

# U BC REPORTS

## NIGHT COLLEGE EXPLORED

The University of British Columbia's extension department is exploring the possibility of establishing an evening college for adults giving credit courses toward UBC degrees.

Dr. John Friesen, director of the extension department, says a joint faculty-extension committee is currently surveying the need for a comprehensive evening credit program at UBC.

The committee's job, he said, is to first determine the areas where the greatest need exists for credit evening courses. He said another important problem will be determining whether or not the University has the teaching resources to expand the current program, which last year enrolled 2,400 students.

Another crucial factor in the expansion of the credit program is the provision of an adequate building to accommodate this and other extension programs, Dr. Friesen said.

Dr. Friesen, who is chairing the joint committee, said John Wood, supervisor of evening and extramural courses in the extension department, would visit other universities to investigate other programs currently in operation.

This is one of four aspects of future extension development outlined in Dr. Friesen's annual report to the University Senate. The report covers the year to August 31, 1962.

Other subjects which will require serious study in the future are the responsibilities of extension in the light of new patterns of higher education in B.C., the administration of extension within UBC, and the provision of accommodation for courses.

One of the most important aspects of current extension activity, Dr. Friesen says in his report, is the development of programs of training for community leadership.

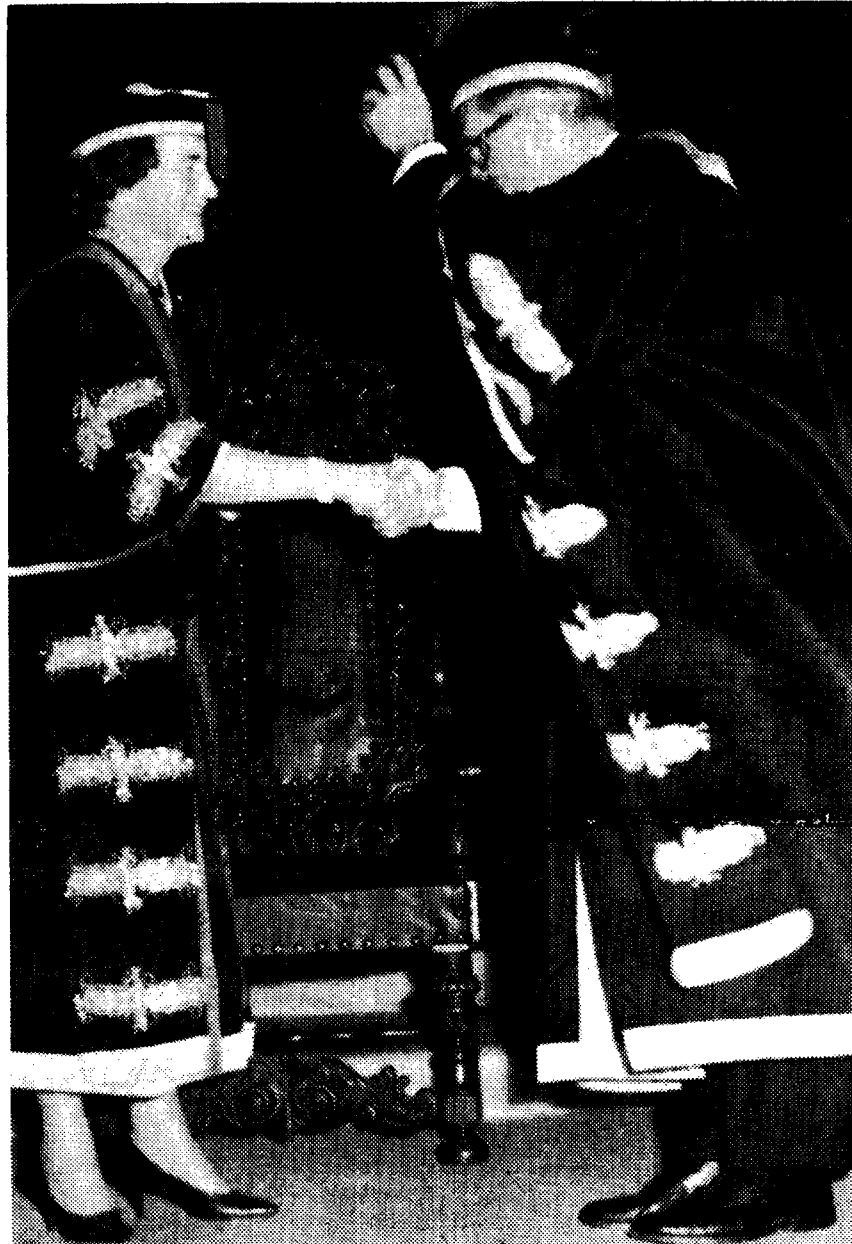
"We are attempting to develop such programs with large province-wide groups which are equipped to take the fruits of the program back to their local communities," Dr. Friesen says.

