as regards intercommunication. Difference of climate and local conditions are also important elements. National rivalries and animosities are other causes of isolation. To a great extent, and certainly to a greater extent than is imagined in North America, each State has led

a separate existence. All have been separated from the mother country on account of their remoteness, lack of communication, and want of mutual sympathy. All have been aided in their material advancement by foreign capital and energy, but in those intellectual matters that concern the mother tongue each nation has been forced to march alone. All this has constituted a serious handicap in the matter of school texts.

If the entire Spanish-speaking world with its seventy-five millions of inhabitants formed an intellectual unit, it would provide a public that would appeal to talent and to the publishing industries. If even the Spanish-American countries, with their more than fifty millions, formed such a unit the incentive would be all powerful. The preparation of texts is a prosaic affair, and both author and publisher look to the pecuniary profits that are likely to accrue. A small public means, under the very best conditions, a small circulation and an increased cost of publication. The former deters the author and publisher, and the latter is a disadvantage to the public. Even the largest of the Spanish-American Republics contains a relatively small population, and as education is not nearly universal in any the circulation of a primary school text, even in the most favored countries, is necessarily limited. Texts for secondary, normal, industrial, and professional schools suffer still more restricted circulation, since the numbers decrease as the grade of instruction rises. Little wonder, then, that foreign texts play such an important rôle in higher education, and are even found in the secondary schools.

A needed reform.—Another method, however, would be an easier, more logical, more rapid, and more patriotic solution of the difficulty, viz, an intellectual union, not official, but based entirely on intellectual sympathy, between the various Spanish-speaking communities. Such a movement will come sooner or later. Already there are signs of its advent. Recent years have witnessed a decided rapprochement between Spain and the Spanish Republics. The intellectual life of the two branches of the Spanish family has everything to gain in this tendency, and the schools would be among the first to profit. The softening of national asperities in Spanish America, the advance in means of rapid intercommunication, and the remarkable enthusiasm in favor of education, now so noticeable in almost all nations, will undoubtedly bring about a community of interest in intellectual matters. International scientific and pedagogical congresses are signs of a new era. The Pan-American association of university students, now in its fourth year, is another indication of the same tendency. Government commissions and self-constituted delegations of teachers are visiting and studying the schools of adjoining countries. State scholarships are granted by some nations for study in other States

that enjoy a reputation for more modern school facilities and methods. As the schoolmen of Spanish America come to know each other better and learn what is being accomplished in sister Republics an edition of a textbook will not be confined to a single country, as is the case at present, and the demand for secondary and university texts will be so extended that publishers will either call for original works or encourage the translation into Spanish of the best foreign texts. Undoubtedly there are two serious obstacles to an early consummation of this program: First, the bitter hostility existing between some countries on account of acute boundary disputes; second, the fact that the most progressive nations in matters of general education are at the two extremities of the long stretch of Spanish-speaking territory that extends from the islands and the Rio Grande on the north to Cape Horn. However, several boundary disputes as threatening as any that remain have been settled amicably in recent years; more accurate geographical knowledge will make some others easier of solution; and the nations are learning that the surest aggrandizement will come through internal development and the universal education of their population. Intercommunication will become more frequent as it becomes more rapid, and it will be easier for the leading States to exercise a beneficent influence over a wider territory.

CHAPTER XVIII.

STUDENT SOCIETIES.

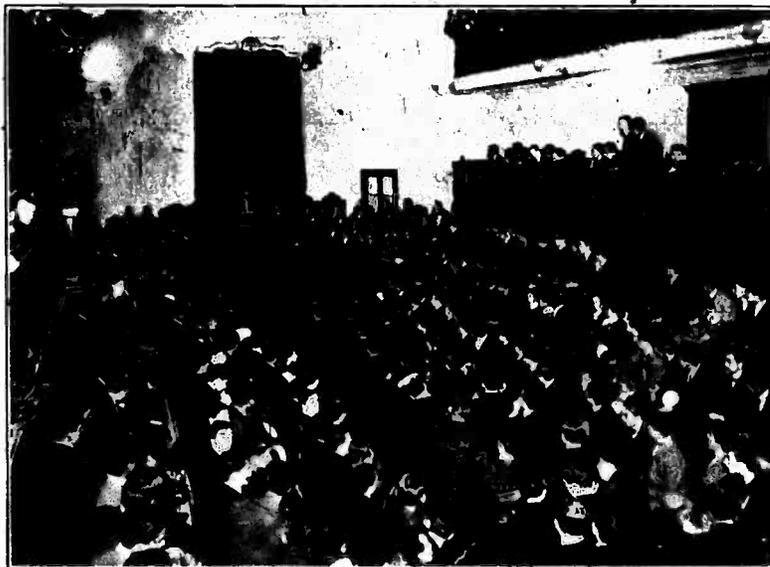
There is nothing in the Latin-American university resembling the Greek-letter societies. Student life is thoroughly democratic, like student life in European universities. There are, however, one or more societies in every institution. Usually there is one in each faculty, and the membership is limited to students of this one department. This was the first form of student association. Later came the federation of the departmental societies into a University Union (Federación Universitaria, or Asociación General de Estudiantes). If there is more than one university center in a country, this organization may in its turn be federated with others, thus forming a broader union that comprises all the student associations of the nation. To complete the series, there was organized a few years since the American Student League (Liga de Estudiantes Americanos), which is international and is intended to embrace all university unions of all the Americas. In addition to its services in educational matters this supreme international federation promises to become an effective agency in the promotion of international peace and amity.

