

Buildings *and* Equipment *of* The University *of* British Columbia

Prepared by
The University Extension Committee



The University of British Columbia
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By *U.S.A.* *1940*

ALBANY

Buildings and Equipment OF The University of British Columbia

THE University of British Columbia begins the work of the Session 1925-26 in its new and permanent home at Point Grey. The site, about six miles from the centre of Vancouver, is of ample size, and of rare beauty. The Campus, Farm and Forest lands, an area of more than 500 acres, occupy the western part of the peninsula of Point Grey, which thrusts itself out into the Gulf of Georgia between English Bay and the Fraser River. Thus on three sides the site is surrounded by the sea; and with an uninterrupted view of the Islands of the Gulf and the Olympic Range on the south, the heights of Vancouver Island on the



VIEW OF HOWE SOUND FROM THE CAMPUS

west, and the nearer and more imposing peaks of the Coast Range flanking the fiord of Howe Sound, the location commands a prospect of unrivalled marine and mountain beauty.

The situation of the University has many practical advantages. Surroundings which include mountain and sea, river and forest, furnish exceptional facilities for field work in both the pure and applied sciences. Within a few hours' journey from the University are smelters, coal mines, logging camps, saw mills, pulp and paper mills, hydro-electric installations, grain elevators and numerous manufacturing establishments, besides some of the largest metal mines and one of the largest ore-reducing plants in the British Empire. Furthermore, the close proximity of Vancouver is a great asset for technical and industrial study. Vancouver is the commercial centre of the Province, the terminus of several transcontinental railways, and a rapidly growing world port, and the many industrial plants which are thus within easy reach, are generously opened to students of engineering for study and demonstration. In addition, students of Economics and Sociology have at their disposal not only the materials for study that are ordinarily available in a large city, but also those special advantages which attach



CLEARING THE LAND

only to a Pacific Port, where the Orient and Occident meet and mingle; while good hospitals and numerous nursing agencies give excellent opportunity for training to students in Nursing and Public Health. The location is likewise well adapted for investigations in agriculture, the soil in the immediate vicinity being typical of heavily timbered upland coast soils, while close at hand are the rich alluvial lands of the Delta. Students of Agriculture enjoy the fur-

ther advantage of having within easy reach meat packing houses, milk depots and condensers, and fruit and vegetable canneries.

Nearly all universities have, like Topsy in "Uncle Tom's Cabin," "jest growed." In the case of nearly all European and most American universities, no one could foresee, at the time of their establishment, many of the conditions that are essential and governing factors of a 20th century institution of higher learning. The amazing developments in the physical sciences, and the provision of laboratories necessary for their study were things quite beyond the horizon of their vision. So, too, was the consideration which all modern universities must face, that facilities for higher education must be provided, not alone for the sons and daughters of the wealthy, but for every class of the community. Instead of considering the needs of a few hundred students, the modern university must answer the demands of thousands. College curricula include not alone divinity, law and "the humanities," but have in view the most practical activities of every-day life, —in fact, the scope of a university today is as broad as life itself. All the older institutions labor under disabilities owing to the unexpected and unexampled developments in university work. Buildings were erected as growth demanded and funds permitted, but few were so designed as to leave room



