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PHILIPPINE SCHOOL OF ARTS AND TRADES.

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With the opening of school in June the shops of the Philippine School of Arts and Trades were transferred to the splendid new building on San Marcelino Street, Manila. In the early days of American occupation when the enrollment did not exceed ninety pupils and this number was maintained with difficulty, one of the first superintendents of the school planned a building which he believed would provide for all future needs. The proposed building provided for a floor space approximately equal to that of one of the eight shops in the present plant.

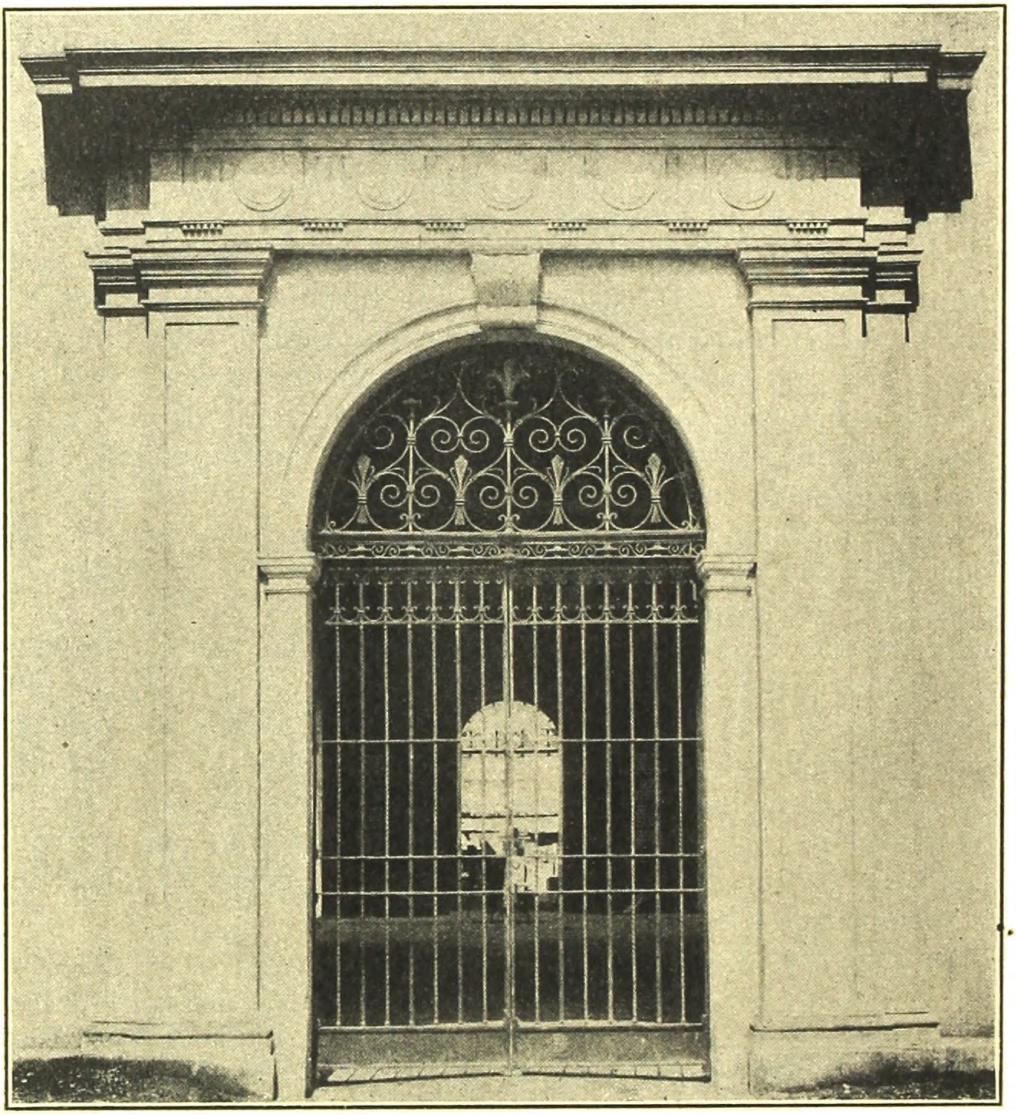
The remarkable growth of the school has been made in the face of many discouraging conditions. In the very beginning difficulty was experienced in getting students. There was a very general disinclination on the part of schoolboys to do hard work, and practically all of the first pupils enrolled in the telegraphy class. Gradually, however, by precept and by example, but especially by making the work practical and interesting, the aversion to manual labor was overcome and the classes were increased to their full capacity. Since that time the difficulty has been in finding room for all the students who applied and numbers have been turned away each year.

In 1907 the school was moved from the exposition buildings to its recent quarters on Calle Arroceros. While these buildings provided more room they were in poor condition and were condemned before they had been occupied a year. Each year efforts were made in vain to obtain appropriations for modern buildings but it was the latter part of 1913 before enough money was set aside to erect the present shop building.

Due to the present financial conditions, it has not been possible to complete the entire group of buildings, and the academic and drafting departments still occupy the old buildings on Arroceros, a condition of affairs far from satisfactory. The shop building provides adequate space for 1,000 pupils, but as the academic

and drawing rooms cannot accommodate the entire number only 850 pupils were admitted at the beginning of the school year.

The accompanying photographs give an excellent idea of the size and form of the new shop building. It is constructed of concrete in the form of a hollow rectangle, 110 meters long and 30 meters wide. The inner court furnishes light and ventilation

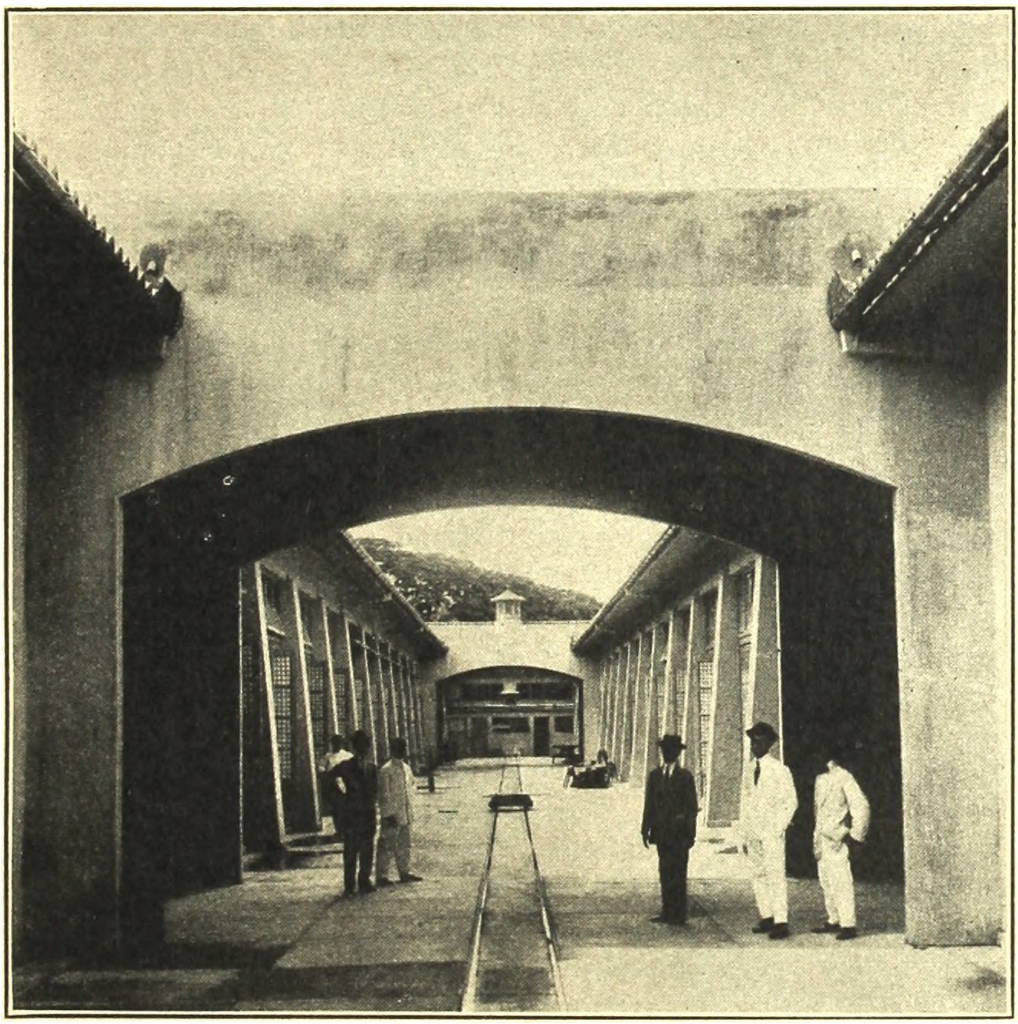


Main entrance, Philippine School of Arts and Trades.

as well as a satisfactory place for an overflow in case the shops are crowded with work. A narrow gauge track extending the entire length of the court and out to the dry kiln and lumber shed makes the rapid transfer of materials a simple matter. The windows are of steel sash with unbreakable wire glass. All machines are run by motors, the current for which will be furnished from the power house of the school. This power house

will contain two engines and a generator; a 65-horsepower Snow crude oil engine, and an 80-horsepower Ideal steam engine. These engines will be used for instruction purposes also.

With the use of the new building the shops are for the first time not crowded and as the equipment furnished is the best obtainable the different courses will be made more practical and development along new lines will be possible. A descrip-



Interior hall, Philippine School of Arts and Trades.

tion of the courses given and the plans made for the year's work should not be out of place.

CABINETMAKING.

The course in cabinetmaking or woodworking is one of the oldest courses in the school and the shops for this work are at present better equipped than any of the others. The course extends over four years and the graduate leaves with a thorough

knowledge of carpentry. The first year is spent in the wood-bench shop, and the exercises prescribed in Cheney's text on woodworking are closely followed. This course has been so planned that sufficient time is allowed for all exercises and special stress is laid on accuracy. Not only do students learn the foundations of woodworking thoroughly but they also learn to care for their tools. Under the guidance of the instructor each student sharpens his own tools and learns to file saws. It is not intended that commercial work shall be undertaken in the wood-bench shop, but when a student completes the year's exercises he is permitted to plan and make for himself simple articles. These articles are given him at the exact cost of materials.

From the wood-bench shop the student goes to the wood-machine shop where he spends the last three years of his course. This shop is splendidly equipped with the very best of machinery. In the six months devoted to wood turning, a knowledge of the lathe as well as of the exercises is required. Then the student begins to apply to practical projects the points he learned in his beginning year. Both wholesale and retail orders are accepted and executed. As proficiency is acquired, students are given training in contracting; emphasis is placed on correct estimates of material and time to be employed. Three months spent in the finishing shop give the student experience in oil, wax, varnish, and rubbed finishes. Shop methods are taught by the actual use of requisition and order forms, and time slips give an exact accounting of time consumed.

In past years the woodworking shop has been somewhat handicapped through the nature of the commercial work received. Rush orders, which proved disastrous to plans for instruction, were hurriedly executed, and while the work turned out was always of the best the students who needed more practice because they were slower or less accurate, were put to work on projects where no special skill was required. Then again, wholesale orders were received, as for example the 1,600 standard school desks made in five weeks for the schools of Manila. After the first hundred desks were finished, the work was monotonous, uninteresting, and destructive rather than instructive for school purposes.

As the work of this shop now has a standard commercial value and is readily salable where articles of first quality of material and workmanship are desired, in the future the objective will be a variety of articles made up for the public salesroom rather than for rush and wholesale orders. When this plan is carried out each article of furniture made will partake of the

Interior of the machine shop, Philippine School of Arts and Trades.

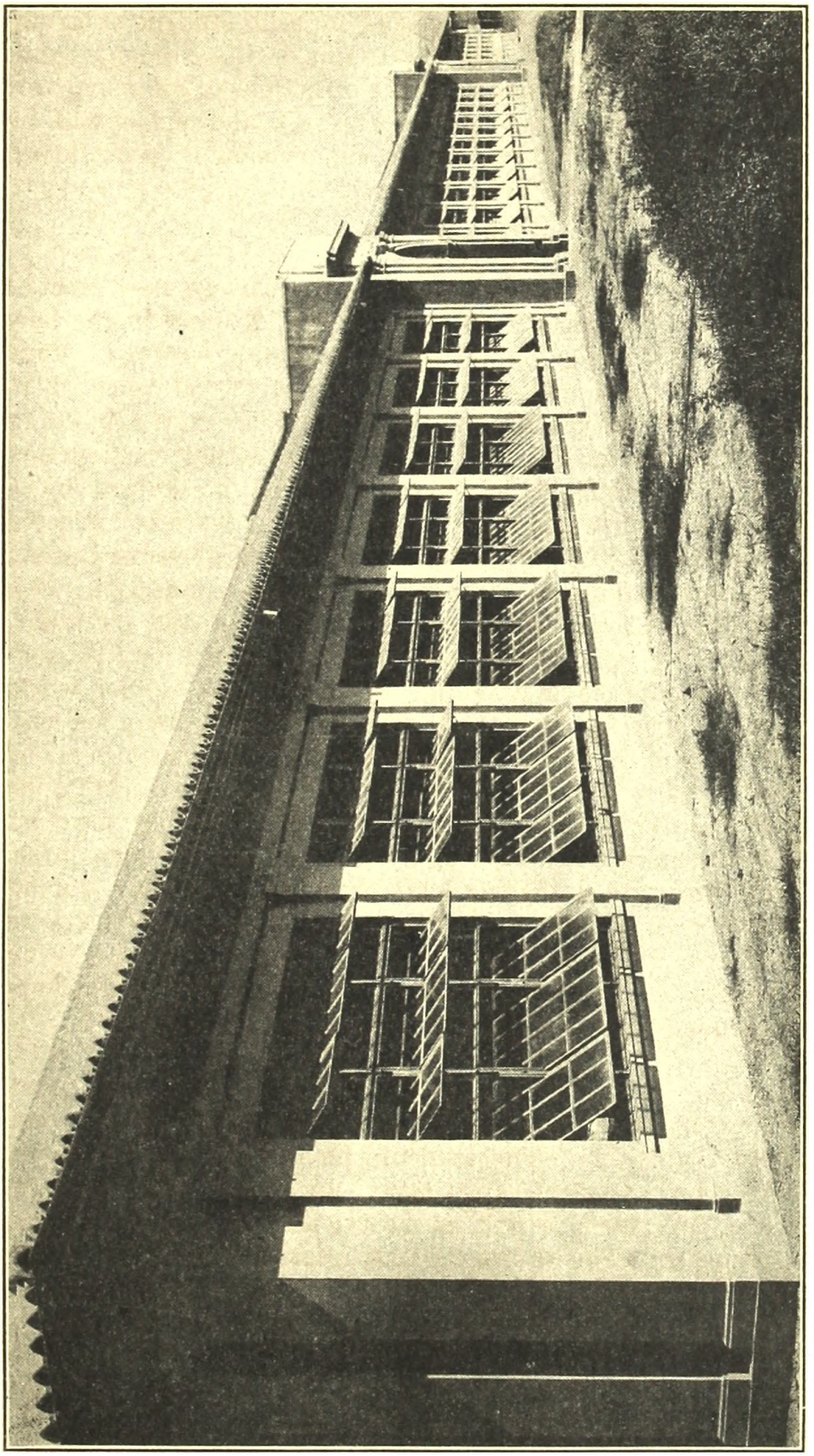
nature of a problem to be worked out by each student or group of students. The object will be to make the student think rather than to follow mechanically the directions of an instructor. In the solution of shop problems interest and pride will be aroused. Where proper suggestive supervision is given along these lines there can be but one result.

BUILDING COURSE.

The building course which is a comparatively new line of work for the school, has worked out splendidly and in the new quarters it will be given greater emphasis than heretofore. Four years of work are required; one year in the wood-bench shop, one year in the wood-machine shop, one year in the building shop working on models, and one year in actual construction work. This department has been hindered heretofore by a lack of outside work. A number of buildings were constructed by the students at the old school, and for several years Bureau of Education buildings were constructed in connection with the Carnival; but the work has been uncertain and irregular, and the greater part of the time has been spent on the construction of model school buildings on a small scale. Such work, while useful, does not give the training necessary for a successful builder, and it is hoped that during the present year by coöperation with the Department of Engineering and Public Works of the City of Manila several excellent projects in actual building work will be carried on by the students in this course. This may mean that the academic side of the course during the fourth year will be neglected, but it is thought better to slight or even drop academic subjects during this year if by so doing the course is made more practical and the students are correspondingly benefited.

BLACKSMITHING.

The new blacksmith shop has been provided with the best equipment obtainable. The students have constructed 12 steel down-draft forges of the latest type. In addition to the steam hammer, a gas furnace and an acetylene welding outfit have been purchased. The course is four years in length although students who complete three years at the school are given credit if they are employed in outside shop work for the fourth year. In addition to the regular course the students in machine shop practice take one year in this shop. The exercises used by the beginner are the most practical that can be devised. Old horseshoes are used for material and from them a number of useful



The new main building of the Philippine School of Arts and Trades.

articles, each demonstrating some phase of practical blacksmithing, are made. Commercial work forms a large part of the course.

MACHINE SHOP PRACTICE.

Practically every one of the graduates of the machine shop is now employed at an excellent wage. In this respect the course has been the most successful in the school. In the new building additional space has been provided and several new machines ordered with a view to giving instruction to a much larger number of pupils. The course covers four years as follows: One year in chipping and filing, one year in blacksmithing, and two years at the machines. The work turned out is varied in character and offers practical training. Commercial orders form a large part of the product of the shop. Each year the fourth-year class constructs a machine, and the workmanship has been so uniformly good that these machines now form a part of the shop equipment.

AUTOMOBILE DRIVING AND REPAIR.

The school owns two automobiles for instruction purposes. Each year about forty pupils obtain licenses. The length of the driving course is dependent on the ability of the pupil, but no pupil is allowed to stay in the department longer than one school year. The repair department formerly was a very busy one but local conditions have made it advisable to reduce the amount of work done and at the present time only repairs for Bureau of Education machines are accepted. The vulcanizing department has been very successful and does a large amount of commercial and Government work.

DRAFTING COURSE.

This four-year secondary course is being given at the old school where conditions are not entirely satisfactory. The outlined course is being followed very closely and commendable results are being secured. With the completion of the academic building where proper lighting conditions can be had, this course will prove very popular and successful.

NORMAL COURSE.

The four-year course for teachers of woodworking has not received the attention it deserves, due to the fact that it has been difficult to provide classes for instruction by students. As the school has now been placed under the superintendent of city

schools, it will be possible to coöperate more closely with the city schools' shops and to afford opportunities to the students of this course to do actual teaching.

PREPARATORY ENGINEERING.

A very few secondary students who desire to enter the University with advanced standing are taking the four-year course in engineering. The students are given some time in all the shops, and in addition take one semester in foundry work at the Bureau of Customs.

The main objects of the training given at the Philippine School of Arts and Trades are practicability, thoroughness, and adaptability to the needs of the country. Along these lines various courses have been offered and later dropped as impractical or unsuited to the particular needs of an oriental community. The ceramics course was well planned and thoroughly carried out but it was eliminated because it did not reach the field for which it was intended. Courses in carving and wheelwrighting met the same fate. Traditional courses have not been and will not be given the respect usually accorded to age. The courses must meet the standards fixed for them here or be set aside. Along this line it is becoming more and more evident that too much stress has been laid upon cabinetmaking and that this course receives much more attention proportionately than it should. As building and ironworking have proved more adaptable to the particular needs of the community, these courses will be developed from now on, and cabinetmaking will be given less attention. No apology is offered for the mistakes that have been made. They have been mistakes necessary to the proper accomplishment of the ends, to provide the most practical and best adapted vocational courses for the people of the Philippines.

The new plant affords a new opportunity to develop. Already courses for a night school are being planned. Plumbing and electrical wiring will receive attention in the night classes while it is very probable that courses in the different branches of ironworking will take a prominent place. With a school running to full capacity day and night the large investment in the plant will be fully justified by the results.

An educator from the Federated Malay States who recently visited the Islands remarked that his study of the trade schools in Java had convinced him of the value of trade courses for the training of hand and mind, but as the work was done with miniature models he doubted its practical value. His visit to

the Philippine School of Arts and Trades, he said, convinced him that this school went further than training the hand and mind in that it gave to its graduates practical training in a real vocation. As a result of his inspection he will recommend for the Federated Malay States a system of trade schools following the Philippine School of Arts and Trades as a model. The compliment is a high one.

SPECIALIZATION IN INDUSTRIAL WORK.

After a pupil has mastered the industrial courses of purely educational value and has taken up work in the commercial courses, specialization cannot be carried too far provided the specialization is along practical lines. At least there is little or no evidence indicating that too much stress has been given to specialization in industrial work. On the contrary in most divisions specialization has not received the attention it deserves. Few will deny that continued and concentrated efforts along a certain line will produce greater results than a division of energy among many different lines. This has been proved by more than one school in the Islands as being particularly true in industrial work. The schools that have specialized in one or two courses have been able to produce a larger output of industrial articles with a corresponding improvement in quality than have those schools that have endeavored to give a larger number of courses. Limiting the kind of articles in a course to one has also proved advantageous. Specialization will not only increase the output of industrial articles in the schools but it will bring the schools a step nearer to their goal—the establishment of an industry among the people of the islands. The training which fits a pupil to do one thing well is of more consequence than that which teaches him to dabble in many different things but fits him for none.

Specialization is still in its infancy and needs encouragement. Over-specialization, is an unknown term. (B. F. B.)