To return to the local societies which form the groundwork of the system, it is interesting to trace the development of their ideals. The original motive for organization within each department was very often the desire to present a united opposition to the faculty in case professors proposed regulations that seemed to the students onerous. Student strikes have not been infrequent in some institutions, and to insure their success a permanent student union was almost a necessity. But the movement was destined to develop nobler aims. The society soon became a semiprofessional association. The law society interested itself in legal questions, or the conditions of the practice of law; the medical society in questions of public hygiene, etc. This brought the societies into cooperation with the respective faculties, instead of fostering an attitude of opposition. Professors were invited to address the society, or a public meeting organized by the society, on questions of general interest.

Other aims were developed to enlist the activities of the societies, such as reduction of cost of student supplies, improvement in the material conditions of student life, better lodging and food, and



I. INTERNATIONAL STUDENTS' CONFERENCE, LIMA, PERU. VIEW OF THE CONFERENCE IN SESSION.



II. INTERNATIONAL STUDENTS' CONFERENCE. RECEPTION AT THE UNIVERSITY OF SAN MARCOS.

conveniences for social fellowship. The university authorities granted the departmental societies rooms in the building, which became student headquarters and in which formal meetings were held. In some universities the societies have developed altruistic tendencies and are trying to be of real service to the community. The most common manifestation of this policy is the organization of series of public lectures on social and economic questions. The societies in the University of Chile organize night schools for workingmen, conduct a propaganda against alcoholism and tuberculosis, and aid in other reforms. The Latin-American student is characteristically idealistic, and it is easy to enlist his support in all measures for the betterment of society.

The University Union may do on a larger scale what is done by the departmental societies, but its chief purpose is to develop student solidarity and to provide a student center. Any student in the institution is eligible for membership and entitled to all the privileges of the association. Students in other professional schools and boys from the high school above a certain age may also become members. Nearly every university has a student clubhouse or at least a suite of rooms. In a very few instances the house is the property of the association, but usually the quarters are rented. The club (centro universitario) contains the offices of the association, a modest lunch room, reading room, and library, an amusement room, perhaps a small gymnasium, and an assembly room large enough for public lectures. The association always publishes a student paper, weekly, fortnightly, or monthly, which however, bears little resemblance to an American college paper. It is not a newspaper, but a serious journal, containing literary and scientific articles, the contributions of both students and professors. In the University of Buenos Aires, where the departmental societies overshadow the University Union, each society publishes its own journal. With its common meeting place, its publication, and its other activities the University Center constitutes an important element in student life. It exercises, moreover, an important influence on the university itself. The union, or the departmental societies, do not hesitate to discuss university policies, and to propose plans for the betterment of the institution. These proposals may refer to the curriculum or to method of instruction, as well as to material matters. It may be that the freedom with which the societies undertake such subjects is due to the fact that the Latin-American professor is not a teacher by profession, and that the student considers his own judgment in matters institutional as good as that of the instructor. The fact that the university is composed almost entirely of professional schools may also explain the prevalence of student interference. Whatever the reason, a student

society experiences no sense of embarrassment, and sees nothing inappropriate in recommending changes of curriculum or advocating policies that in a North American university would be reserved exclusively for the faculty and trustees. Nor do professors resent this attitude. The university spirit resembles that of the early mediæval universities, when teachers and students formed one body.

The final step in the student association movement was taken in 1908 when a federation was formed of all the associations in Latin America. In response to an invitation from the society in Uruguay, delegates from many universities assembled in Montevideo for the first student congress. The meeting was such a success, and a union of students from different nations appeared so desirable, that an international organization was effected and a constitution framed. Delegates were present from Argentina, Bolivia, Brazil, Chile, Guatemala, Paraguay, Peru, and Uruguay. The statutes of the league make every general student society eligible for membership, whether from South, Central, or North America. Besides the general meetings, the congress held departmental meetings under the following divisions: Law, medicine, engineering and architecture, agriculture and zootechnics, commerce, and secondary studies. Among the general topics discussed were: State and private universities, examinations and exemption from examination, specialization and generalization, uniformity of courses and degrees in American universities, student participation in university administration, athletics, scholarships, etc.

The league resolved to hold biennial congresses. The second met at Buenos Aires in 1910 and the third at Lima in 1912. The meeting at Buenos Aires took a further step in perfecting an international organization by creating a permanent central bureau which is to keep in touch with all local associations, maintain a library of student publications, preserve the official records of the league, and arrange the program and other details of the biennial congresses. The bureau was established at Montevideo under the immediate auspices of the Uruguayan association, but the expense of its maintenance is to be distributed among the various societies. The importance of the league and its central bureau in promoting intellectual sympathies throughout the wide area of Latin-America can scarcely be overestimated. A union of effort in educational affairs is certain to have an influence on political relations, and international friendships will be established between many young men who in the course of time will occupy high positions in their respective countries. Students who are promoting the league are not unmindful of the general good results that may follow, as is shown by the watchword of the congresses that have already been held: "The illusions of to-day will be the realities of to-morrow."

The general league is not the only manifestation of international student associations. The University of Bogota, in 1910, called a congress of students from the three republics that formed the ancient confederacy of Bolivar, namely, Colombia, Ecuador, and Venezuela; and in 1911, on the occasion of the centennial of Venezuela, the University of Caracas called a similar congress. Both meetings were eminently successful and it is proposed to continue the association. The universities of Central America have also held a student convention at Tegucigalpa. These three leagues correspond to the three grand geographical divisions of Latin-America, and each can do much good in its own field. However, the general association formed in the south will comprise the others and exert the greatest influence.

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