THE FIRST BUILDING ON THE CAMPUS

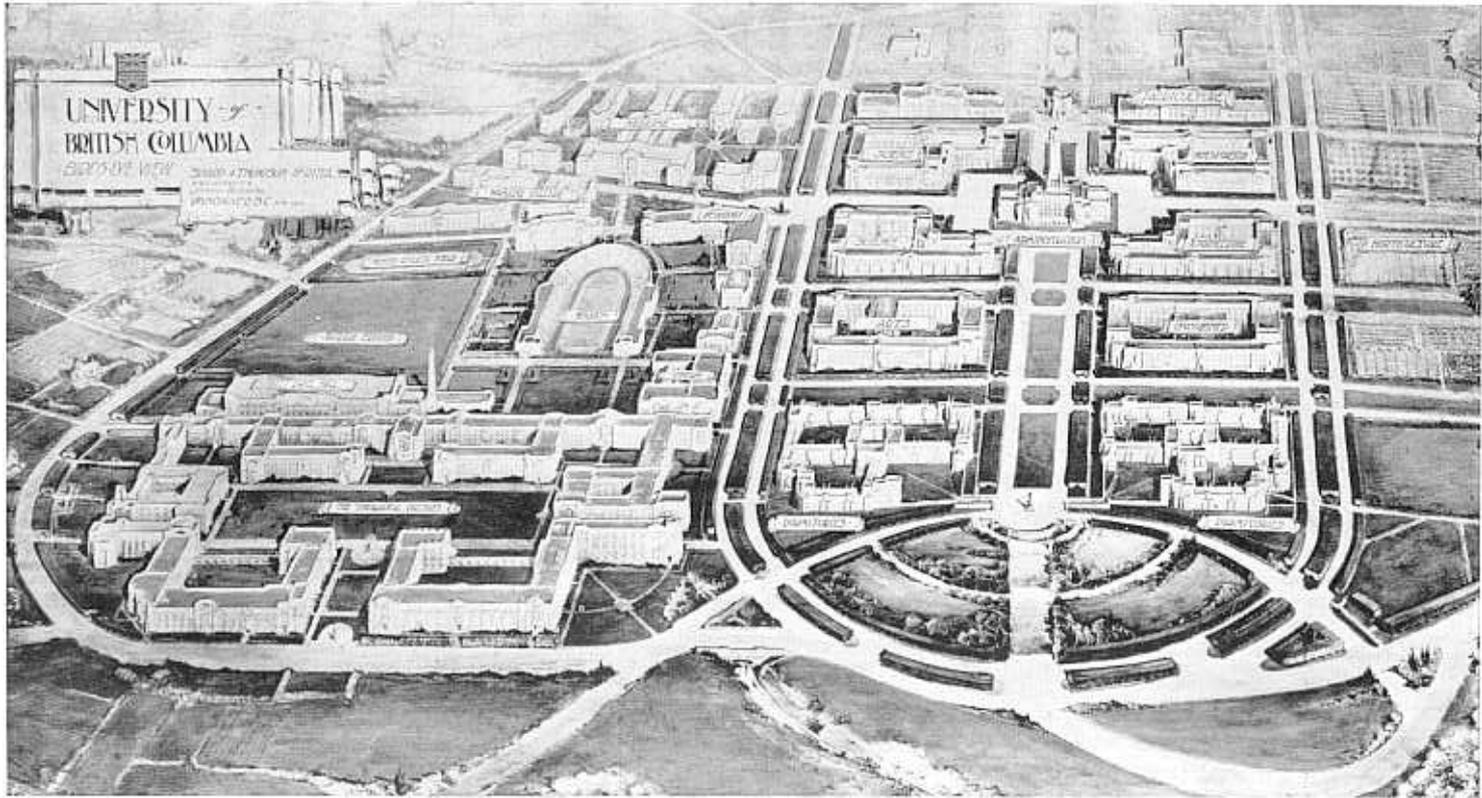


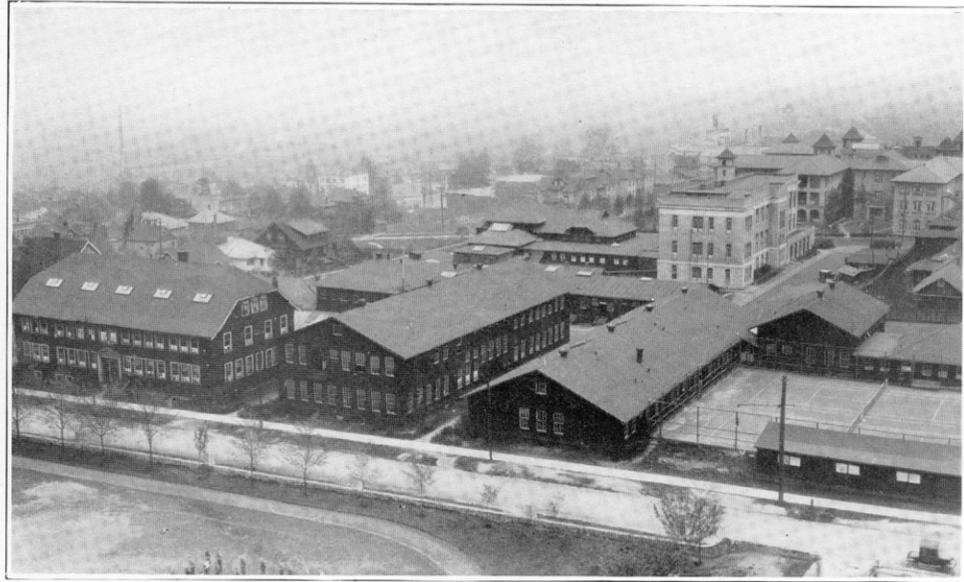
THE SECOND BUILDING ON THE CAMPUS

and designed for future requirements, as well as present needs. Not only has ample provision been made for the development of the courses now offered, but space has been assigned on the campus for many branches of study that in all probability will not for some years be undertaken. A comprehensive plan (Page 6), selected by competent judges from many submitted, ensures a proportional and harmonious scheme of development. Of this plan, which will be adhered to, and carried out by successive stages in future years, the permanent buildings on the campus are but the nucleus.

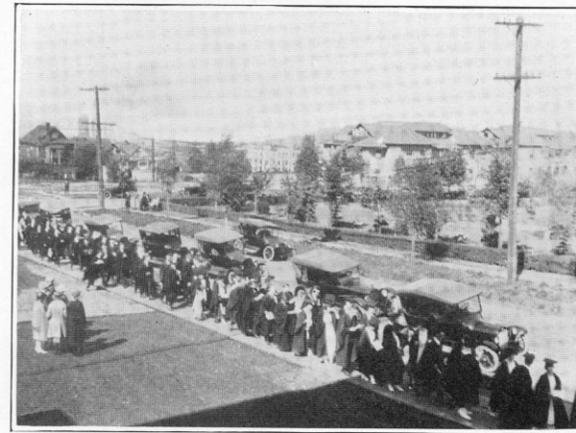
for expansion because none was expected. Expansion, when it came, presented well-nigh insuperable difficulties to university authorities, because substantial buildings were in many cases crowded into so small an area that their enlargement was impossible. No problems of this particular type will present themselves, not at least for many generations, to those responsible for the welfare of The University of British Columbia. It was, from the beginning, planned







OLD SITE AT FAIRVIEW



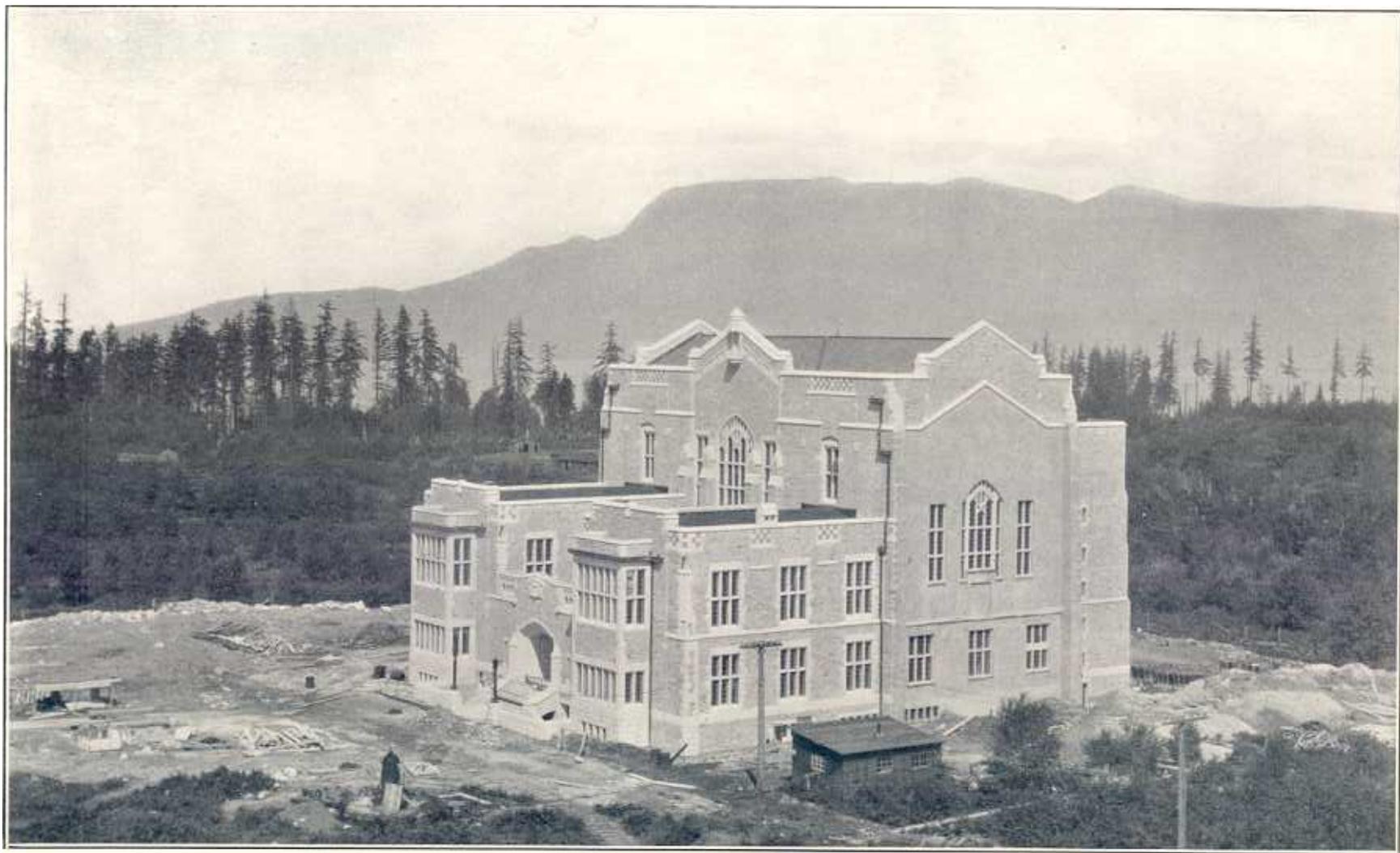
CONGREGATION AT FAIRVIEW



THE CAIRN



FACULTY AND STUDENTS AT THE FAIRVIEW SITE, 1922



The Permanent Buildings

LIBRARY

THE Library stands at the head of the Arts Quadrangle, east of the main axis. It is a massive structure of two stories and a basement built of British Columbian granite.