As an example of such a program he cites a joint project between UBC and the B.C. School Trustees Association entitled "Education for public responsibility." The project, he said, is designed to encourage and assist trustees through study and discussion to be well informed about their role, prerogatives and responsibilities.

A similar project is being carried out with the B.C. Council of Women. The department is also developing a series of liberal education seminars for the UBC

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UBCR



Dr. Phyllis G. Ross, C.B.E., chancellor of the University, congratulates Dr. John B. Macdonald following his installation as fourth president of UBC in the armoury on October 25. A partial text of Dr. Macdonald's inaugural speech appears on pages four and five of this issue of "U.B.C. Reports."

Alumni Association in various areas of the province.

There was a general increase in all extension department activities during the year, Dr. Friesen's report shows. In addition to the 2,400 persons registered for night credit courses at UBC or through correspondence, a total of 6,533 persons attended non-credit courses.

Nearly 70 short courses and conferences were given in more than 50 B.C. communities to 3,206 persons during the report year. The subjects covered ranged from egg grading and Indian leadership to coastal piloting and communications.

More than 80 short courses and conferences were given on the campus to 6,284 persons on subjects ranging from concrete technology to weekly newspaper publishing. Although it is difficult to arrive at a firm figure, Dr. Friesen estimates that more than 140,000 persons had contact with services offered by the extension department during the report year.

1

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## accountants establish scholarship

The General Accountants' Association has announced an annual gift of \$1500 to UBC to provide for a scholarship in graduate studies.

The award will be made annually to a graduate student entering or engaged in the general area of business administration and, particularly, in the field of accountancy.

James A. Bryant of Vancouver, national president of the General Accountants' Association, said the purpose of the award was to stimulate scholarship and research and to pay tribute to the work of Dean Earle D. MacPhee, former dean of the faculty of commerce, and Dean G. Neil Perry, the present dean, in establishing and carrying forward the program for the training of certified general accountants, which has been in effect at UBC since 1951.

The award will be made at the discretion of the dean of the faculty to a student whose academic record, ability, and other qualifications indicate a capacity for distinguished work at the graduate level.

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## CHEMIST UPSETS THEORY

A long-neglected area of chemical research has been thrown open to scientific investigation as a result of the work of Dr. Neil Bartlett, an assistant professor of chemistry at UBC.

Dr. Bartlett has overturned one of the most respected rules of chemistry which states that a group of elements known as the inert gases will not react with other elements to form compounds.

Dr. Bartlett, working with remarkably simple equipment, has shown that one of these gases, xenon, will form stable compounds. As a result, chemistry textbooks will have to be revised to take note of the discovery and the new compounds will be fertile area for chemical analysis and experiment in the future.

The discovery has been termed "a sobering lesson" by "Science," one of the world's most respected scientific journals published by the American Association for the Advancement of Science.

"For perhaps 15 years," the journal says in an editorial commenting on Dr. Bartlett's work, "at least a million scientists all over the world have been blind to a potential opportunity to make this important discovery."

Dr. Bartlett says his discovery was a logical one which stemmed from other work being carried out in the department on the combination of oxygen gas with another gas, platinum hexafluoride.

Dr. Bartlett noted that the amount of energy needed to combine oxygen and platinum hexafluoride to form a compound was the same amount theoretically needed to make xenon combine with platinum hexafluoride.

The theoretical calculations showed that the reaction should take place," Dr. Bartlett says, "but I was still surprised when it happened."

He says his fellow chemists were so incredulous about the discovery that he felt he had to get witnesses to observe the reaction to provide confirmation.

Following publication of a scientific paper earlier this year Dr. Bartlett's work was confirmed at the Argonne National Laboratory, one of the world's best-equipped scientific laboratories located at the University of Chicago.

The yellow compound produced by Dr. Bartlett is not known to have any immediate practical value. Its application to specific problems will have to await further analysis and investigation.

So far, Dr. Bartlett says, it appears that only xenon and one other inert gas, radon, are chemically reactive. Work carried out subsequently by Dr. Bartlett and Indian graduate student, N.K. Jha, has shown that xenon will combine with another compound, rhodium hexafluoride.

Dr. Bartlett, a native of England, carried out his work at UBC on grants from the National Research Council. He has been a member of the UBC faculty since 1958.

# THE PROBLEM FOR EDUCATION IN CANADA

*(During November, Dr. Phyllis G. Ross, C.B.E., Chancellor of the University, spoke at the Seminar on Canadian-American Relations at Assumption University of Windsor. What follows is a partial text of her remarks).*

My theme is "Education: the Moment, the Milieu, the Mission," and it now seems appropriate that I pose the real problem for education in Canada. Are we providing the kind and quality of education which will fit our citizens for the highly competitive world of 1962? Are we perhaps supporting a system of education more suited to the riders of the plains than the riders of the stars? Has the social conscience of Canada yet become aware of this moment in history and the forces in the world which demand that, as never before, we give all our attention and all energies to strengthen those agencies of government which are almost solely responsible for the academic, professional, scientific, and technical training of young Canadians — our schools, colleges and universities.

Change is the inevitable consequence of social growth and evolution, but the changes which have occurred in the world since 1945 are of a kind and extent unprecedented in history. Overnight civilization has been catapulted into a new era. For the most part that action can be pin-pointed in time and space; that moment in July of 1945 when an American bomber rained a new kind of fire on the Japanese mainland . . .

Then almost at once the Age of Space was superimposed, and the first bold ventures into space were marvels of scientific and technological achievement: man had at least reached out to touch those remote symbols of his yearnings — the stars. Automation, nuclear energy, machines to replace muscle power, other machines to remove much of the tedious mental work required for non-creative research, flight into space, new drugs and medications, advances in human nutrition, the increased emphasis on cradle-to-coffin security, spectacular modes of travel and communication — all these and many more benefits have accrued to North Americans in a scant two decades . . . Yet many of these advances, far from placing man on the bright benchlands of a new civilization, have set him wandering aimlessly through strange and desperate valleys.

One of the amusements in which historians sometimes engage is to prove by textual reference that each age tends to regret, either critically or nostalgically, the passing of other times when life moved at a slower pace, and human beings seemed more at ease with themselves and the world. I know, for example, that parents because of their years and maturity are not beyond condemning in children those foibles of which they themselves were guilty, and that the acid of age and the honey of youth together are often unpalatable. Of this I am aware, but I remain convinced that we who are caught up in the second scientific revolution face problems unique in history. Not the least of these is the dislocation of the individual; for in a world which may not exist tomorrow, human beings are easily drawn to satisfactions of the moment. The future repels because it is uncertain; what can be attained now in the way of comfort, ease and luxury takes on a kind of desperate urgency and distorted proportion. Things of the mind are sacrificed. Hedonism becomes the philosophy of the moment, and pleasure a way of life. Violence in the external world can cause a turning inward on the part of individuals; but more often than not they find upon critical examination of self neither peace of mind nor serenity, but rather frustration and tension.

This word "tension" runs like a leit-motif through our newspapers, journals and novels; and modern man finds himself in an irrational, unsympathetic world he never made but in which he must live. A lassitude of the spirit takes possession; the muscular quality of the old virtues begins to soften; and finally, since he is at cross-purposes with the world, the individual turns to war within himself. The consequent abdication of responsibility for anything but one's personal existence has been summarized by the British in the popular catch-phrase, the "I'm-all-right" philosophy. It becomes increasingly more difficult to encourage persons to accept positions of responsibility in civic, provincial and national life, and the days of resolute and courageous action by individuals give way to months of joint, corporate or committee action. Too many of us take shelter in the group or seek the anonymity of the mass: distributive blame, after all, is relatively easy to bear, and history impeaches first ministers, not cabinets or parliaments. This way lies apathy and conformity, those twin enemies of progress and experimentation.

The dislocation of the individual is but part of a universal and all-pervading pattern: our times are out of joint. Everywhere in the world new national groups are emerging as the underprivileged and underdeveloped nations grope towards freedom and self-determination. A ceaseless ferment and activity; a boiling of passions and emotions; a heroic struggle for enlightenment; a base yearning for power and hegemony — all of these form a gigantic mosaic of disorder in the minds of the individuals and nations. An ancient city balances precariously on a fulcrum of concrete and rubble; a Negro student is enrolled at bayonet-point in a university which finds itself in the heart of a proud and fiercely democratic country; gigantic trees of dust and debris blossom in America, in Russia, in the Sahara as nations test their new and wondrous source of power; and everywhere, in large and in small, the war for men's minds rages daily between the Soviet Union and the West.

Such is the moment, and such the milieu. The mission is of such proportion that it is better imagined than stated. Yet those of us who are directly concerned with the training of young men and women remain convinced that solutions can be found to this private and public dilemma, if Canada and the other nations concentrate as never before on education. I do not underestimate the proportion of the task; I do not pretend that we can overnight change the reckless course of the world. Yet the rational, peaceful and charitable evolution of societies begins with individuals; and we must, therefore, provide that kind of education which will fit citizens for the Age of the Atom. This may mean a radical change in our methods, aims and intentions. It will certainly mean a novel kind of sacrifice in creature comforts if we are to finance education at the level it now demands. Our primary and secondary schooling, whatever its merits or defects, is, I think, at least as good as other systems elsewhere.

But where we have failed and continue to fail is in the whole area of education beyond the high school. We are among the foremost in exploiting our natural resources; we have never made any serious attempts to explore our human resources. And the wastage is enormous — not only in time and money, but what is more important in human talent and ability. Across Canada, with few exceptions, there are not suitable training schools for many young people who want education peculiar to their talents and needs. I am referring to the thousands and thousands of students who are not suited by nature or inclination to do university work but who cannot find appropriate outlets in other areas. These are not stupid or inferior people; these are the men and women who keep the commercial and industrial world moving, who perform valuable, useful and indispensable services to society. Yet we make little or no provision for their training. We require immediately a network of vocational and technological institutions across Canada which will offer one or two years of training in the sub-professional areas: radio, television, electronics, laboratory techniques, drafting, heavy machinery, auxiliary medical services, aero-mechanics, communications, transportation, traffic control, policing, and so many others. If the machine is to serve society, then there must be hundreds of thousands of trained persons to service that machine. These are not simple tasks: they require people of high intelligence, of great manual dexterity; people who have a sense of pride and responsibility because they are discharging duties of vital importance.

Universities and colleges everywhere across this country must be nourished and fostered as never before. Much has been accomplished in the last two decades. At the end of the Second World War only two of our universities were offering graduate training towards the doctoral degree; now many times that number are training young candidates. The under-graduate population has grown at an astonishing rate as a result of natural increases and increase by heavy immigration.

At the University of British Columbia, for example, our enrolment has grown from about 2,500 in 1944 to 13,500 for the current year. By 1970-71, eight years from now, we forecast 37,000 students seeking education beyond the high school in our Province. Comparable growth is in evidence at every university and college from Halifax, Nova Scotia to Victoria, British Columbia. None of this is enough, however. At the moment we in Canada are educating only about 10% of the college-age group, 18-21. This compares with 40% in some of the large American states, for example.

But the demands for professional-trained persons both now and in the future will be ceaseless. The Age of the Atom, with all its attendant fields of specialization — nuclear physics, mathematics, chemistry, psychology, medicine, engineering, pharmacy and so many others — has an insatiable appetite for new ideas, new techniques, new systems; and these can only come from men and women who have undergone long and rigorous years of study at universities. Sometimes that period of training may be as many as 10 or 12 years beyond the high school. At the same time, we shall continue to need scholars to perpetuate our literary, historical, and philosophical traditions; for if human beings are to find pleasure of the spirit and nourishment for the mind, then they must turn their attention to the great truths that are written in poetry, in history, in philosophical treatises. For, if we foster science at the expense of the humanities, we may well gain the world but lose our own conscience.

In the past Canadians have not accepted the responsibility for educating those persons who become the great energizing forces in society — the very few who are able to push back the boundaries of the known and venture into the unexplored realms of knowledge. We have sent our most brilliant students elsewhere to be educated — to the U.S.A., to Britain, to France and Germany. We have not even provided Canadians to teach Canadians; and all our Universities are obliged to seek many of their staff members abroad. To an extent this is good: the presence of persons on a university campus with rich and varied backgrounds adds stature to any institution of higher education. Yet we will not long be able to recruit some of our ablest persons abroad, simply because of the universal demand for professors. The fostering of Canadian graduate schools is a matter of the greatest urgency, for unless we do so Canada will lose out in teaching, in research and in scholarship. It may take us many decades to recover from such tragic negligence, and the whole nation will be vastly poorer if we fail to make adequate provision not only for the present but for the future.

If we are to compete in international education — and so in all things international — we must become bold experimenters. We must re-examine teaching methods, the length of the university year, entrance standards, course-content, the compartmentalization of knowledge, the requirements for degrees, the acceleration of the truly gifted. We must be eager to receive new ideas from abroad while still maintaining our integrity as a nation. We must be ready to extend the benefits of education to our adult population through a richer and broader system of continuing education. We must encourage students from other countries, particularly the emerging countries, to come and study here; and finally we must do what we can to encourage the dissemination of knowledge at every level in lands less fortunate than our own by sending teams of specialists abroad.

All of this must be done if we are to play our appropriate role as a nation; indeed it must be done if we are to survive. The sacrifice involved will touch each citizen directly, for none of the things I have mentioned can be brought about unless as individuals and as a nation we are prepared to meet the costs.

I began this address by mentioning the ceaseless debate about education in every society and in every age. I expect that debate to continue. Indeed, it must, for the education of our young people is the gravest and most demanding problem to which we can give our attention. To remain static in a world of violent change is to become retrograde. The future is neither for the indolent nor the complacent. The mission which is ours will call for bold and energetic leadership. It will require vision, logic and planning. Above all, it will require men and women who are convinced that the search for excellence in education of our young people is our goal and that no lesser goal is worthy of us.

## new bursar named

William White, C.G.A., has been appointed bursar and treasurer of the University of British Columbia by the Board of Governors, President John B. Macdonald has announced.

Mr. White, who has been a member of the University staff since 1950, has worked closely in the past 12 years with Dean E. D. MacPhee, who will retire as dean of administrative and financial affairs on June 30, 1963.

Mr. White, who will assume his new position on July 1, 1963, will be the senior administrative officer of the University responsible for the direction of non-academic affairs, including the supervision of University finance, building and plant service, personnel services, and planning programs.

Mr. White was born in Blantyre, Scotland, educated in Scottish schools, and served in the Royal Air Force with the rank of squadron leader. After a business career in Britain, he emigrated to Canada in 1947. He is married and has three children.

President Macdonald said "Dean MacPhee's retirement will be a matter of regret to us all. Dean MacPhee first came to the University to serve as the dean of the Faculty of Commerce and Business Administration. His foresight, his vigour, and his intelligent leadership brought the Faculty to its present state of mature development, providing for the training of business leaders throughout the country.

"In November, 1950, he became honorary bursar, and in January, 1961, dean of administrative and financial affairs. In these offices he contributed greatly to the financial direction of the University. He showed courage, energy, and purpose and met every challenge presented to him. His loyalty to the University, his experience and his devotion to ethical principle made him a leader of unusual distinction. I am personally grateful that he agreed to remain with the University during the first year of my Presidency. His assistance is invaluable.

"I am happy to find on Dean MacPhee's own staff a senior officer well capable of carrying on his important work. Mr. White is a man on whose professional judgment and competence we can rely. His previous experience and intimate knowledge of the University fit him well for his new position. I am sure Mr. White's appointment will be welcomed by the whole University family."

## UBC opens beef cattle lab

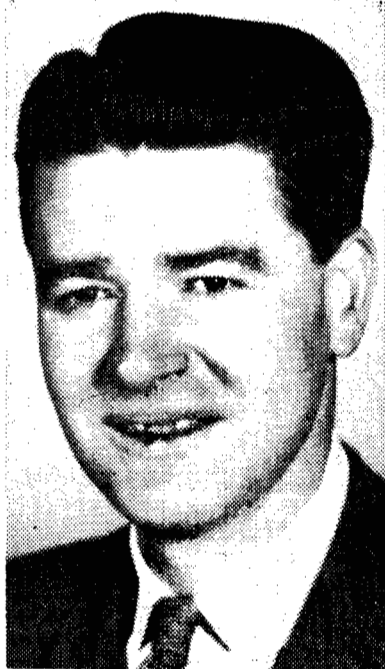
The University of British Columbia now has the most up to date facilities in the west for beef cattle research as a result of the opening of a \$28,000 beef cattle laboratory.

The laboratory, officially opened last May, will be used for student projects and long range research and development by UBC faculty members.

A total of 130 beef cattle are presently housed in the laboratory which is engaged in intensive research on nutrition. A feature of the opening ceremony was a report on new high energy feeds for beef cattle.

Largest donor toward construction costs of the laboratory was Canada Packers Ltd., who gave \$10,000. Balance was given by UBC, the Victor Spencer beef cattle research fund, and the B.C. Cattlemen's Association fund.

Dean Blythe Eagles, head of UBC's faculty of agriculture, said the new building was the first of a group of ancillary laboratory facilities for the faculty which will be consolidated or constructed at the south end of the UBC campus.



WILLIAM WHITE  
... named bursar



DEAN E. D. MacPHEE  
... retires June 30

## university takes over courses

UBC and the Institute of Chartered Accountants of B.C. have signed an agreement placing all responsibility for the academic training of articled chartered accountant students in the hands of UBC's faculty of commerce.

Under the new agreement the University will develop a new course curriculum for articled students, who, in addition to practical in-service training, must complete five years of academic work through UBC night classes or correspondence for admission to the Institute.

The Institute will continue to advise on certain aspects of the program and will continue to be responsible for the practical training and examination of CA students.

Until the new agreement was signed UBC provided tuition services only for the first three years of the compulsory five-year course. The Institution will continue to conduct its own preliminary, one-year training course for students entering the program with junior matriculation.

More than 500 students are this year involved in the program which will be operated by the diploma division of the commerce faculty.

Mr. W. G. Holmes, of Victoria, president of the Institute of Chartered Accountants of B.C., said the reorganization of the program had been necessitated by the extensive post-war industrial and business growth in B.C. which has made great demands for the services of chartered accountants.

"This tremendous provincial expansion," he said, "no longer allows members of the institute to volunteer their time freely to teaching students."

## planning office set up

An office of academic planning has been established at UBC, President John B. Macdonald has announced.

The president said Dr. S. A. Jennings, of UBC's mathematics department, had agreed to serve as director of the office for the coming academic year.

The office will be responsible for the preparation of statistical material, forecasts of enrolment, building needs and staffing requirements, the president said.

Dr. Macdonald also announced that the board of governors had approved the position of architect-planner to the University. No appointment has yet been made to the post.

The architect-planner will be responsible, through the president and dean of administrative and financial affairs, to the board of governors for planning physical facilities on the campus and the preparation of a master plan for the future development of the campus.

The board of governors has also appointed the Vancouver firm of Norman D. Lee and Associates as consultants to the University on traffic and parking.

The firm will act in cooperation with the director of academic planning, the architect-planner, and Sir Ouvry-Roberts, who has been appointed director of traffic, in the preparation of a long-term policy on traffic and parking.

## theatre students selected

UBC's extension department has begun province-wide interviews and auditions to select students for its 1963 summer school of theatre.

The 1963 school will offer instruction at a higher level to assist talented students to meet the more rigorous standards demanded in community and professional theatre, Dr. J. K. Friesen, director of the extension department, said.

The interviews and auditions will be carried out by Sydney Risk, field drama supervisor for the extension department, and Sam Payne, the well-known actor and adjudicator.

In the majority of cases the auditions and interviews will be scheduled to coincide with drama workshops conducted by the field supervisor in various regions, where headquarters will be established for this purpose.

When applicants are unable to travel to the headquarters, the supervisor will endeavour to visit other communities within the region. Under special circumstances letters of recommendation may be considered.

"The introduction of this new program," said Dr. Friesen, "is an additional service offered by the extension department to B.C. communities." He said that field work in drama continues on a slightly increased basis this coming year with one full-time and one part-time instructor assisting community drama groups.

## dental school in '64

The doors of the faculty of dentistry at UBC will swing open to admit the first class of students in September, 1964, the newly appointed dean of the faculty said on his arrival at UBC.

Dean S. Wah Leung, who comes to UBC from the University of California at Los Angeles, where he was a professor of oral biology, has begun the long and difficult task of planning a building and curriculum for the faculty, and searching the world for 50 to 60 top flight faculty members.

The number of students entering the faculty in 1964 will be small, Dr. Leung said. The total number in the first class will probably be 12 persons but later first year classes will probably contain a maximum of 40 students, he said.

When in full operation the faculty will have a total enrolment in all four years of approximately 160 undergraduate dental students.

Will a graduating class of about 40 students per year be enough to meet the shortage of dentists in British Columbia?

Dr. Leung replies that the enrolment of the school is based on a careful survey of the needs of the province in terms of the proportion of dentists to population.

At present, he says, the proportion of population to dentists is about 2400 to one. A much more desirable ratio is 1800 to one.

The faculty will eventually occupy a building, which will probably cost more than two million dollars, in the new health sciences center which UBC is planning opposite the War Memorial gymnasium on University boulevard.

The development of a centre which brings together all persons working in the health sciences field is one of the most exciting developments in UBC's future, Dr. Leung feels.

The health centre will include buildings for the preclinical years of medicine, a University research and teaching hospital, a faculty of pharmacy building, facilities for the advanced training of nurses, and the faculty of dentistry building.

Already completed on the site are three pre-clinical buildings for medicine and a wing of the nearby Wesbrook building houses the pharmacy faculty. Plans are now being prepared for the University hospital.

An eventual development in the faculty of dentistry, says Dr. Leung, is a program for training dental hygienists. This program may get underway two years after the dental school has been in operation.

There is a great need for dental hygienists, Dr. Leung says, because the practice of dentistry is altering rapidly.

"Because people are living longer and there are more effective ways of controlling decay," he says, "dentists are finding that their practice is changing from one solely devoted to dental repair to other problems such as diseases of the jaw and gums."

Dentists, he adds, need highly trained auxiliaries who can relieve them of much of the routine business of a dental office in order that they may concentrate on expanding the kinds of services which can be offered to patients.

Research, Dr. Leung says, will play a large role in the operation of the new faculty. Dr. Leung himself hopes it will be possible to carry on with his own research of trying to determine the cause of tartar, a calcium deposit which precipitates out of the saliva, and is one of the chief causes of diseases of the gums.

# EXCELLENCE AND RESPONSIBILITY

(What follows is a partial text of the inaugural address of Dr. John B. Macdonald, who was installed as president of the University on October 25.)

... I would like to talk about important humanitarian reasons why all of us engaged in universities should be prepared to dedicate ourselves to the tasks and responsibilities of higher education. It will be clear to every thoughtful person that the reasons apply no less to the President than to the teachers and professors who have the privilege of devoting more of their time to scholarship.

Let me begin by quoting from Bronowski talking about creativeness in science. "When Ella Wheeler Wilcox died, having published poems from the age of seven, the Times of London wrote that she was 'the most popular poet of either sex and of any age read by thousands who never open Shakespeare'. A scientist who is emotionally immature is like a poet who is intellectually backward: both produce work which appeals to others like them, but which is second rate."

I wish to talk about two things. The first is embodied in the word "excellence" and it is illustrated strikingly by the quotation from Bronowski. The second is "responsibility" and I will come to that presently.

"Excellence" is a word with curiously modern overtones though it is a word of great antiquity. We are intrigued by the word. We are excited by it, and we know somehow it is a word with great power—both intellectually and emotionally, yet we struggle with its meaning and its implications. The problem is embodied in Bronowski's observations. Do we accept as meritorious that which is inferior by the highest standards because it is appreciated by thousands? Is it excellent because it has "the common touch"? The temptation is to discard the question lightly and to say "the common touch" has nothing to do with excellence. Yet, in fact, it has a great deal to do with it. For seventy generations in the West we have been reading books. From time to time a great writer has arisen, has been treasured, and has survived. He has survived through his "common touch," his capacity to speak in meaningful terms and in depth to generation after generation. If someone says he finds such writers nauseating, as Spencer did of Homer, and Darwin did of Shakespeare, we feel the remark says much about the speaker, but little about Homer or Shakespeare.

What is excellence? It is many things, but it is not second rate poetry. It is Shakespeare; it is Einstein; it is Schweitzer; it is Frank Lloyd Wright; it is Mozart; it is Rembrandt. It is also Mickey Mantle, Bob Hope and Billy Graham. These latter choices may offend you, depending how you feel about baseball, comedians or evangelists, but in each instance the man named is excellent in his field, regardless of what we think of the field itself. