

7.

POST WAR EXPANSION

*Canadian Universities . . . serve the national cause in so many ways, direct and indirect, that theirs must be regarded as the finest of contributions to national strength and unity.*¹

MOST PERSONS who know the University and were in touch with campus life during the six years following the end of World War II would agree that this was, perhaps, the most stirring and exhilarating period in the University's history. It was also the most exacting in the demands it made upon the abilities, energies and stamina of the administrative and teaching staff. The Federal Government's open-handed assistance in the education of discharged military personnel, the generous policy of admissions adopted by the National Conference of Canadian Universities, and the decision of the President and Board of Governors to reject no candidate who could qualify for entrance, brought an influx of veteran students which taxed to the limit the already overstrained resources of the University. The University was faced with many novel problems in this period. Nothing but the intelligent planning and grim determination of all concerned, working as a team, could have achieved solutions. The President's confidence in the success of each

¹ Report of the Royal Commission on National Development in the Arts, Letters and Sciences, p. 6.

new enterprise was unwavering and gave a like spirit of confidence to his colleagues. It would be idle to suppose that all was smooth sailing for the good ship U.B.C.; there were doubtless periods of stormy weather when the Captain and his crew, and perhaps some of the passengers, wondered if the ship would weather the storm. If there were such periods, the official records do not reveal them. Instead, we have there an account of the unfailing courage with which the University, within the short span of three years, accepted and provided degree work throughout a twelve-month session for a number of undergraduates three times that of the previous normal. The student population rose from 3,000 (approximately) in 1944-45 to over 9,000 in 1947-48. Courses of lectures, lecturers and facilities were found for them all. It should be remembered too that the entire cost of these undertakings was met out of an annual budget, strictly limited as to both capital and operating revenue; that no new bond issues were made, as in business and industrial procedure, to deal with new and necessary financing.

Every effort was made, short of limitation of enrolment, to meet the desperate emergency. In these circumstances the heaviest possible responsibility for decision and action was placed upon the President, to whom the Board of Governors "gave general authorization to take such emergency action, in consultation with the Chancellor and others as may be necessary in respect of staff, equipment and accommodation."² There was no time to wait for formal approval of the Board of Governors to secure lecture-room space when hundreds of students were enrolling for whom no such facilities were in existence on the campus. Plans for new buildings had been made during the last two years of the war but the most advanced of these plans were still in the blue-print stage when the tidal-wave of veterans arrived.

In the session 1944-45, the registration was 3,058, of whom 150 were ex-service personnel; in 1945-46, registration almost doubled with 2,254 veterans in a total student body of 5,621. A conflict of priorities at once arose between the urgent need for classrooms and for student housing. Abandoned Army and Air-Force camps supplied both needs. Fifteen complete camps were taken over by the University in the course of the 1945-46 session alone. Twelve of these camps were dismantled; their huts were brought to the campus on trucks and there erected and equipped as lecture-rooms and laboratories; the remaining three were adapted for living quarters *in situ*, one each in Acadia and Fort Camps, the third on Lulu Island. Still another camp, situated on Little Mountain, in Vancouver, was converted into suites for married students.

Registration continued to mount. In the Summer Session of 1946, there were 2,398 students as compared with 861 in the previous summer. A special short Winter Session from January to April in 1946 had 1,098 registered students.

2 Board of Governors' Minutes, September 24, 1945.

Surge of Registration

In the regular Winter Session of 1946-47, the members rose to 9,035 and reached their highest point of 9,374 in the following year. Gradually from this summit registration subsided: in 1948-49, it was 8,810; in 1949-50, 7,572; in 1950-51, 6,432. In the process of settling back to what might be considered, from past experience, to be a normal student population, an unexpected feature made its appearance in the remarkable increase of non-veteran registrants. In 1946-47, the veterans numbered 4,796 and composed 53.4% of the entire student body. Even so, the remaining 46.6%, numbering 4,239, showed an increase of nearly 1,000 non-veteran students over the numbers of the previous year. In 1947-48, the total of non-veterans rose to 4,917 or 53% of the student body in the year of maximum registration. At this point, the Administration felt safe in estimating that normal enrolment of the next ten years, when the educational needs of ex-service men had been met, would be 5,000 to 6,000 students. In the very next year, 1948-49, these predictions began to appear to have been too conservative; registration of non-veteran students numbered 5,580 or more than double the total registration (2,476) ten years earlier. The number has never since been below 5,000. Registration of veteran students dropped sharply at the rate of 1,000 a year from their maximum number of 4,796, in 1946-47, to 336 in 1951-52 in a total student body of 5,548. In the following year the low point of post-war registration was reached, numbering 5,355. From this date the number of undergraduates has increased each year, at a slow rate to begin with, more recently with almost alarming acceleration, until to-day, five years later, the registration for the session of 1957-58 has reached 8,986, less than 400 short of the highest post-war registration, in 1947-48. This increase in student registration is to be ascribed in part to the post-depression rise in the birth-rate; it is also due to the great increase in population of the Province, to a higher level of prosperity, and to a growing keenness on university education.

Owing to the energy and determination of the President and administrative staff, of the Deans of Faculties, Heads of Departments and individual members of Faculty, the provision of lecture-room and laboratory space kept pace in a remarkable way with the rapidly rising demands of student enrolment. The success of their efforts was ensured also by the sympathetic co-operation of National Defence authorities, the War Assets Corporation and the directors of the Central Housing and Mortgage Corporation. In 1945-46, the first year of the veterans' campus invasion, the huts, which a few weeks earlier had been evacuated by Army and Air Force personnel, were put in position along the East and West Mall and provided 37 classrooms with seating capacity for 4,000 students. Other imported huts supplied 36 laboratories which, when equipped with teaching facilities, held 900 students for each laboratory period. Accommodation was found

Army Huts to the Rescue

in the same way for reading rooms, drafting rooms, offices and student clubs. The number of huts used as snack-shops rose to 12, but even so the need for such dispensaries of hot food on the campus remained acute. A typical scene during those stirring, strenuous post-war days at the University is described in vivid language by Dean Curtis, who was busily occupied at the time in organizing the Faculty of Law:

The need for accommodation was met by a stream of army huts which began pouring into the campus through the drive and organizing efforts of Gordon Shrum and John Lee.³ Legends have a habit of accumulating around the Paul Bunyanesque enterprises of these two men in moving army camps, holus-bolus, to Point Grey — in some instances, it has been rumoured, with the slimmest formal authority. But it is true that on a late October afternoon, Dean Buchanan and I were sitting in his office working out some academic details, when the Dean, most beloved and helpful of men, let a smile flicker over his face and, looking out of his window, said: "Forgive me for interrupting but you may be interested; there is the Law School going by, along the Mall". It was. Two huts, being laboriously hauled along on tractor-trailers, were to be the first home of the men of Law on the campus.⁴

Such temporary homes were also found for the Departments of Pharmacy, Nursing, Architecture, Commerce, and University Extension, as well as for the B.C. Research Council. Considerable outlay of funds had to be made not only in preparing and equipping these structures for their new purposes as lecture-rooms and laboratories, but also in installing and refitting laboratories in the older buildings for courses such as Engineering, Geology, Forestry and all the Pure Sciences. This was more than ever the case when more space had to be found for the large veteran enrolment when it moved into the senior years. The allocation of Army huts for classroom and laboratory use accomplished its purpose and President MacKenzie was able to write in his *Annual Report* for 1947-48, regarding these special arrangements for accommodation: "This part of our programme is now all but concluded; all our emergency buildings are in use and we shall not require further expansion of this kind." But the scores of huts, while their numbers remained stationary, continued to fulfill important purposes on the campus, and still, in 1958, they remain an integral part of the University buildings — useful, if unsightly, mementos of the post-war emergency period.

Coincident with the influx of veterans in 1945, the financial resources of the University, for the first time since 1925, made it possible to undertake a large-scale, permanent building programme for which plans had been begun with enthusiasm in 1943. A building grant of \$5,000,000 was made available to the University in the provincial budget of 1945. At the time this grant was made, it was thought the amount was sufficient to satisfy the University's needs for build-

³ Superintendent of Buildings and Grounds.

⁴ Dean G. F. Curtis, "The Faculty of Law—1945-1957," *U.B.C. Alumni Chronicle*, Vol. 11, No. 3, Autumn 1957, p. 14.

Permanent Buildings

ings. Delay in implementing the building programme occurred in a period of rapid rise in the cost of materials of construction. By the latter part of 1946 the President was warning the Provincial Government that more money would be required. In 1948 it was found necessary to use for other purposes part of the \$1,500,000 set apart in the grant for the new Faculty of Medicine. In 1949 the Government made an additional grant of \$1,500,000, and in 1950 added a further amount of \$750,000. These generous allotments were swelled by private gifts of \$25,000 from G. T. Cunningham and \$80,000 from the estate of Jonathan Rogers, by gifts from the Alumni-U.B.C. Development Fund, by student contributions, and donations by Friends of the University. From the proceeds of all these amounts placed at disposal in the years 1945-51, no fewer than 20 permanent buildings were erected. This elaborate programme, when carried to completion, exceeded the limits of the campus and greatly altered the long familiar appearance of the Main Mall and its surrounding area.

The first unit to be completed was the Physics Building, situated to the east of the Chemistry Building and extending to the East Mall. It was formally opened in conjunction with Autumn Congregation, October 29, 1947. The Honorary Degree of Doctor of Laws was conferred upon the Honourable John Hart, Premier of the Province, who later in a brief ceremony handed over the keys of the new building to Chancellor Hamber. This handsome structure was the last permanent unit to be built, in large part, in the original granite-faced, semi-Gothic style of the University. The North Wing of the Library was erected 1946-48. The Engineering Building, which slowly reared its massive bulk beside the Power House, in the years 1947-49, was opened by the Right Honourable C. D. Howe on May 11, 1950, at the time of the Congregation ceremonies at which Mr. Howe, Congregation speaker, was given the Honorary Degree of Doctor of Science. The Biological Sciences and Pharmacy Building, constructed in 1947-50, at a cost of over \$1,000,000, was opened by the Honourable W. T. Straith, Minister of Education, at the beginning of the 1950-51 Session. This was the first unit to be erected on the ground reserved for the Biological Sciences to the south of University Boulevard, between the Main Mall and the East Mall. Farther to the east, along the Boulevard, in 1950-51, began to rise the Wesbrook Building, which was to house the Department of Bacteriology and Preventive Medicine and provide a centre for the University's Medical Services, including a twenty-six bed Infirmary-Hospital. Agriculture was well-served in this period, with an Agricultural Pavilion and Agricultural Engineering and Mechanics Laboratories, both built during the first phase of the programme; later, in 1950-51, a Horticultural Building and two service buildings for Poultry Husbandry were added to Agriculture Faculty facilities. Also erected

Memorial Gymnasium

or completed in this year were new buildings for the Law Faculty and Home Economics, and, at long last, three women's residences, situated on the north-western area of Point Grey, overlooking mountains and sea, each unit planned to give comfortable accommodation to fifty students. Pressure on space which housed the maintenance and administrative services of the University was relieved, in this period of expansion, by new construction, including a Stores Building, extensions to the Administration Building and Boiler Plant and Power House and hut accommodation for the Book Store.

In the years when all these exciting activities were in process, the students and alumni were joined in a building undertaking of their own. On February 2, 1946, with the support of the Board of Governors, a Province-wide campaign was launched to raise funds to build on the campus a modern gymnasium as a memorial to British Columbia's war dead. The students increased their Alma Mater Society fee and allocated \$5.00 each to the fund. Throughout the Province, student committees canvassed vigorously, but at the end of a year, in January, 1947, when the expected time required for the campaign had passed, only half of the \$500,000 set as the objective had been received. Nothing daunted, the Planning Committee prepared the blueprints for the Memorial Gymnasium and on November 11, 1947, the Honourable E. C. Carson, Provincial Minister of Public Works, turned the first sod during Remembrance Day ceremonies. Contributions to the fund, however, continued to lag behind expectations, and a year later, in November, 1948, part of the ambitious plans, including a swimming pool, had to be given up. Not until February, 1949, when Premier Hart announced a contribution of \$200,000 from the Government, did it become possible to call for tenders. By September, when the contract for erection of the buildings was signed, more than \$700,000 was available. On February 23, 1951, five years, almost to the day, from the beginning of the campaign, the War Memorial Gymnasium was officially opened. This impressive building, with its open-air swimming pool, which was added for the British Empire Games in 1954, stands appropriately at the eastern entrance to the University grounds, beside the playing fields and Stadium. The high west wall of the spacious foyer bears the words, inscribed in large letters:

TO THE MEN AND WOMEN
OF OUR UNIVERSITY AND OUR PROVINCE
WHO GAVE THEIR LIVES FOR FREEDOM
THIS BUILDING IS DEDICATED
BY THE STUDENTS AND FRIENDS OF
THE UNIVERSITY OF BRITISH COLUMBIA
1914-1918 1939-1945

Here, in this hall of memories, is held each year, on the morning of November 11, the University's Remembrance Day service.

Of special importance among the new buildings of the immediate post-war years was the home of the President. Ever since the move of the University to Point Grey, the suggestion had been made at frequent intervals that the dignity of the University required that the President should be provided with a residence suitable for the entertainment of distinguished visitors to the campus. When President MacKenzie was appointed he was given a housing allowance until a home was erected for him. Plans were made by the Board of Governors in 1944, but various unexpected difficulties intervened to prevent carrying them out. All impediments were finally removed and in the spring of 1951, the President moved from Acadia Camp into a spacious official residence, built in the modern style, within a stone's throw of the University on the very tip of Point Grey.

As the acreage area and the number of buildings in the University's care increased, so did the scope and the number of problems associated with campus landscaping and development of communications. These matters, which had been given close attention from the beginning of the University, now reached an intense phase. Not only was it necessary to plan the site and develop the surroundings of the new permanent buildings, but the huts had to be made as presentable as possible and whole new areas, such as that to the south of the University Boulevard, had to be provided with architectural landscaping. On the north extremity of the campus, also, was an area which had remained waste since the disastrous floods of 1935. Here an extensive improvement project was undertaken to beautify the surroundings of the Law Faculty and Department of Commerce buildings, to widen the Chancellor Boulevard entrance-road, and to integrate with these developments the ornamental gates presented in 1949 by Ronald Graham, the University's generous neighbour. Another landscaping problem in this general area was presented in 1947 by the departure of the Department of National Defence from nearly all of its extensive military reserve on Point Grey, which, since 1912, had appeared to stand in the way of University development on its northern limits. The importance of these many impending tasks was recognized in 1946 by the appointment of F. E. Buck, the veteran horticulturist and skilled campus planner, as Supervisor of Campus Development. In 1949, Professor Buck was succeeded by J. W. Neill, in whose hands was placed the full responsibility for maintenance and development of the campus. Negotiations took place also with the Provincial Department of Land Administration for co-ordinating campus planning with that of the Endowment Lands as a whole, and for sharing on a greater scale with the residents of the booming suburb of University Hill the cost of fire protection and the other common public services.

Student Housing

Conspicuous among the non-academic developments in these stirring years at U.B.C. was the quite remarkable progress achieved in dealing with the ever-present problem of student and faculty housing, to which brief reference has already been made in this chapter. The desirability that most students live near their work, and their wish to do so; their need to practice economy; the limited number of private rooms near the University available for rent to out-of-town students; the widely-recognized social and educational value of some form of student residence — all these and other factors made it inevitable that strong pressures to enlarge residential facilities would be brought to bear on the University by the veteran students, supported by the well-organized University Branch of the Canadian Legion. A new feature presented itself at U.B.C., as in all other Universities in these post-war days, viz., the large number of married students, many of them with young children. Amid the demanding tasks of normal University routine and despite the added responsibilities imposed by an exacting building programme, the President and the administrative staffs somehow found time to spare for this problem of providing student accommodation on an unprecedented scale. U.B.C. was still in large measure a non-residential university and had few items in the regular budget for such expenditure. But now the clamour for housing was loud and urgent and continuous. President MacKenzie took a strong stand in insisting upon the duty of the Federal Government to provide generously for veterans' living quarters. To begin with, as we have seen, army huts were acquired and brought in, in large numbers, to supplement the dormitory and living space already available in Acadia and Fort Camps. The University co-operated with the Central Mortgage and Housing Corporation, under Federal Government support, in the construction of Wesbrook Camp, on the south-eastern fringe of the University Farm area, and in other housing enterprises, especially for married students and Faculty. The Provincial Government gave timely aid with substantial supplementary grants for the veterans' housing. In 1948, a University Housing Authority was set up with G. M. Shrum as Director. The total population of the Camps in that year was approximately 2,200. In 1948-49, the President wrote in his *Annual Report*:

The fourth year of the University's housing programme was generally considered a successful one. There was no appreciable decline in demand for our various forms of housing. Married quarters for students and staff with children continue to be insufficient to meet the need . . . the waiting lists for dormitories are longer than at any previous time.

In 1949, however, the demand slackened and the accommodation at disposal by the University became adequate, though, as the President wrote in his report for 1949-50, the University

Women's Residences

continued the operation of Fort Camp, Acadia Camp, Little Mountain, Lulu Island and Wesbrook, providing much-needed accommodation for single students (men and women) and for married students and staff.

Not until 1951, when the veteran registration had dropped to slightly over 300, were the special camps for married persons on Lulu Island and Little Mountain found to be redundant. Even so, in that year, the University's married quarters housed 898 parents and children and the Camps housed and fed 973 single persons. Residences had undoubtedly become a necessary feature of the University. For the future, the important question would be, "What sort of residences?"

So deeply impressed were Premier Hart and the Provincial Government by these events and by the determined efforts of the President and the other University authorities to meet the urgent student demands for dormitory space, that, in the supplementary capital grant of \$1,500,000, which, as already stated, was voted by the Legislature in 1948-49, the sum of \$650,000 was earmarked for women's residences. This far-sighted action of the Government gave the campus its first permanent buildings for student residence. With the three new, modern, fire-resistant dormitories for women, a beginning was made in the long and costly process of providing U.B.C. with student living accommodation worthy of the University. The residences, Anne Wesbrook Hall, Isabel MacInnes Hall and Mary Bollert Hall, enshrined the names of three women whose active association with the work of the University had given inspiration and help to many generations of students.

Finance was a subject which gave grave concern to the President and Board of Governors in these years. The very large outlay of permanent and emergency capital was being made at a time of rising costs. The annual estimates offered problems of unusual difficulty. The preparation in the month of December of an operating budget for the next Winter Session, which commenced in the following September, called for a quality of superhuman prescience, of a sort attributed in ancient times to the Greek Oracle of Delphi. The University at the time had three chief sources of revenue, viz., the Provincial Government grant, the Federal Government grants for veterans, and students' fees. The Provincial Government grants were increasingly generous; in 1945-46, the grant was \$600,050; in 1946-47, it was increased to \$920,050; in 1950-51 it was \$1,750,000. The amount of revenue received from the other two sources depended directly upon the numbers of students in attendance, and this number must be estimated by the President and Board for budget purposes, nine months in advance of student registration. A further complicating factor in balancing the accounts in those years was the delay in receiving the Federal Government grants of \$150 and fees in respect of each veteran student. In 1946-47, 22% of the operating revenue and

emergency capital came from this source, while 47.7% came from students' fees. Owing to the factors of uncertainty in the budget estimates for this year, the University accounts, on March 31, 1947, showed a considerable cash deficit, incurred, chiefly, in the emergency buildings and laboratory equipment programme. The University is forbidden the luxury of deficit financing and it was found necessary to request the Government to pass an Order-in-Council approving this over-expenditure. By March of the following year, however, the University accounts revealed a small credit balance.

The difficulties which are inherent in the hand-to-mouth system of University financing were never more evident than in the post-war period. Without endowments, the University lay like a shorn sheep, at the end of each financial year, its treasury stripped and empty. The Federal grants for veteran students came in on a flood tide and went out with the ebbing tide. They amounted to \$791,412 in 1946-47; in 1950-51 they had dropped to \$154,418, or 3.82% of the total operating revenue. In the spring of 1949 the Provincial grant was reduced on the assumption that the emergency was over. As in certain previous times of financial need, the students were called upon to increase their contributions to the revenue. Fees were twice increased by \$30 per student, first in 1948 and again in 1951—so far had U.B.C.'s economy departed from the ideals of its founders, who, in the first years of the University, had offered higher education to the youth of the Province without payment of tuition fees. A cushioning element required to deal with these sessional and other occasional variants in increase could be supplied by endowments. President MacKenzie knew of the Slough of Despond through which the University had passed in the early 1930's, when the Provincial Government grant had been suddenly halved and the University forced to reduce its staff and abandon a large part of its research work. In his *Annual Report of 1946-47* the President made an appeal for endowment for general purposes. Such provision he held to be

essential if the University is to undertake its share of pioneer teaching and research in those fields from which no immediate and tangible results can be expected. A good-sized endowment has proven to be a considerable guarantee of academic freedom and independence.

Without a self-perpetuating treasury of its own, the University cannot in fact be assured of that measure of stability which is vital to large segments of its work.

In the summer of 1951 came the legislative action of the St. Laurent Government which gave permanent annual assistance to higher education in each of the Provinces of Canada on the basis of fifty cents per capita of the estimated population. Within the Provinces the money was to be divided among institutions in proportion to their enrolment of students of university level. This historic decision was a final yielding by the Government in Ottawa to repeated pleas of Canada's

Federal Grants

universities, made for many years both individually and through the National Conference of Canadian Universities. In these periodic approaches to the Government, the University of British Columbia had taken an active part. The attention of the people and the Government of Canada had recently been drawn, in a very special way, to the national significance of our universities by the *Report of the Royal Commission on National Development in the Arts, Letters and Sciences*, published in the spring of 1951. President MacKenzie was a member of the "Massey Commission," as this Royal Commission was familiarly called, and both in this capacity and as a member and recent President of the N.C.C.U., he was able to bring the weight of his influence to bear upon the case for Federal Government aid to the universities, as recommended by the Commission. The substantial fillip to university finances throughout Canada provided at once and will continue to provide a much-needed sense of security in their planning and will tend to improve the status of the universities in the eyes of the community. In particular, at the University of British Columbia, the first year's help under the new legislation, came most opportunely. It was a time of rapidly falling registration and consequent severe loss of revenue; the University administration was faced with Faculty appeals for salary increases to meet the mounting cost of living; student fees had been raised for the second time in four years; the Provincial Government had increased its grant by \$200,000. The addition of these further several hundred thousands of dollars from the Federal Government served as a much-needed tonic to all sections of the University. One of the most welcome benefits it made possible was the upward adjustment of faculty salaries. As early as the autumn of 1946, the Faculty, through their negotiating body, the Faculty Association, requested the Board of Governors to institute a minimum salary list, based on that of the University of Toronto. In the five-year interval some increments had been granted but salaries continued to lag behind the rapid advance in cost-of-living. By the spring of 1951, the Administration recognized an emergency situation in which the University ran the risk of losing staff to institutions with appreciably higher salary scales. The advance in student fees, and the increase in the Provincial Government's grant were made in response to this danger. Receipt of the financial aid from the Federal Government put the University well on the way to matching the Toronto salary list which was, and remains, the highest in Canada.

In the years when the number of registered students was soaring and a score of new buildings were rising on the campus to take care of student instruction and recreation, important and far-reaching changes were taking place in the academic structure of the University. For a very long time it had been clear that the three original Faculties composing the University, viz., Arts and Science, Applied

Science and Agriculture, were not sufficiently comprehensive to satisfy the higher educational needs of the Province. Students demanded a greater variety of subjects and courses; the community looked more and more to the University to extend its services. Already, during the war, as we have seen, positive steps had been taken to set up centres of training in Law, Medicine and Pharmacy. The six years following peace saw the establishment of these three disciplines—Law in 1945, Medicine in 1949, Pharmacy in 1951. Within the old Faculties new Departments made their appearance, many courses of study were added to the curriculum and an entirely new unit of administrative convenience, named a School, came into being, occupying a place intermediate between a Department and a Faculty. The Department of Forestry was elevated to the status of a Faculty in 1951. Graduate Studies, organized as a unit, became a Faculty in 1948.

The Faculty of Law held its first classes in the session 1945-46, as stated in the last chapter. Its temporary buildings, consisting of offices, lecture hall, study room and library, were officially opened in January 1946. The curriculum was based on that adopted by the Canadian Bar Association for instruction in the common law system. The Faculty gave a five-year course (two years of Arts and three of Law) for the L.L.B. degree, and a six-year course (three years of Arts and three of Law) for the two degrees of B.A. and L.L.B. Students attending the Vancouver Law School, which had been maintained by the Law Society of Vancouver, were integrated to the courses in the new Faculty of Law. During the first year of its operation, a five-month refresher course was conducted, in co-operation with the Law Society, for young lawyers returning to their professional work after war-time service. Other staff who joined Dean G. F. Curtis, and F. Read in these years included G. D. Kennedy, M. M. MacIntyre, A. W. R. Carrothers, C. B. Bourne and R. G. Herbert. Registration in 1945-46 was 86 students. It rose rapidly, reaching its high point, in 1949-50, of 446, from which it tapered off to 325 in the following year. In recent years the number of Law students has fluctuated from session to session between 200 and 250. The first degrees in the Faculty were conferred in 1948.

The establishment of a Faculty of Medicine was a much more prolonged procedure than was the case with the Faculty of Law. Five years elapsed between the vote of money in the Legislature in 1945 and the enrolment of the first medical students. Two main factors caused the delay, viz., finances and hospital space, each of them reacting on the other and both dependent upon the clinical teaching policy of the new Faculty. A first step, preparatory to any policy decision, was agreed by both the University and the British Columbia Medical Association to be the making of a survey of medical schools. Dr. C. E. Dolman, Head of the Department of Bacteriology and Preventive Medicine, chosen for the task

by the University, after visiting the leading centres of medical instruction in Canada and the United States, submitted his report in April, 1946. Dr. G. F. Strong, for the Medical Association, conducted a similar, though more restricted survey. His report, which had the approval of the Medical Association's Committee on Medical Education, was also considered by the Board of Governors. Dr. Strong urged the appointment of a Dean as soon as possible and the setting up of a Medical Faculty in the autumn of 1946. One of Dr. Dolman's main conclusions was that, in order to ensure the most satisfactory teaching facilities, the Medical Faculty must have complete control of sufficient hospital beds, in a University hospital, situated on the campus and staffed entirely by the Faculty. In spite of the pressure of the Medical Association, who were supported by public opinion generally and by the large number of impatient, potential medical students, the President and Board, after studying these two reports, decided to move slowly and explore fully Dr. Dolman's proposals. It was not thought possible in any case to obtain the highest-quality teaching staff and the required laboratory material with which to begin pre-clinical courses in 1946. But the main consideration which counselled the Board's 'go slow' policy was the proposal in Dr. Dolman's report for a University hospital. The original plan upon which calculations of cost had previously been based, envisaged pre-clinical work being done at the University, and clinical teaching at the Vancouver General Hospital. If both these phases of medical instruction were to take place on the campus, as was strongly urged in the Dolman report, new financial arrangements would have to be made with the Government. The moneys set aside for the Medical Faculty, viz., \$1,500,000 for capital development and \$100,000 for operating expenses, would be entirely insufficient to meet these new requirements. Before proceeding further, therefore, the President and Board decided to adopt one of the last recommendations of the Dolman report and to invite a group of medical experts to survey the local situation in the light of their experience. The following leaders in medical education visited the campus and recorded their views: L. R. Chandler, Professor of Surgery and Dean of Stanford University College of Medicine; R. F. Farquharson, Professor of Therapeutics, University of Toronto; E. W. Goodpasture, Dean of Vanderbilt University School of Medicine; Alan Gregg, Director, Division of Medical Science, Rockefeller Foundation; Victor Johnson, Secretary, Council on Medical Education and Hospitals, American Medical Association; J. J. Ower, Professor of Pathology and Dean, Faculty of Medicine, University of Alberta; H. G. Weiskotten, Dean, Syracuse University College of Medicine. Their reports were received and considered by the Board in November, 1946. With regard to specific recommendations, they were unanimous in the opinion that "there should be a teaching hospital under the direct control of the Univer-

Dean of Medicine Appointed

sity," and that "the Medical Faculty should be an integral part of the University." This was strong corroboration for the viewpoint of the Dolman report in these vital matters.

Then followed a long series of conferences in which the chief participants were the University, the Provincial Government, the British Columbia Medical Association, and the Vancouver General Hospital. Early in 1947 Dr. Panton, Chairman of the Committee on Medical Education, British Columbia Medical Association, wrote to Premier Hart to the general effect that replies to a questionnaire sent to all members of the Association indicated a general view that classes in the Medical Faculty should start in the autumn of that year. The Senate cleared the way for action by the Board in a resolution passed at a special meeting in November, 1947, "that the Faculty of Medicine be established as an integral part of the University" and "with the ultimate objective of locating the Faculty of Medicine as a unit on the University Campus." The crux of the whole matter was the provision of adequate hospital teaching facilities. The Board of Governors were agreed that nothing could or should be done toward setting up a Medical Faculty until reliable assurances were given that 400 to 500 beds were available for clinical teaching in a main hospital teaching centre. Premier Hart and his two successive Ministers of Education, the Honourable G. M. Weir, and the Honourable W. T. Straith, made it clear that the Government would not exceed its capital assignment of \$1,500,000 for establishing a Medical Faculty. The Board found it necessary therefore to give up, for the present, and for the foreseeable future, the ideal, set forth in the Dolman report and in the Senate resolution, of a University teaching hospital on the campus. Its attention was then focussed on the existing and contemplated clinical teaching facilities of the Vancouver General Hospital, which had already offered its co-operation. The development of these facilities, however, to a point where they would be adequate for student needs had to wait on the advancement of the Hospital's own building programme. Finally, on April 7, 1948, the Minister of Education announced that the Faculty of Medicine would be established at the University by the autumn of 1949. In the course of the summer, the Provincial Government supplemented this announcement by a declaration that the Government was willing to improve the ward facilities of the Vancouver General Hospital for the use of the University. Two years later, in the summer of 1950, a generous contract and one which showed due and understanding regard for the University's interests, was negotiated with this Hospital for the use of not fewer than 400 beds for clinical teaching purposes.

Meantime, in the spring of 1949, the search for a Dean had led to the appointment of Dr. Myron M. Weaver, formerly Assistant Dean of Medicine at the

Faculty Organized : Pharmacy

University of Minnesota, whose Medical Faculty had given the University of British Columbia its first President. Organization of the new Faculty was taken in hand at once by Dean Weaver. In 1949-50, several staff appointments were made. Dean Weaver became a member of the Board of the Vancouver General Hospital.

The first medical class was enrolled in the autumn of 1950. Sixty out of 270 applicants were chosen; all but three were British Columbians; 20 were World War II veterans; 13 were married. To mark the establishment of the Faculty of Medicine and the beginning of its work, a special Congregation was held on September 27, attended by many outstanding medical men. A new wing of the Vancouver General Hospital, completed early in 1951, was designated the principal area for clinical teaching; the offices of the Dean of the Faculty and the Department of Medicine and Surgery were moved into the ground floor of this wing. At the same time, the Provincial Government provided \$750,000 for a Pathology Building and a new teaching unit to be constructed near the Hospital. By July, 1951, the pre-clinical and clinical Departments of Anatomy, Biochemistry, Physiology, Medicine, Obstetrics and Gynecology, Paediatrics, Pathology and Surgery were functioning. Instruction in clinical subjects was scheduled to begin in January 1952. Plans were also being laid with the Hospital for establishment of a child Health Centre. At the University, the Faculty had begun to assume its teaching responsibilities to the other Faculties, Schools, and Departments. Research was begun on a series of projects made possible by grants received from the National Research Council, commercial firms and private foundations, most notably the Hamber Endowment Fund, the gift of Chancellor and Mrs. E. W. Hamber. So came into being the Medical Faculty, the victim at its birth of compromise, due to lack of funds — a pattern familiar to most of the older members of the U.B.C. academic family. The Faculty bestrides the city, with one foot on the campus and the other in the Vancouver General Hospital. In the meantime, the University must be content with the very welcome Student Health Service in the Wesbrook Building, under its first full-time Medical Director, Dr. A. K. Young,⁵ and will look upon its healing offices as the symbol and harbinger of a full-fledged University Hospital.

The Faculty of Pharmacy was authorized by Senate as from July 1, 1949. For three years prior to this time, degree work had been given by the newly-created Department of Pharmacy as a constituent Department of the Faculty of Arts and Science. The first Bachelor of Science in Pharmacy degrees (B.S.P.), awarded in 1949, were the result of these administrative and teaching arrangements. Because of overcrowding in laboratories, it was found necessary, in 1949,

⁵ Appointed in 1950.

to restrict Second Year enrolment to 50. In selecting students at this time, the University gave priority to veterans and those with practical experience in Pharmacy. Laboratory and classroom accommodation was happily relieved in 1950 with the opening of the Pharmacy Wing of the Biological Sciences Building.

Forestry studies at the University underwent rapid development in these post-war years. The war had made unprecedented demands upon the forest industry of British Columbia. More and more it became recognized as, perhaps, the greatest among the primary industries of the Province. Students in the Applied Sciences in larger numbers chose Forestry as a career. The practical needs of the industry evolved little by little in the light of experience; Forestry courses at the University were altered and adapted to serve these needs. The course in Forest Engineering, leading to the degree of B.A.Sc., remained. In 1945-46, the double degrees in Forestry with Commerce, Botany and Economics were abolished; within the work for the Bachelor of Science in Forestry degree (B.S.F.), elective courses were established which the student might choose, according to the phase of Forestry in which his interest lay, such as, Forest Management, Business Administration, Harvesting, Forest Products and Wood Technology, Forest Pathology, Entomology, Wildlife Management. An increasing amount of attention was devoted to the botanical and other scientific aspects of Forestry. Research work was undertaken in genetics, especially of the Douglas fir, in response to the growing concern with problems of conservation and reforestation. The Provincial and Federal inventories provided the Department with a field of operations. Methods of topographical and aerial survey of timber lands were explored. F. M. Knapp was appointed Director of University Forests, in charge of the development of the forest areas, both in the Endowment Lands at Point Grey and in the research forest in Garibaldi Park. The B.C. Loggers' Association and the H. R. MacMillan Export Company made large donations toward buildings at the Loon Lake Camp and encouraging the work of the Research Forest Station. Mr. MacMillan continued his generous support of the Department. His gifts made possible the organization of the Forestry Library and greatly aided in developing the scientific work of the Department. He underwrote the support of a Chair of Silviculture and sponsored several research projects including a study of the taxation of crown-granted timber lands. The new importance of Forestry as a study discipline was recognized by the University in 1950, to the great satisfaction of the Forest Industry, when the Department was raised in status and became the Faculty of Forestry. Lowell Besley, Department Head since 1948, was made Dean of the Faculty of Forestry. In the Spring Congregation of 1950, Mr. MacMillan was awarded the Honorary Degree of Doctor of Science.

Graduate Studies : Size of Faculties

A fifth new Faculty, Graduate Studies, was created in 1947-48, with H. F. Angus as Director, later as Dean. It was composed of representatives of all the Faculties. Its main function was to co-ordinate and supervise regulations for graduate degrees, sought by students of any Faculty. Its work had been done previously by individual Faculties, each acting for its own students, with a co-ordinating, consultative committee. At the time the Faculty of Graduate Studies came into being, the University offered courses for the Master's degree in Arts and Science (M.A.), Social Work (M.S.W.), Applied Science (M.A.Sc.), and Agriculture (M.S.A.). It had also, cautiously, begun courses for the degree of Doctor of Philosophy in the Departments of Physics, Biology and Botany, and Zoology. The first degrees of Ph.D. were awarded at the Spring Congregation of 1950, to T. L. Collins, in Physics, and M. M. R. Khan, in Zoology. The number of students in the Faculty of Graduate Studies has increased steadily until, in the session 1957-58, there was a total registration of 457, of whom 80 were pursuing the degree of Ph.D. in one or other of the 23 Departments now offering courses for this degree. The Master's degree is now also offered in Pure Science (M.Sc.), in Forestry (M.F.), in Business Administration (M.B.A.), in Education (M.Ed.), and in Physical Education (M.P.E.). The increasing interest in graduate work made necessary a change in the administrative framework of the Faculty. When Dean Angus retired in 1956, he was succeeded by G. M. Shrum as Dean and F. H. Soward as Associate Dean. Every Faculty of the University shared in this new interest in graduate work.

The emergence of five new Faculties illustrates the increasing demands of the Province for the diverse forms of talent and training to be found in the University. The relative size of the Faculties, as they became adjusted, showed, in a rough and ready way, the relative needs of the Province for the education and training offered in the various Faculties. The Faculties of Arts and Science and Applied Science still remained far the largest. In 1947-48, the year of the peak enrolment, registration in Arts and Science was 6,152; in Applied Science, 2,155; in Agriculture, 546; in Law, 409. Several of the new Faculties drew up alongside and eventually passed Agriculture. In 1950-51, registration by Faculties was: Arts and Science 3,614, Applied Science 1,120, Graduate Studies 519, Law 325, Agriculture 286, Pharmacy 166, Forestry 142, Medicine (with First Year only) 60. In 1957-58, when Medicine now had students registered in all 4 years and Education and Commerce had been added to the list of Faculties in the late 1950's, registration by Faculties was: Arts and Science 4,226, Applied Science 1,500, Education 1,125, Commerce 605, Graduate Studies 457, Forestry (with the Sopron Division) 328, Law 248, Medicine 213, Agriculture 165, Pharmacy 119.

In this period of expansion great changes took place within the Faculties themselves. The function of the Faculty of Arts and Science as auxiliary to the other Faculties assumed an increased importance. Arts and Science might even be regarded as the parent of the new Faculties of Pharmacy, Commerce and Education, originally departments in that Faculty. The new Faculties in turn gave a marked stimulus to a wide range of studies in the Faculties of Arts and Science which continued to be the centre of teaching and research in the Humanities, the Social Sciences and the Pure Sciences.

Both the Faculty of Arts and Science and the Faculty of Applied Science, in response to administrative needs, produced a new type of offspring called a School, which, though enjoying an independent existence, continued to live under the parental roof as an affiliate of the parent Faculty. The name was introduced and applied to a professional department which might bring into its instructional work the services of extra-University practitioners, as well as members of other departments. The Head of a School is known as Director. He presides over an Advisory Council, whose members, in the main, represent the various subjects taught in the School's curriculum. As an administrative and teaching unit, the School is autonomous, though it reports to the Faculty of which it is a member. In the Faculty of Arts and Science, in the years 1950 and 1951, four Departments were given this new status, viz., Commerce, under E. D. McPhee; Education, under M. A. Cameron; Home Economics, under Miss Charlotte S. Black; and Social Work, under Miss Marjorie J. Smith. The Department of Physical Education received School status in 1952, with R. F. Osborne as Director. In the Faculty of Applied Science, the Department of Architecture, formed in 1945-46, under F. Lasserre, and the veteran Department of Nursing, under Miss H. Evelyn Mallory, became Schools in 1951.

A few new Departments also made their appearance. These included, in the Faculty of Arts and Science, Slavonic Studies, under J. O. St. Clair-Sobell; in the Faculty of Applied Science, Architecture, soon to become a School; Engineering Physics under G. M. Shrum; and Agricultural Engineering under J. R. W. Young; in the Faculty of Agriculture, the Department of Agricultural Mechanics, also under J. R. W. Young. The task of establishing the Slavonic Studies Department was greatly aided by a \$90,000 grant from the Rockefeller Foundation. President MacKenzie was convinced that Canada's new importance in international affairs required that the University give more attention to problems of international relations. Accordingly, in 1946, F. H. Soward, Professor of History, was appointed Director of International Studies to co-ordinate work among several Departments. The President's conviction is reflected also in the formation of the Department of Slavonic Studies and in the establishment

of Asian Studies — peculiarly appropriate to this University, situated on the margin of the Pacific area.

Many new courses were introduced in the existing Departments of all Faculties. In 1947-48 alone, 110 courses were added to the curriculum. New courses continued to appear annually to meet the increasing needs of the student population and the varied demands made by the community upon the services of the University's graduates. In the same year more than 100 additions were made to the teaching staff which now totalled 824 for a student enrolment of 9,734. In the session 1951-52, when the number of students had dropped to 5,538, the staff still numbered 821. Of these, 369 were full-time, and 452 were part-time teachers. These latter included the clinical professors and instructors in the Faculty of Medicine, field-work supervisors in Social Work, lecturers and honorary lecturers in Law, demonstrators, assistants and research assistants, and teaching and research fellows. The student-staff ratio of this full-time staff (369) is 15.1 of the total staff (821), counting part-time as half-time, it is 9.1. Regarding this ratio, President MacKenzie commented in his *Annual Report* for 1951-52:

it is better than it has ever been, but it is still short of the desirable for the very important functions which the University Faculty is expected to perform.

The stimulus given by the war to research as a function of the University was continued in the post-war years, as evidenced by the formation of the Faculty of Graduate Studies and the increasing number of graduate degrees. On the initiative of Chancellor Hamber, in response to the President's warning of the University's need for endowment, an appeal was launched in 1946 for \$1,000,000 to support the research activities of the University. Although this target sum was not reached, the appeal intensified the interest of industry and outside organizations, with the result that the funds available for research increased annually, both from private endowment sources and from the University budget.

A highly significant development in post-graduate research took place in 1949 when the Canadian Joint Committee on Oceanography suggested that the University of British Columbia establish a programme of instruction and fundamental research in Oceanography. The University accepted the proposal with the result that still another academic structural species saw the light on the campus in the form of an Institute, in this case, the Institute of Oceanography. We read in the University Calendar that this Institute

is supported in part by the Defence Research Board and by the Joint Committee on Oceanography, the latter body representing the interests of the Royal Canadian Navy, the National Research Council, the Fisheries Research Board and the Hydrographic Service.

The three University Departments of Chemistry, Physics and Zoology unite in

Other Institutes

the Institute to give training to graduates in the principles and techniques of oceanographic research. The Institute is administered by a committee whose first chairman was W. A. Clemens, Head of the Department of Zoology, who became Institute Director in 1954-55. He was succeeded in 1958 by G. L. Pickard, Professor of Physics.

A similar research centre appeared four years later, in 1953-54, when the Institute of Fisheries was established within the Faculty of Graduate Studies to do advanced teaching in the use and management of the nation's fisheries resources. W. A. Clemens, named Chairman of the Institute Committee, became Director in the following year. He was succeeded in 1956-57 by P. A. Larkin, Associate Professor of Zoology. The establishment of these two Institutes for graduate study of the sea and its products, and the strong support they received from the Federal Government, gave great encouragement to the Biological Sciences at the University and especially to the Department of Zoology, which had for many years proclaimed, by precept and example, the scientific and economic importance of marine studies.

Two other areas of research and instruction were entered by the University in these years, viz., Regional Planning and Criminology, both under the aegis of the Faculty of Graduate Studies. In the autumn of 1950, with the support of the Central Mortgage and Housing Corporation of Ottawa, a two-year post-graduate diploma course in Community and Regional Planning was created to supply the growing need for qualified planners with professional status. Because of the spectacular population growth in British Columbia and the expansion of her cities, towns and rural communities, the University was thought to be the logical centre for study of the problems arising from such conditions and for instruction in the methods of dealing with them. The course was placed under the supervision of H. P. Oberlander, secretary of the directing committee, whose chairman was the Dean of the Faculty of Graduate Studies.

In the session of 1953-54 a 15-unit post-graduate diploma course in Criminology was established, designed to meet the needs of students who intended to gain professional knowledge in the field of corrections. The chairman of the Supervisory Committee was H. F. Angus, Dean of the Faculty of Graduate Studies, who was later succeeded as chairman by H. B. Hawthorn, Head of the Department of Anthropology, Criminology and Sociology.

Still another Institute was approved by the Board of Governors, on a recommendation from the Senate, in 1956. The Institute of Social and Economic Research has the broad purpose of facilitating and initiating research and related endeavours in the social sciences. It is financed from private or other sources outside the University. In its first two years of operation it has arranged for eleven

Sciences Expand

research projects, carried out by members of the Faculty, for one visiting Fellow, and for a series of visiting Lecturers. H. B. Hawthorn is Director, assisted by a Supervisory Committee.

Increase in the number and diversity of courses given in the older Faculties was most marked in the Faculty of Arts and Science and there, especially, in the pure sciences. Because Physics and Chemistry had to do more intimately with supplying the modern needs of National Defence and with the work of Government supply agencies, these two University Departments received more generous financial support and expanded more dramatically than others. Many of their research projects were continuous from the war years, some were concerned with work which had had to be abandoned during the war, but the great bulk of them were undertaken at the request of defence and scientific agencies of the Federal Government and with the aid of subsidies. This was true, for example, of the programme for nuclear physics which was planned in co-operation with the National Research Council and the Atomic Energy Control Board of Canada, in order to make full use of the Van de Graaf generator installed in the new Physics Building in 1948. G. M. Volkoff returned to the University in 1947 from his work with the Federal Government. He continued, along with other members of the Physics Department, to work closely with the A.E.C.B. in Eastern Canada. In 1948-49, research grants from outside sources to this Department alone totalled \$142,120. The prestige of the Department, and of its head, G. M. Shrum, was such that outstanding physicists and graduate students were attracted to U.B.C. to work and to study. With the opening of the new building in 1947, Physics was probably the best-equipped Department in the University. Similarly, R. H. Clark, Head of Chemistry, and his successor, J. G. Hooley, as Chairman of the Department, along with their associates, were able to expand chemical research in work of national significance, supported by the great scientific agencies, notably the National Research Council. In 1951, a mass spectrometer, forerunner of three others in the years following, was installed in the Chemistry Building, making available new avenues of enquiry for the sciences.

Opening of the Biological Sciences Building in 1950 and of the Westbrook Building in 1952 began a new phase of development in the work of the Biological Sciences. The Zoology Museum received thousands of new specimens in its mammal, bird, reptile and insect collections, thus greatly adding to its usefulness as a teaching medium. The Department of Zoology, at the same time, became more and more involved in the work of the Fisheries and Wild Life authorities of the Provincial and Federal Governments.

Graduate work done in all the sciences, including Geology and Geography, was of national and, in some cases, of international significance by the end of the

post-war era. Of unusual interest was the progress made in a series of inter-departmental studies in the relatively new field of Biogeochemistry. A striking tribute was paid, in 1950, to the Geology and Geography Department and to the memory of Dean R. W. Brock, its first Head. The Consolidated Mining and Smelting Company, in that year, began a generous annual donation devoted to establishing the R. W. Brock Chair of Geology. Fittingly enough, the first appointee to this Chair was H. C. Gunning, formerly one of Brock's Geology students in the Class of Applied Science, 1923, who, in the same year, succeeded M. Y. Williams on his retirement as Head of the Department. Four years later, in 1954, he became Dean of the Applied Science Faculty, in succession to H. J. MacLeod.

Research was vigorously pursued by members of the Department of Mathematics under the headship of Dean Buchanan and R. D. James, who succeeded Dean Buchanan on his retirement as Head in 1948. In 1950, the Department was authorized to offer a course of study leading to the degree of Ph.D.

New subjects of study which appeared in the curriculum of the Social Sciences and the Humanities indicated current trends of community as well as student interest. A course in Chinese external policy, first offered in 1948; a course in International Law, given by President MacKenzie, and in Reconstruction Problems, given by H. F. Angus; studies in Anthropology, tentatively begun by C. W. Topping, Professor of Sociology, in 1946, continued and extended by H. B. Hawthorn, appointed Professor of Anthropology in 1948; courses in Russian language and culture, offered by J. St. Clair-Sobell and W. J. Rose, noted authority on Poland and Czechoslovakia; instruction in Linguistics, given in the Department of Classics by the well-known Dutch scholar, A. W. de Groot; new courses in the Department and School of Commerce; development and application of counselling techniques by the Department of Philosophy and Psychology and new work undertaken by this Department in Clinical Psychology leading to the Ph.D. degree; all these developments and many others illustrate the widening academic and cultural horizons of the work done in the Faculty of Arts and Science.

It is also worthy of note that, in these years of crowded classrooms and heavy teaching loads, when the University was putting forth every effort to cope with pressing material and academic problems, the foundations were laid for what many friends of higher education in British Columbia hope and believe will eventually become a Faculty of Fine Arts. From the earliest days of the University proposals had been made repeatedly to include Music as a formal subject of study in the Curriculum. In 1937, a provision was published in the Calendar whereby, "pending the establishment of a department of Music in the University of British Columbia," six units of undergraduate credit towards a B.A. degree

Math 362

CANDIDATE'S
EXAMINATION
NUMBER

~~Supplemental~~

MARK

September 1950
SUBJECT OF EXAMINATION

MARKS

Time 3 hours

1 Find the orthogonal trajectories $\tilde{x} = ky$
100 or 48

2 Test the equation

232

$$(x^3 + 5xy^2) dx + (5x^2y + 2y^3) dy = 0$$

to show that it is exact and solve.

3

$$\text{Solve } y' + y \cos x = e^{-\sin x} \quad \text{Linear}$$

a. p 35

4 If the number of bacteria in a quart
of milk doubles in 4 hours, in what time
will the number be multiplied by
25.

25.

5

Find the singular solution \mathcal{L}

$$y = px + \frac{1}{k^2} \quad y = px + ax + \sqrt{1+k^2}$$

6

Solve

$$(D-1)(D-2)y = e^{4x} + e^{2x} \quad (D = \frac{d}{dx})$$

7

$$(D^3 + 3D^2 + 3D - 1)y = e^{-x}$$

8

$$(D^2 - 2D + 4)y = -e^{2x} \cos x.$$

7/29/17 9/9

$$(x^2 D^2 - 3x D + 4) y = x^{m_1}$$

- 10 Change the dependent variable so as to remove the 1st derivative and solve k124 8C

$$x^2 y'' + 4x^3 y' + (4x^4 + 2x^2 + 1) y = 0$$

10. k196. 1a

- 11 Integrate in series in ascending powers of x .

$$x^{-2} y'' + 5x y' + (4 - 2x^3) y = 0$$

12. Solve Bessel's Equation

$$x^2 y'' + x y' + (x^2 - n^2) y = 0$$

~~ascending series~~

- 13 Solve

$$(D_1^2 - 2D_1 D_2 - 3D_2^2) z = 0$$

k247

- 14 $(D_1^2 - 2D_1 D_2 - 3D_2^2) z = 20 \cos(y + 2x)$

495

were granted to a student who, at the time of graduation, held a recognized degree or diploma in Music. In 1946 a Chair of Music was established. This action was made possible by the splendid donation of Mr. Robert Fiddes of \$5,000 a year for a period of ten years. Mr. Harry Adaskin was appointed to this Professorship. Beginning in 1947, courses were given in the History and Criticism of Music and in Musical Theory. Subsequently Mrs. Jean Coulthard Adams and Miss Barbara Pentland were added to the staff and a variety of non-credit courses were offered. The Visual Arts were less fortunate, though here, too, some progress was made. In 1946 and 1947, owing largely to the vigorous representations of H. C. Lewis, Professor of English, Warden of University Art, acting in co-operation with the Vancouver Art Gallery, exhibitions of Art were arranged through the Western Canada Art Circuit. A University Fine Arts Committee was formed at this time with divisions of Music, Visual Arts, Theatre, Literature, Handicrafts, Cinema, Dance and Radio. In 1948 space was set aside for an Art Gallery on the ground floor in the new wing of the Library. In 1949 books on the Fine Arts were purchased with money secured from the Koerner Memorial Fund. Important financial assistance was also given by the University Chapter of the I.O.D.E. Thereafter donations began to come in from other private sources as well as from University funds, and in 1950-51 the Committee was especially active in all branches of its work. A Fine Arts Calendar of Events was published, co-ordinated with similar student activities. Poetry readings, play productions, piano recitals, a film festival and art exhibitions were held. In this year, too, as if foreshadowing future developments, B. C. Binning, Assistant Professor of Art and Design in the Department of Architecture, and Chairman of the Fine Arts Committee, was awarded a Carnegie grant for travel in Canada, the United States, the United Kingdom and Europe for the main purpose of visiting and studying Art Departments of universities in these areas.

Of all the Faculties, Applied Science had, relatively, the heaviest burden to carry in dealing with the post-war bulge in student enrolment. Because such a large proportion of the work was demonstrative, the laboratories and other instructional facilities were taxed far beyond their normal capacity. It was not until 1950, when the peak of registration was passed, that the new Engineering Building was ready for use, and gave relief from most of the makeshift accommodation. In spite of all difficulties, the standards of work were maintained at a high level. Dean J. N. Finlayson, who led the Faculty through this difficult period, was awarded the Honorary Degree of Doctor of Science on his retirement in 1950. He was succeeded as Dean by H. J. MacLeod, Head of the Department of Mechanical and Electrical Engineering. This Department was thereupon divided into two Departments, when W. O. Richmond became Head of Mechanical

Engineering and F. Noakes of Electrical. J. F. Muir succeeded Dean Finlayson as Head of Civil Engineering. Much of the research done by the Faculty of Applied Science was carried on under Federal Government grants from the Research Board or the National Research Council. This was specially true of the Civil Engineering Department's hydraulics research on the Fraser River system, and of numerous experiments conducted by the Departments of Mechanical and Electrical Engineering. The research programme of the Department of Mining and Metallurgy was also greatly aided by financial support given the Chancellor's Fund by the Consolidated Mining and Smelting Company and by donations received from Sherritt Gordon Mines. J. M. Turnbull, veteran Head of the Department, was succeeded on his retirement in 1945 by F. A. Forward. G. A. Gillies, another pioneer member of the staff, retired at this time.

In the Faculty of Agriculture, a number of new fields of study were introduced, among which were courses in the new Department of Agricultural Engineering, Food Technology, Animal Nutrition, Fur Animal Work, Animal Entomology, Landscape Design and a diploma course in Horticulture. Important administrative changes took place also. Dean Clement, after directing the Faculty for thirty years, retired in 1949, to be succeeded by B. A. Eagles, U.B.C. graduate, gold-medallist in the class of Arts 1922, scientist and teacher, Head of the Department of Dairying. In recognition of his services to the University, to agricultural science and to industry, the Honorary Degree of Doctor of Science was conferred on Dean Clement, who was Congregation speaker on May 12, 1949. As Head of the Department of Agricultural Economics, he was succeeded by W. J. Anderson. Research continued as a principal activity of all Agriculture Departments, aided on an increasing scale by moneys provided by government, industry and private persons, in very many instances for co-operative projects. New plans for the extension of the Botanical Gardens began to take shape, in an inter-Faculty co-ordinated effort of the three Departments of Horticulture, Biology and Botany and Forestry. These plans were under the direction of T. M. C. Taylor, Professor of Biology and Botany, who was appointed Curator of the Herbarium and Botanical Gardens. A land-clearing programme added forty-five acres to the area available for the Department of Agronomy, whose activities in Rhizoma Alfalfa seed production continued to be a major research project. Work in Dairy Technology was expanded in 1950. The Departments of Animal and Poultry Husbandry continued their profitable studies in problems of genetics. At the request of the Defence Research Board, Animal Husbandry carried on research into the effects of ultra-violet radiation.

The post-war era was marked by great popular enthusiasm for extra-curricular education. The Department of University Extension responded to this enthusiasm

by expanding all phases of its work, with the assistance of members of the University teaching departments. In 1948-49, for the first time, Extension Department workers were able to spend a few consecutive days in each of a number of the thinly-populated urban and rural areas of the Province, giving short courses and demonstrations. The Dominion-Provincial Youth Training Programme was revived in 1947 and the subjects of instruction were greatly augmented. The co-operative programme for British Columbia fishermen, which had continued in operation through the war years, was now enlarged. In 1948, the Federal Government doubled its annual grant of \$5,000, which made it possible to add several new short courses and to make other improvements in the programme. The Drama Division of the Extension Department, active among the armed services during the war, now came into its own, under direction of Miss Dorothy Somerset, who was elected President of the Western Canada Theatre Conference in 1946. One of the ambitious objects of the Drama Division of Extension was now stated to be the development of a Canadian theatre with professional standards. The credit courses in Theatre, given in the Department of English, greatly contributed to this end. In 1948, a further development took place when a Fine Arts Division was created in the Department, in close association with the University Fine Arts Committee and the Department of Music.

Completion of the new north wing of the Library brought an end to a period of great anxiety for Librarian W. Kaye Lamb and his staff. The addition of new Faculties, Schools and Departments, as well as the great influx of students, stretched almost to the breaking-point the facilities of a building and services originally planned for a student body of 1500. Now, with the enlarged accommodation, a Reference Division had its own spacious shelving and reading room, named for John Ridington, the University's first Librarian; a Serials Division set up its headquarters on the fifth floor of the main concourse; seminar rooms were made available on the top floor of the new wing; a Bio-Medical reading room and a map room were opened in 1950; space was found at last to display properly the Museum and University Art collections; an Anthropology Museum, including the Burnett and Raley collections, and a University Art Gallery were established on the ground floor of the new wing. Under great pressure to add, both qualitatively and quantitatively, to its holdings, the Library raised the number of volumes from 260,000 in 1947-48, when an exact count was made, to approximately 320,000 in 1950-51. Important donations included the H. R. MacMillan Forestry Collection, Dr. MacMillan's gift of a collection of old maps, the A. J. T. Taylor Arctic Collection, and microfilm files of the *Vancouver Sun* and the *Vancouver Daily Province*. Most notable among donations of funds for Library development were the Koerner Memorial Trust set up in 1948 and

Veterans' Counselling Bureau

the Leon and Walter Koerner grant in 1950. As the new wing, which he had planned with such meticulous care, was nearing completion, Dr. Lamb resigned on being appointed National Archivist and Librarian in Ottawa where he was given the task of planning a national library for Canada. After a six-month interval, in which Miss Anne Smith, Head of the Reference Division, gave expert service as Acting-Librarian, L. W. Dunlap, formerly of the Library of Congress, was appointed Librarian. Dr. Dunlap remained for less than two years. In August, 1951, Neal Harlow of the University of California, Los Angeles, took office as Librarian and still, in 1958, continues to administer the affairs of the Library.

One of the most important developments on the campus resulting from the large enrolment of veterans was the setting up, on October 1, 1945, of a Veterans' Counselling Bureau under the direction of Major J. F. MacLean, D.S.O., to act as an advisory service for all veterans. With the aid of two full-time counsellors and the part-time assistance of several Faculty members, the Bureau interviewed all student veterans, conducted aptitude and intelligence tests for many, and, in liaison with the Federal Department of Veterans' Affairs, disbursed educational allowances. Special tutorial classes were arranged for those students whose education was found to be defective or who had to withdraw from the University. Of the latter group, ninety percent were either allocated to special vocational training or placed in jobs. In the spring of 1946, the Bureau assumed the additional task of trying to find employment for all students, a duty which, for a number of years, had been undertaken by a Student Employment Bureau, sponsored by the Students' Council. A further expansion of the Counselling Bureau's work provided a staff personnel section which concerned itself with recruitment of non-teaching staff, job classification, negotiations with the Union Local, and arranging Union agreements. Services to the students were also enlarged to include, on the one hand, testing and counselling of all high school students entering the University and, on the other hand, serving as a liaison employment agency between students and potential employers in all parts of Canada. The extent of their work is revealed by the statistics for the year 1950-51 when the Bureau provided counselling and testing for 1,000 students, secured employment for 611 graduands, Christmas holiday employment for 1,131, and summer employment for 1,439 undergraduates.

With the end of hostilities in the summer of 1945, the future of the armed forces contingents on the campus appeared to be uncertain. The decision was soon made, however, by the Department of National Defence to retain training cadres at the universities for the Army contingents of the Canadian Officers Training Corps. Unlike the undergraduate attitude at U.B.C. at the end of

Services Training Units

World War I, a considerable interest continued in service training. Senate abolished compulsory military training on the campus in September 1945, but 17 Officers and 73 Other-Rank Cadets registered for the C.O.T.C. courses in this first post-war session. In February 1946, Lieutenant-Colonel G. M. Shrum, O.B.E., M.M., who had commanded the C.O.T.C. Contingent since 1937, retired. He was succeeded in command by Major R. W. Bonner, who in turn relinquished command to Major J. F. MacLean, D.S.O., in 1953. Colonel Shrum was appointed Honorary-Colonel of the Contingent. The practice of waiving their training pay by members of the Contingent, which had been in vogue since 1928 and had produced a total sum in excess of \$125,000, was discontinued in September 1945. The balance of these funds amounting to \$25,000, left over when the cost of the new Armoury had been met, was placed in trust for the benefit of the Unit and for the promotion of military training in the University.

In the summer of 1946 the Naval Service established the University Naval Training Divisions on a permanent basis to train Officers for the R.C.N. or the R.C.N. (Reserve). In September 1947 A/Lieutenant-Commander F. J. E. Turner, R.C.N.(R.), took over command of the U.B.C. Unit when Lieutenant-Commander H. M. McIlroy retired. Lt.-Cmdr. Turner was succeeded in Command in January, 1955, by Lt.-Cmdr. H. E. D. Scovil, who, in turn, gave up command of the U.B.C. Naval Training Division to Lt.-Cmdr. E. S. W. Belyea in July, 1955. The Air Force returned to the campus in January 1949. The R.C.A.F. (Auxiliary) Flight was formed at this time, commanded by Flight-Lieutenant A. R. Haines, D.F.C. Wing Commander R. G. Herbert, D.F.C., later took over command. As the war years receded and a new generation entered the University, applications for admission to the Services Units increased, and, in the case of the C.O.T.C., soon exceeded the permitted enlistment. In 1950-51 the strength of the respective Units was: U.N.T.D., 78 Cadets; C.O.T.C., 6 Officers and 196 Cadets; R.C.A.F. Flight, 109 Cadets. All service training on the campus, with headquarters in the Armoury, was now carried on under the jurisdiction of the Joint Services University Training Committee, which, in 1945, replaced the University Committee on Military Education previously appointed by the Senate of the University.

The end of the post-war era in 1951 marked also the end of Chancellor Hamber's term of office. These had been seven years of proud achievement by the University. It may be said without fear of contradiction that the strong guidance of the Chancellor, as Chairman of the Board, was an important contributing factor in all phases of this achievement. In order that his influence might not be lost to its councils, a grateful University gave him the specially-created

title of Chancellor Emeritus. In April, 1951, Brigadier Sherwood Lett, C.B.E., D.S.O., M.C., E.D., K.C., B.A., LL.D., was elected by acclamation to succeed Chancellor Hamber. Brigadier Lett's University training at U.B.C. and, as a Rhodes Scholar, at Trinity College, Oxford, his unique knowledge of his Alma Mater where he had been elected first President of the Alma Mater Society in 1915, his diverse executive experience in public and private affairs continued the high qualities of leadership which had come to be associated with the Chancellor's office.

The Board of Governors over which Chancellor Lett presided, when he took office on May 28, 1951, included five of the nine members who had served continuously under his predecessor, viz., A. E. Lord, elected by Senate, and four of the five appointees of the Lieutenant-Governor-in-Council; J. B. Clearihue, G. T. Cunningham, W. G. Murrin and R. H. Neelands. The fifth "official" member, the Honourable Mr. Justice J. M. Coady, had replaced the Honourable Mr. Justice Denis Murphy, who resigned because of ill-health in 1946, after serving on the Board for a total of 26 years. The other two elected representatives of Senate, Mrs. Sally Murphy Creighton, a daughter of Mr. Justice Murphy, and R. E. Foerster, gave place, in the autumn of 1951, to K. P. Caple and J. M. Buchanan. All the Board Members elected by Senate were U.B.C. alumni.

As the academic responsibilities of the University increased with its material enlargement, and its public relations became ever wider and more complex, administrative changes were found necessary to relieve the burden of duties where it bore most heavily, i.e., in the offices of the Dean of the Faculty of Arts and Science, and of the President. In the session 1945-46, when the Faculty of Arts and Science was struggling to provide for its surging mass of 4,000 students, W. H. Gage, Professor of Mathematics, was appointed to the post of Assistant to the Dean of the Faculty. Direction by the President of the domestic affairs of the University was, in itself, an exacting and time-consuming task. But presidential duties required his frequent absence. Even during his first years of office, President MacKenzie was forced to spend a good deal of his time elsewhere, dealing with some phase or other of University business. For the Head of a great public institution which was enlarging its annual demands on the public treasury, the duty of explaining the University to the people of the Province was a continuous commitment. Meetings in Ottawa of the Advisory Committee on the Education of Veterans; frequent conferences on University affairs with members of the Government in Victoria; meetings with U.B.C. Alumni Branches; journeys undertaken for recruitment of staff; these and many other similar assignments drew the President away from the campus often for days at a time. In 1947, he

attended the Conference of British Universities and in 1948, the Congress of Universities of the British Commonwealth, both held in Oxford, England. When the President was absent, the discharge of his duties fell upon one of the Senior Deans, already over-burdened with his own work of administration and teaching. To relieve this situation, the office of Assistant to the President was created in 1947, and, in the autumn of that year, G. C. Andrew, Chief, Information Division, Department of External Affairs, Ottawa, was appointed to the position, with teaching assignments as Professor in the Department of English. In the following year, the manifold nature of the duties performed by W. H. Gage was formally recognized when he was given the office and title of Dean of Administrative and Inter-Faculty Affairs. In recognition of his contribution to the University, both as administrator and as teacher, Dean Gage was awarded the Honorary Degree of LL.D. at the Spring Congregation in 1958, a distinction seldom received by an active member of the Faculty.

Members of the University teaching staff, despite the unusually heavy demands of teaching, research, and University Extension work, did not shrink from undertaking tasks and pursuing interests beyond the limits of the campus. Normally, in the absence of individual professors, their classroom duties would be performed, if possible, by their colleagues. In his *Annual Report* for 1949-50, the President records that

in this year at least some seventy of the teaching staff held office in more than one hundred and sixty organizations, many of them acting in executive positions.

The fact to which the President makes reference here is illustrated in the following selection from the list of extra-University appointments or offices held in these years by Members of Faculty. The President himself was a member of the Massey Commission on the National Development in the Arts, Sciences and Letters whose sittings took place periodically across Canada over a period of two years; H. F. Angus served on the Royal Commission on Transportation. In 1945-46 F. H. Soward was President of the Canadian Historical Association; W. N. Sage, Vice-President, Champlain Society; S. N. F. Chant, President, Canadian Psychological Association. In subsequent years, J. L. Robinson was President, Association of Pacific Coast Geographers; I. McT. Cowan, President, American Wild Life Society; F. A. Forward, President, Dominion Council of Professional Engineers; Dean J. N. Finlayson, President, Engineering Institute of Canada; H. C. Lewis, President, Federation of Canadian Artists; H. V. Warren, President, First National Resources Conference of British Columbia; J. St. Clair-Sobell, President, American Association of Teachers of Slavonic Languages; R. D. James, Editor, *Canadian Journal of Mathematics*.

The period 1945-51 saw a large number of changes of senior administrative

Senior Faculty Retirements

and teaching personnel, including, as we have already seen, the replacement, on retirement, of the Deans of the three oldest Faculties. Dean Buchanan was succeeded by S. N. F. Chant, Head of the Department of Philosophy and Psychology. At the time of his retirement, he received the Honorary Degree of Doctor of Science from the University which he had served as Dean of Faculty for 20 years and as Head of the Department of Mathematics for 28 years. The new home of the Arts Faculty, fittingly called the Buchanan Building, will keep alive the memory of his name among future generations of undergraduates. Others of the University's early staff who retired in 1948 were, Dr. Isabel MacInnes, after 33 years of service; R. H. Clark, with 32 years of service; John Davidson, veteran botanist, with 30 years; A. E. Hennings, physicist, after 28 years; W. L. Macdonald, English scholar and man of letters, after 28 years; F. E. Buck, landscape artist, horticulturist, after 28 years. In 1949 there retired O. J. Todd, brilliant, versatile Head of the Classics Department, after 31 years at U.B.C.; M. Y. Williams, geologist, ornithologist, Head of Geology and Geography, at U.B.C. since 1921. F. G. C. Wood, appointed in 1915, founder, and for many years director of the Players' Club, resigned his Professorship in the English Department in 1950. Miss Joyce Hallamore became Head of German, succeeding Dr. Isabel MacInnes, to whom the University awarded the degree of Doctor of Laws, *Honoris Causa*. H. T. Logan, after thirteen years' absence on duties with the Fairbridge Society, returned to the University to the Headship of Classics, in succession to O. J. Todd. J. G. Andison, Acting-Head in 1949-50, became Head of the Department of French in 1951, succeeding D. O. Evans on his resignation. From Prague and from perils endured behind the Iron Curtain, came V. J. Krajina to join the Department of Botany in 1949, and later, a refugee from Hungary, M. D. F. Udvardy, was appointed Lecturer in Zoology.

In 1948 G. G. Sedgewick retired, to be succeeded as Head of the Department of English by J. R. Daniells, who came back to his Alma Mater from the University of Manitoba. Doctor Sedgewick's departure from the University seemed to many almost to mark the end of an age in U.B.C.'s history. He had been for so many years so large a part of much of what was best and greatest in the University—in the classroom, among his colleagues, in Faculty, in Senate, in speech and debate outside the University, on the lecture platform and on radio. His wit, his scholarly turn of phrase, his blithe spirit were gone from the campus. The Garnet Sedgewick Memorial Reading Room in the Library, opened in July 1951, remains as the tribute paid by his friends who were legion to a light-hearted, freedom-loving Shakespearean scholar and great-souled teacher. Also in his memory was founded the Sedgewick lectureship to bring occasionally to the University a scholar of distinction to speak on some literary subject.

Campus life was inevitably dominated during the post-war period by the veteran students as had been the case on the Fairview 'campus' after World War I. With their maturity and experience they assumed leadership in all phases of undergraduate activities. One aspect of the influence on the University of their overwhelming numbers is revealed in the Foreword of the 1946 *Totem*: "In this grotesque, unforgettable year of 1945-46, when the enormous influx of students from the forces transformed order into chaos for a few hectic weeks, there was much to add to the history of U.B.C." The "chaos" created by veterans' registration, however, was soon relieved, as we have already seen, and the "students from the forces" settled down into their new environment with gay gravity. Joy at release from the discipline of the services and enjoyment of the free atmosphere of the Campus found expression in the formation in October, 1945, of the Jokers Club, which experienced a meteoric popularity, then weakened and died a natural death three years later.

Evidence of the increased activities and scope of undergraduate interests which accompanied the veterans to the campus is seen in the doubling of the number of student clubs. There were 45 of these in 1945, and 90 in 1947. Notable among them was the U.B.C. Radio Society, officially opened on January 23, 1946, with facilities in the basement of Brock Hall. The Aero Club, whose instructors were student veterans, owned its own planes on a share basis of membership, and operated a Link Trainer as well, installed in the Armoury. The United Nations Club was formed early in this period.

Political clubs flourished, representing every shade of party opinion. Hitherto political affiliations of student groups on the campus had been discouraged by the Alma Mater Society and club status had been withheld from all such organizations. After a prolonged battle for recognition, political clubs became eligible to receive charters as approved campus societies by vote of a general meeting of the A.M.S. held on October 2, 1947. The course of student opinion in political matters followed the usual pattern, veering, as a rule, slightly to left or right of centre, always prepared to give forceful expression to its views when the occasion seemed to demand it.

The most influential club was undoubtedly U.B.C. Branch 72, of the Canadian Legion, formed on January 28, 1946. From among its members came a succession of student leaders, including five consecutive Presidents of the Alma Mater Society. This club gave the Administration invaluable help in dealing not only with veterans' affairs but also with matters which concerned general University policy. The Legion's influence and contribution were such that on March 6, 1950, it became the first club ever to receive an Honorary Activities Award, given by the Alma Mater Society for "the highest service to the campus."

Athletics : Open House

In Inter-Collegiate debating a U.B.C. team of speakers, in January 1950, won the McGoun cup for the first time since 1942 and with it the Western Canada championship. Two members of the team, Alistair Fraser and Rod Young, later went on to win the Dominion University debating finals in a competition held in Ottawa. The enlarged financial commitments of the Alma Mater Society during these years, which included raising funds to build the Memorial Gymnasium, necessitated changes in office administration and led to the appointment of a Business Manager in February, 1949.

Nowhere was the influence of the veteran students more evident than in the field of athletics. Cross-country runners won their third and fourth consecutive victories in 1945-46 and 1946-47. In basketball, as reported in *The Ubysssey*, of January 12, 1946, the Thunderbirds, on the previous day, "out-ran, out-shot and out-played" the world-famous Harlem Globe Trotters, winning the game by a score of 42-38. Seven U.B.C. players were chosen to represent Canada in the Olympic Games in 1948. When U.B.C. later moved from the Pacific Northwest Basketball Conference into the tougher competition of the Evergreen Conference, the team showed to poor advantage, losing all games but one during the 1950-51 season.

The English Rugby team met with continuous success. From 1945 to 1951 the McKechnie Cup, emblematic of the Provincial championship, left the Campus for one year only. In 1946-47 the first team went through the entire season undefeated. In competition for the World Cup against the University of California at Berkeley, which was resumed in 1947, the Thunderbird team won three out of the four series played. The Ice-Hockey team had its best season on record in 1949-50. It became the first winner of the trophy newly-donated by Chancellor Hamber, for Inter-Collegiate competition with Alberta. Later, on tour, the team won two games played against Colorado College Tigers, considered by many judges to be the best college hockey team in the United States, and defeated Denver University by a score of 14-1. The Association Football team also more than held its own in league play during these years. In 1950-51 the Thunderbirds won every game played and were untied throughout the season.

In another area of activity, viz. public relations, the students scored an outstanding success. March 5, 1949, marked what the President, in his *annual report* for the year, called "the most successful visitors' day in the history of the University." The reference is to the triennial Open House, when the University is host to her friends under arrangements for which the undergraduates are mainly responsible. It was estimated that 40,000 visitors were shown the displays, laboratories and other points of interest by the 1200 student guides on duty throughout the day.