The style is late Tudor, modernized. The entrance floor is devoted to offices, and to the Burnett collection which represents the arts, handicraft and weapons of Polynesia. The



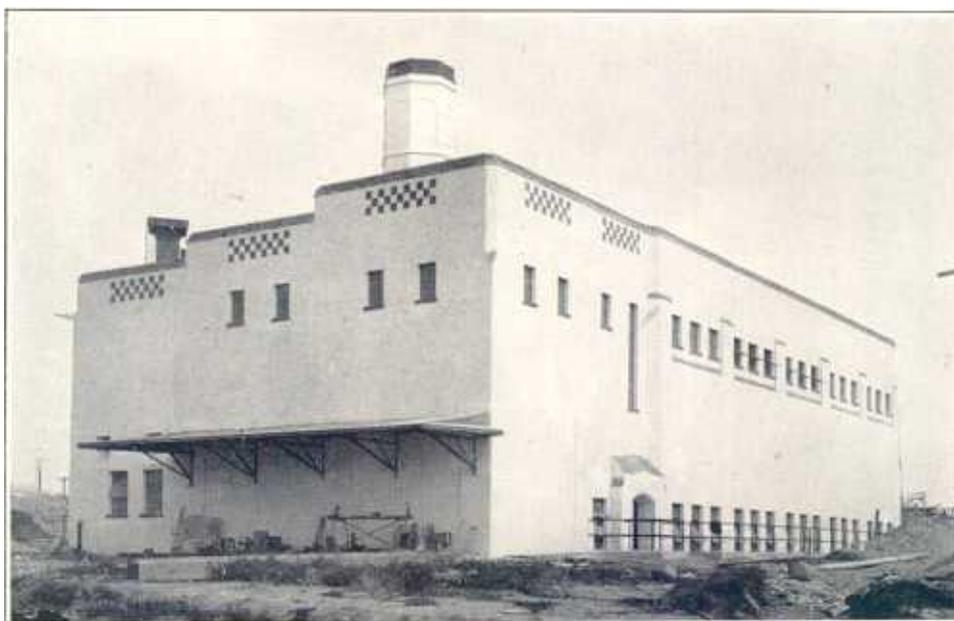
LIBRARY READING ROOM

floors of the Main Entrance Hall, of the staircases and of the Concourse are finished with large marbled rubber tiles which harmonize with the general colour scheme, and ensure quietness in the principal parts of the building. The Concourse has a floor space of 100 feet by 50 feet and is 60 feet in height. Finely designed exposed trusses support the roof. The

interior walls are finished in Caen Stone. The woodwork throughout is of plain oak. Ample light is provided through large, pale, amber-coloured Gothic windows. In these are inserted the Coats of Arms of Canadian and British Universities, which supply a touch of colour needed to relieve the dignified austerity of the interior stone. Two smaller reading rooms, each 60 feet by 30 feet, open off the main reading room. The Concourse provides accommodation for 250 students. The stack room, which occupies the entire rear of the building, contains seven tiers, four of which are fully equipped with steel stacks of the latest design. Here fifty-two semi-private study "carrels" facilitate research by advanced students. The University Library contains 53,000 volumes and 10,000 pamphlets classified throughout on the Congressional system. It also receives regularly 450 magazines and periodical publications devoted to literature, history, the sciences and the transactions of learned societies. While the Library is primarily for the use of the staff and students of the University, its resources are available to the general public on personal application to the Librarian.

POWER HOUSE

THE Power House, placed in the centre of the space which will ultimately be the Engineering Quadrangle, will eventually be masked by the permanent Engineering buildings extending eastward towards the Mall. The present boiler installation consists of three units each of 250 horse power normal rating. Each unit, so equipped as to

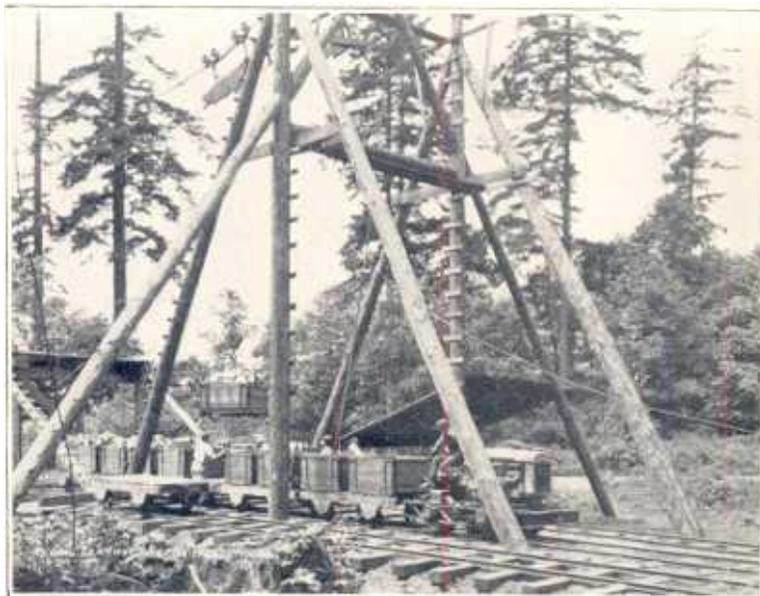


POWER HOUSE

operate independently of the others, may act as a service as well as an experimental station. Instruments are provided to record every operation so that close checking and comparisons of the performance of the three different types of boilers may be made.

The Babcock and Wilcox unit is equipped with their Natural Draft Stoker, and the Sterling Boiler with forced draft Coxe Travelling Grate. The Kidwell, with forced draft Coxe Travelling Grate, is also equipped with air pre-heater, by-passed, so that tests may be conducted with or without pre-heated air. Induced draft is used with individual forced draft fans; separate boiler feed lines and pump with Linchart Scale provide boiler feed for tests. A travelling weigh scale records the amount of coal used, while a steam jet ash conveyer elevates the ashes to an overhead bunker.

The efficiency and flexibility of the plant lends itself to economical operation, while the knowledge gained in the use of different appliances will be of great interest and value to power plant users.

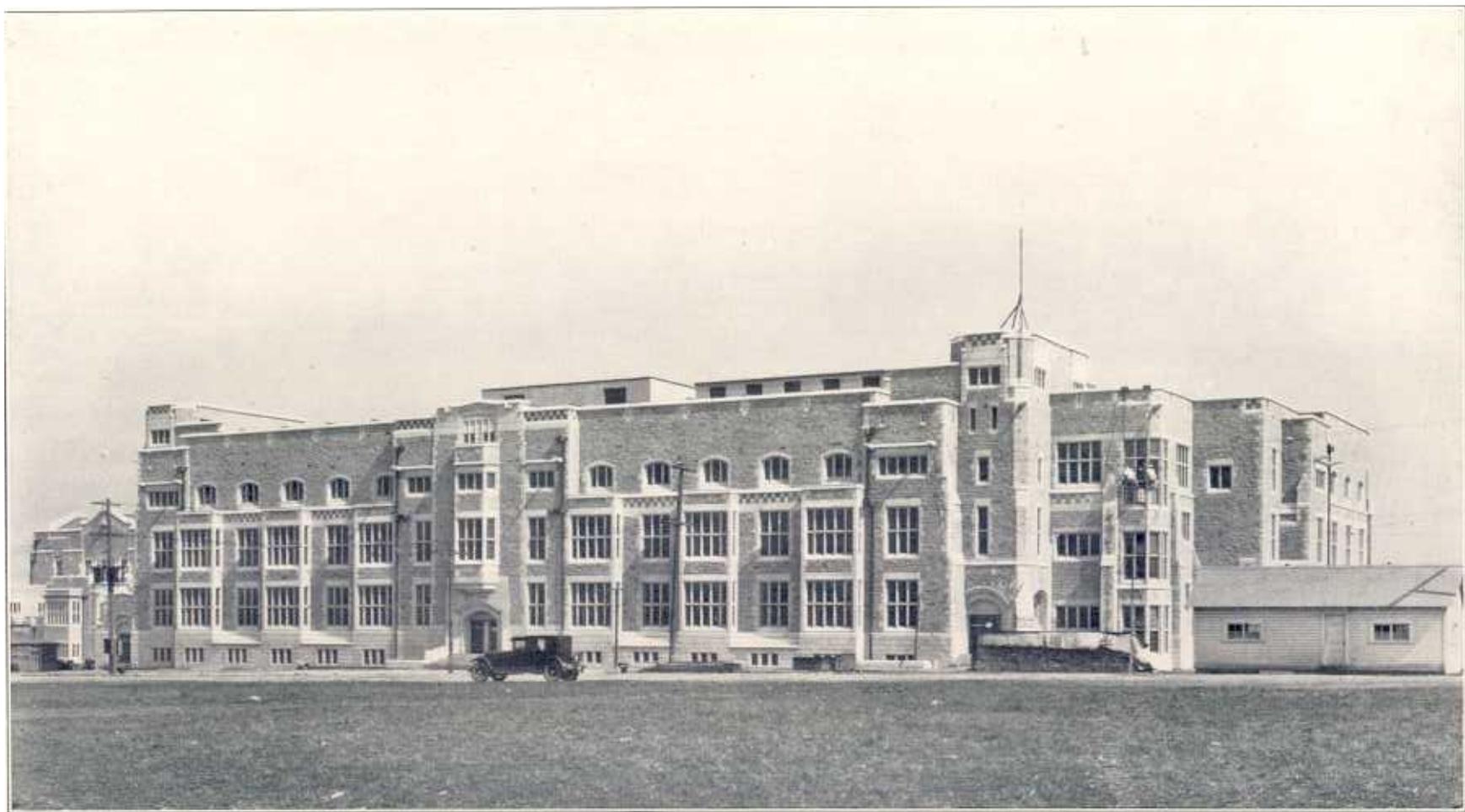


AERIAL TRAMWAY

SCIENCE BUILDING

THE Science Building forms one side of the Science Quadrangle. Its exterior is designed in the Tudor Style, a phase of English Gothic capable of adaptation for modern collegiate requirements. It is constructed throughout of British Columbian granite with interior finishings of oak. Wherever possible, plain wall surfaces, consisting of the split faces of the granite arranged in random sizes with white joints, have been used. The general grey tone is relieved by the use of a small quantity of field stone of darker shades. The windows are of leaded glass in steel sashes. The interior of the building is finished in brick and tile in pleasing tones of brown which harmonize with the oak-panelled doors.

This building, which was designed for the sole use of Chemistry ultimately, now accommodates the Departments of Chemistry, Physics, Bacteriology, and Nursing and Health. The lecture rooms and laboratories are well lighted. Special attention has been paid to the ventilating system, the air being renewed every seven minutes by motor driven fan blowers. Distilled water, gas, steam, compressed air and electrical supply circuits have been provided wherever required. These services are carried in trenches in the floor, an arrangement which facilitates any necessary repairs.



Chemistry—In this Department there are ten offices and private laboratories fully equipped with special facilities for research, ten general laboratories, two lecture rooms, four balance rooms, several supply and store rooms, a constant temperature room, a liquid air room, a departmental library and a reading room, a photographic dark room and a well equipped machine shop.

A large steam-operated still is located in a room on the roof, from which distilled water is distributed through block-tin pipes to various sections of the building. The laboratories and research rooms are well supplied with fume cupboards. Great care has been given to the choice and selection of all structural materials used throughout the building and to all materials used for special experimental equipment. All structural iron work is heavily painted with special acid-proof paint.

The laboratories include one for elementary chem-



A CORRIDOR IN THE SCIENCE BUILDING



LAYING THE CORNER-STONE OF THE SCIENCE BUILDING

istry, two for elementary qualitative and quantitative analysis, an advanced quantitative, an elementary organic, an advanced organic, an agricultural, a physical, an industrial and an organic combustion room.

Physics—On the first floor of the Science Building there are two large lecture rooms; three large laboratories for Elementary Physics, Mechanics and Heat, and Electricity; a reading room for ad-



PANORAMIC VIEW OF CAMPUS, MAY, 1924



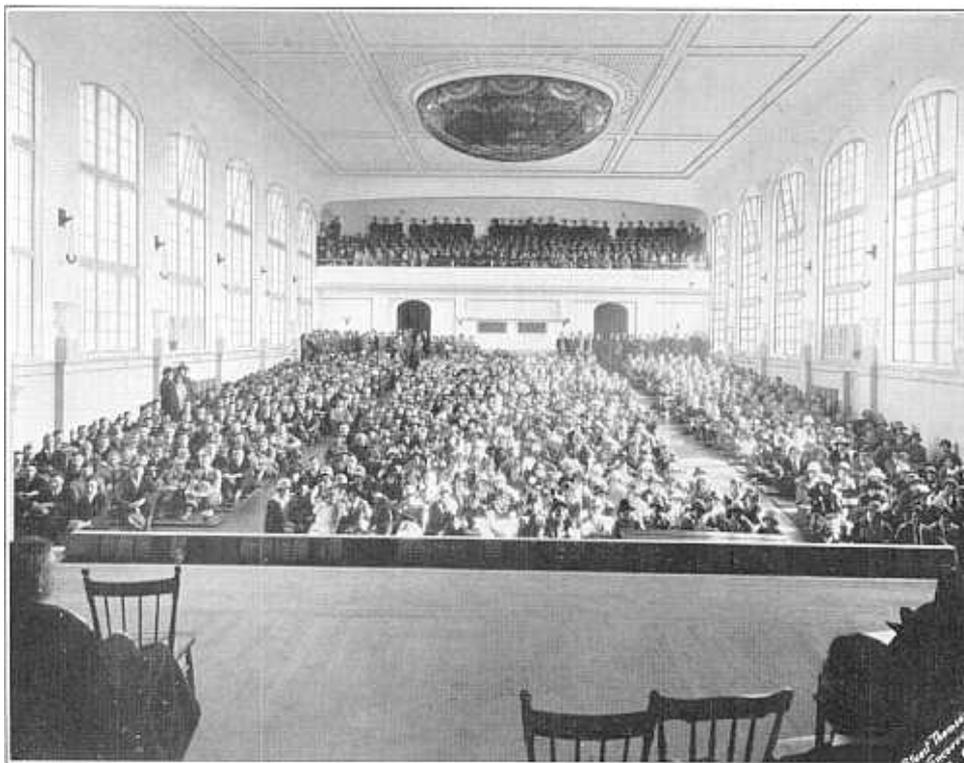
PANORAMIC VIEW OF CAMPUS, MAY, 1925

vanced students; a number of offices and small laboratories in which special work may be undertaken by members of the staff; and two rooms adjoining the larger lecture room, one serving as a repository for the apparatus and the other as a convenient place in which to prepare experiments for lecture demonstration.

In the basement there are a dark room and small laboratories designed for light and X-ray experiments; a large research laboratory provided with four large piers which are not in contact with the building, thus affording facilities for the use of sensitive apparatus; a battery room containing two sets of storage cells supplying 110 volts each, from which current may be obtained in any of the laboratories by means of a switch-board in the distributing room adjoining; a constant temperature room; and a mechanic's shop equipped with tools for repairing and making apparatus.

Bacteriology—This Department has four laboratories, two for general Student work, one for serological work and one for advanced research. In addition a lecture room, offices, a preparation room and a sterilization room have been provided.

Nursing and Health—The three rooms assigned to this Department constitute a teaching unit such as is provided in modern training schools for the instruction of nurses. All the equipment necessary for the demonstration of elementary nursing procedure is available.



THE FIRST ASSEMBLY IN THE NEW AUDITORIUM

Semi-Permanent Buildings

ADMINISTRATION BUILDING

On the ground floor of this building are situated the offices of the President, the Dean of the Faculty of Arts and Science, the Registrar, and the Bursar. On the second floor are two large rooms, one for the meetings of the Board of Governors and the Senate, and the other for meetings of Faculties and Committees.



ADMINISTRATION BUILDING

AUDITORIUM BUILDING

The Auditorium Building is designed in a pleasing treatment of Renaissance architecture and is furnished with the most modern equipment. It has a seating capacity of 1140, a large stage admirably equipped for dramatic presentations, an orchestra pit and adequate off-stage



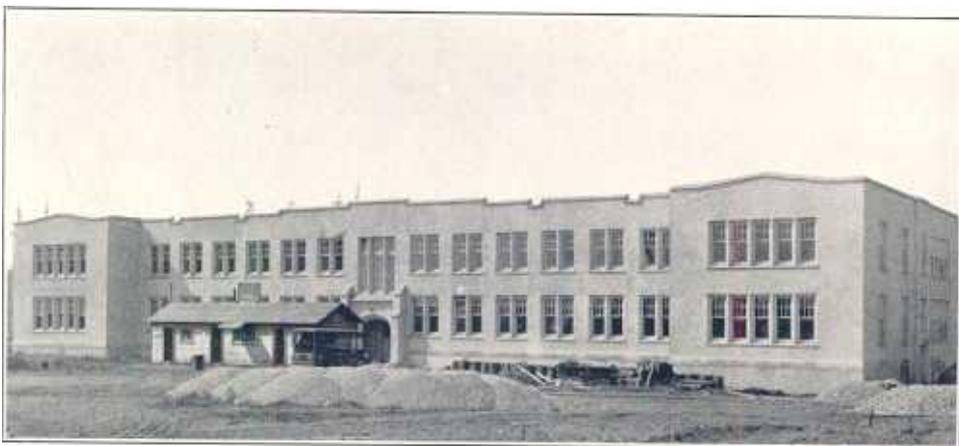
AUDITORIUM BUILDING

dressing rooms. Provision has been made for the operation of moving pictures, and the stage is equipped with a cyclorama and all necessary electrical illumination devices.

In addition to the Auditorium proper, this building houses various other important features. In the basement are situated the lunch room, designed to accommodate 400 students at a time, a small dining room for the Faculty, and a kitchen furnished with the latest cooking and baking equipment. The bookstore, post office, medical offices, women's rest room, students' council offices and numerous committee rooms for subsidiary organizations are also located in the Auditorium Building.

ARTS BUILDING

In the Arts Building, which forms the centre of the semi-permanent group, are located the lecture rooms and offices for the following Departments in the Faculty of Arts and Science; Classics, Economics, Sociology and Political Science, English, History, Mathematics, Modern Languages and Philosophy. The lecture rooms, 16 in number, the largest of which accommodates 250 students, the others ranging in seating capacity from 32 to 65 each, are well designed and exceptionally well lighted. The remaining rooms are the office of the Dean of Women, and four common rooms for the use of the undergraduates in Arts and Science.



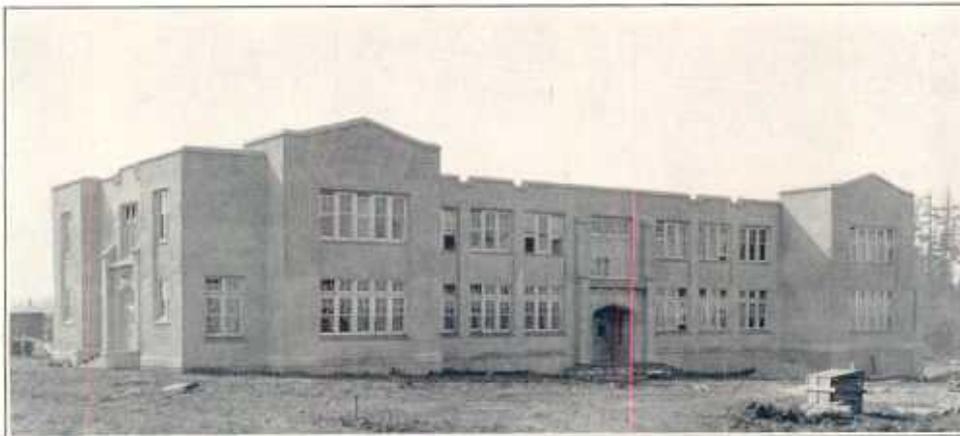
ARTS BUILDING



PERENNIAL BORDER

AGRICULTURE BUILDING

This building accommodates the Departments of Agronomy, Animal Husbandry, Dairying, Horticulture and Poultry Husbandry. It also contains the office and record rooms for the Farm Survey studies and four lecture rooms, the largest of which has a seating capacity of



AGRICULTURE BUILDING

112, the others accommodating from 36 to 54 students. The remaining space is occupied by the necessary offices, preparation rooms, storage rooms, a photographic dark room, a herd book room, and a students' common room.



THE NURSERY



HORTICULTURAL BUILDING

HORTICULTURE

The Department of Horticulture maintains field plantings covering at present some twelve acres. These plantings comprise the more important kinds and varieties of tree fruits, small fruits, vegetables and ornamental trees, shrubs and flowers, as well as some of the newer and rarer kinds which are being tested with

a view to improving upon the varieties in common use. This extensive material not only affords opportunity for giving the students practical experience on the propagation, planting, pruning, and general care of the various horticultural crops; but also makes possible for both undergraduate and graduate students valuable comparative studies in



IN THE ORCHARD



STRAWBERRY PLOTS

connection with various experiments conducted with these crops.

Supplementing the outside field plantings, a glass propagating house provides accommodation for a modest collection of some of the more tender plants besides supplying the students with some practical training in greenhouse management.



AGRONOMY BUILDING

AGRONOMY

This Department is provided with a combined laboratory and lecture room which is equipped with water, gas and electricity. While this room will be used for studies in crop production, in the judging of specimens of plants and in the determination of soil samples, the main emphasis will be laid on the work conducted in the Department's outdoor laboratory—the Agronomy fields.

Throughout the nine years, during which Agronomy work has been undertaken at the Point Grey Site, an endeavour has been made to collect plants from all over the world which might be considered suitable for conditions prevailing in this Province. Considerable testing and breeding work has been done with this material, and a number of crosses were made in 1917 and later which, together



AGRONOMY PLOTS



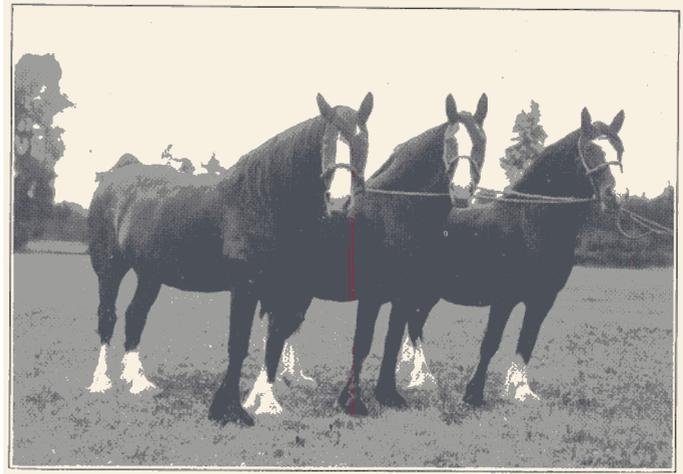
A CLOVER PLOT

with their progeny, will give the students abundant material for studies in heredity. Several outstanding varieties and strains have been produced within all lines of field crops and these will serve as a basis for demonstration, multiplication and ultimately for dissemination among the farmers of the Province.

Work on soils and soil fertility is a specialized branch of this department.

ANIMAL HUSBANDRY

The Department of Animal Husbandry possesses outstanding herds and flocks of the different types of live stock—Ayrshires and Jerseys representing the dairy types, Shorthorns and Herefords the beef types, Clydesdales the



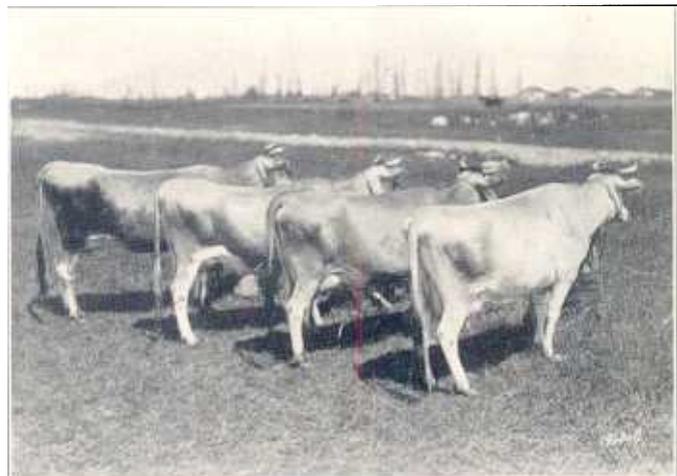
CLYDESDALE MARES



HORSE BARN

draft horse, Berkshires, Yorkshires and Duroc Jerseys the various types of swine, and Oxfords, Shropshires and Southdowns representing the middle wool types of sheep. In this material and in the farm survey rec-

ords, the Department possesses a wealth of data for teaching and illustrating matters connected with farm management, live-stock management, feed and nutrition, pedigree and breeding.



JERSEY COWS



BEEF BARN



OLD DAIRY BARN, 1917-19



NEW DAIRY BARN



THE PIGSTY



FARM COTTAGES

DAIRYING

The new laboratories of the Department of Dairying consist of a number of rooms on the ground floor of the Agriculture Building. Facilities are provided for conducting researches on the bacterial flora of milk, butter and cheese, and the relation of the flora to the production and sale of high quality products. Moreover these laboratories have made it possible for work to be done on the mycology of certain varieties of cheese. Excellent facilities have been provided for the instruction of students in the work indicated. Though cheese-making and butter-making will be conducted in the temporary dairy building, the new laboratories permit, to a marked degree, of closer contact in the various activities of the Department.



DAIRY BUILDING

POULTRY HUSBANDRY

In the poultry laboratory in the Agriculture Building, facilities and equipment are provided to assist in the study of poultry nutrition, diseases, and other problems related to the industry.



WYANDOTTE PULLETS

On the poultry plant, which is the main laboratory of the Poultry Department, ten pure breeds of commercial importance are being tested for egg and meat production. Experiments in management and marketing are conducted with these birds and their products. An economic study of the business and management of 100 poultry farms in the province supplements the work conducted at the University.



SOLDIERS' RE-ESTABLISHMENT BUILDING

APPLIED SCIENCE BUILDING

This building houses the Departments of Geology, Civil Engineering, Zoology, Forestry, Botany, the Applied Science lecture rooms and a students' common room. All the laboratories have been equipped with the essential services. One large lecture room, providing accommodation for 250 students, and 11 smaller lecture rooms with a seating capacity ranging from 25 to 112 are located in this building. Extensive provision has been made for draughting rooms and for the necessary offices, preparation rooms, storage rooms, and photographic rooms. A geological museum and a reading room have also been provided.



APPLIED SCIENCE BUILDING

Geology—In addition to the necessary lecture rooms, the Department of Geology has three large and well equipped laboratories, the Mineralogical, the Petrological and the Geological. A workroom is equipped for cutting and grinding specimens for microscopic examination, and for geological experiments. It also contains a photographic dark room. The museum contains valuable collections of illustrative material which supplement the extensive working collections in the laboratories. The departmental library contains books, maps, photographs and slides for reference.

Civil Engineering—Well equipped and well lighted draughting and designing rooms are provided for all classes in drawing, mapping, machine design, and computation work. Surveying equipment for all types of work, including land, railway, hydrographic, topographic, astronomical and precise surveys is available for undergraduate classes.

The Hydraulic Laboratory is situated in the Mining, Metallurgy and Hydraulic Building, while opportunity for making extensive tests of timber and steel is provided for students in Civil Engineering through an arrangement with the Dominion Forest Products Laboratories.

Zoology—This Department, which includes in its syllabus courses in Entomology, has two large laboratories, a small research laboratory and two private laboratories, all well equipped. A room used for class material also serves as a repository for a museum collection.

Forestry—While the Department of Forestry has its own laboratory for work in wood technology, its own class rooms and offices, it uses the laboratories of other Departments quite extensively, notably those in Biology, Civil Engineering and Forest Products.

The Department possesses in the forest belt, which has been preserved on the campus as a natural park, a very valuable outdoor laboratory for forestry students. The forest, containing about 100 acres, is typical of the stands found on the western coast, and all the principal species of trees and shrubs of the region are represented, including Douglas fir, western red cedar, western hemlock, Sitka spruce, grand fir, broad-leaf maple, alder and many others.

Botany—The Botanical laboratories include a large junior laboratory, a senior laboratory, two student research laboratories, three private research rooms, and a Herbarium of over 15,000 sheets provided with fireproof accommodation.

The Botanical Gardens occupy five acres on the west side of the University campus. Here may be seen over 1000 different species of native plants collected from all parts of British Columbia, including dry-belt, alpine and

coast species. One part of the gardens is devoted to the herbaceous collection, and here plants are systematically arranged according to their families; another part is reserved for a native arboretum to illustrate the British Columbian species of trees and shrubs; still another constitutes the nursery, where duplicates and plants for research are raised. The economic flora is represented by several beds of medicinal plants.



BOTANICAL GARDENS



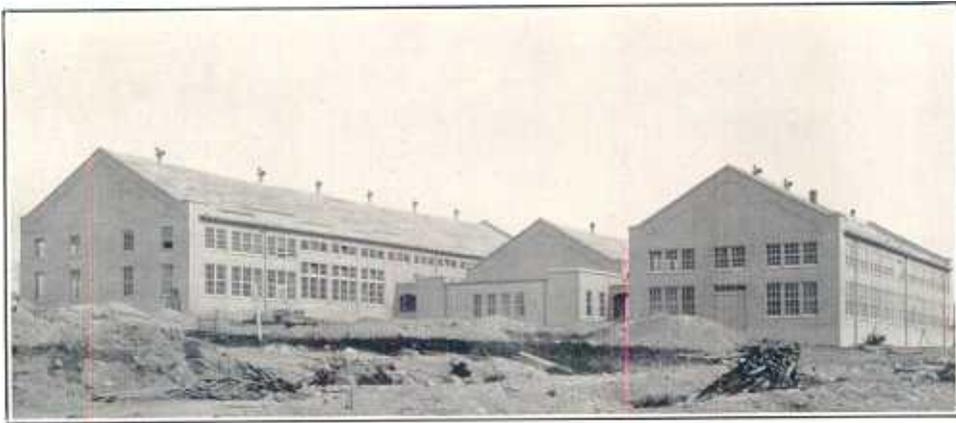
ANOTHER VIEW OF BOTANICAL GARDENS

The University, through this Department, offers assistance in the identification of native species and desires to secure the co-operation of all interested in the flora of British Columbia, in order to fill existing gaps in the collections of the Herbarium and Botanical Gardens.

MECHANICAL AND ELECTRICAL LABORATORIES

The Department of Mechanical and Electrical Engineering is housed in two buildings, the larger one for Mechanical Engineering, the smaller for Electrical Engineering.

The Mechanical Building comprises a large laboratory, three lecture rooms, a draughting room, a calorimetry room, a storage room and a machine shop. In the Mechanical laboratory there are a Corliss engine, a two-stage air-compressor, and a new National gas engine, which will be equipped with the necessary apparatus for carrying out complete tests. In addition, two oil engines are available for testing purposes, also a 50 h.p. Diesel Engine and Fronde Brake, a De Laval steam Turbine with condenser, a triple expansion marine engine, a carbon dioxide refrigerating machine, several oil engines, and a gas engine. The power house with its different types of boilers will be available for carrying out complete boiler tests. A 250 K. W.-A. C. generator driven by a compound engine of the high speed type, and also the steam pumps of various kinds in the power house will be available for testing purposes.



ENGINEERING LABORATORIES

The calorimetry room is fitted with a Junker's gas calorimeter for the complete analysis of fuels and gas. In addition a large amount of equipment for experimental work in the mechanics of machines is provided. There is also an excellent machine shop equipped with lathes and other modern machine tools.

In the smaller of the two buildings junior and senior laboratories are provided for Electrical Engineering as well as rooms for research, photometry, meter-standardizing, and a high tension testing laboratory. The senior laboratory contains modern equipment, including three phase series and shunt commutator motors, a repulsion motor of the Déri brush shifting type, rotary converters, synchronous motors and direct current machines of the series, shunt, and compound types. There is also a Hunt Cascade Induction motor, an alternator and a Kapp Vibrator. An oscillograph of the Duddell type, and an alternating current potentiometer of the Gall type has also been installed. The junior laboratory is furnished with all the equipment necessary in preparing for the senior course.

MINING, METALLURGY AND HYDRAULIC BUILDING

The Mining and Metallurgical laboratories cover a total area of 5000 square feet. The Ore Dressing laboratory, which includes a workshop, storage room and flotation room, is well equipped with a variety of small scale machines, including crusher, rolls, screens, jigs, ball mills, and tables. A two-ton travelling crane covers the whole laboratory. The laboratory is fully wired for power and light and has large water mains and drains. The Metallurgical laboratory includes a fire assay room, with oil, gasoline and gas furnaces; a wet assay room, with large fan draught fume closet and work benches wired for electric and gas heating; a fine balance room; a photographic dark room, and ample storage room.

The Hydraulic laboratory is well equipped for tests and demonstrations of high and low pressure hydraulic machines and pumps. A 60-horse-power D. C. motor is utilized to drive either a 10-inch single stage centrifugal pump having a capacity of 2400 gallons per minute against a 70-ft. head, or to drive a 4-inch two-stage pump having a capacity of 525 gallons per minute against a 325-foot head. The water from the large pump can be used to drive a 10-inch vertical reaction turbine, while the flow from the high pressure pump can be used to drive an 18-inch Pelton Wheel, thus providing students with actual working demonstrations of all the ordinary types of machines. Installations include apparatus for weir, nozzle, and orifice measurements, flow in pipes, tests and demonstrations of Venturi, current and service meters. One section of the laboratory is set apart for making the standard tests of cement and sand.

FOREST PRODUCTS BUILDING

This building was erected by the University, but the task of providing the personnel and furnishing the equipment has been undertaken by the Department of the Interior. By further arrangement between this Department and the University the laboratories are available for the use of classes engaged in testing materials.

In this building there are a large timber testing laboratory, an experimental kiln-drying laboratory, a pathological laboratory, an exhibit room, a carpenter shop and a special build-



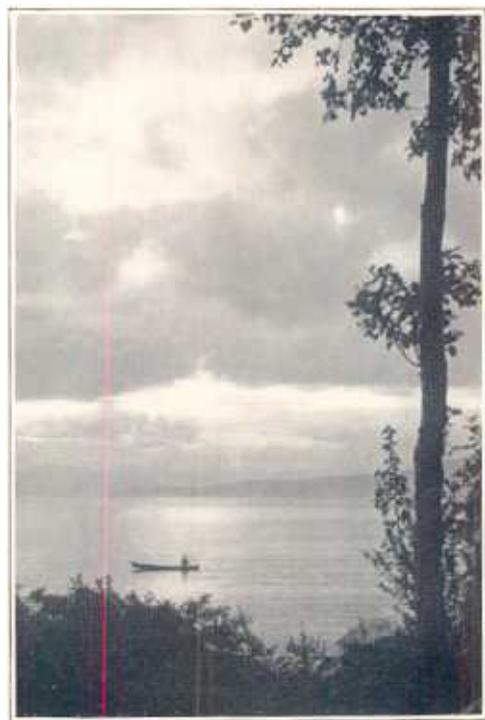
FOREST PRODUCTS BUILDING



A VIEW OF MARINE DRIVE FROM
UNIVERSITY GROUNDS

The buildings and equipment described above were planned to accommodate fifteen hundred students. Last year the registration, exclusive of Summer Session and Short Course Students, was 1451. Now, for the first time in the institution's history it has class room, laboratory and office accommodation adequate for present requirements.

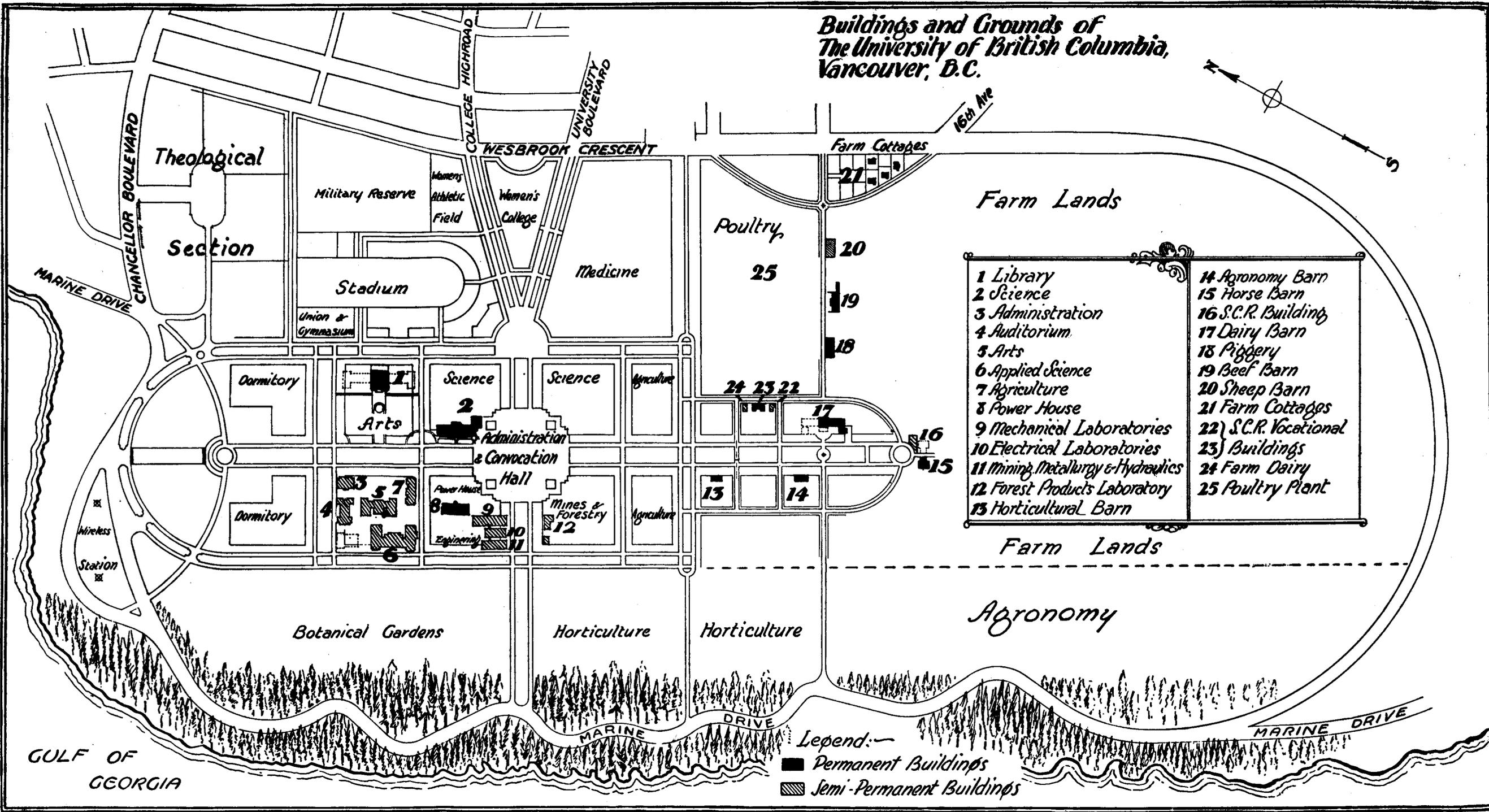
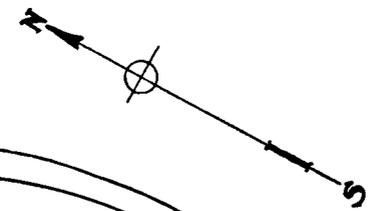
ing for air seasoning studies of lumber. Provision has also been made for the necessary offices and for a reference library. All the laboratories are well equipped. Testing machines range from a 200,000-pound Olsen Universal compression and tension machine to the most delicate balances.



OVERLOOKING A BATHING BEACH FROM
UNIVERSITY GROUNDS



Buildings and Grounds of The University of British Columbia, Vancouver, B.C.



- | | |
|------------------------------------|----------------------|
| 1 Library | 14 Agronomy Barn |
| 2 Science | 15 Horse Barn |
| 3 Administration | 16 S.C.R. Building |
| 4 Auditorium | 17 Dairy Barn |
| 5 Arts | 18 Piggery |
| 6 Applied Science | 19 Beef Barn |
| 7 Agriculture | 20 Sheep Barn |
| 8 Power House | 21 Farm Cottages |
| 9 Mechanical Laboratories | 22 S.C.R. Vocational |
| 10 Electrical Laboratories | 23 Buildings |
| 11 Mining, Metallurgy & Hydraulics | 24 Farm Dairy |
| 12 Forest Products Laboratory | 25 Poultry Plant |
| 13 Horticultural Barn | |

Legend:—
 Permanent Buildings
 Semi-Permanent Buildings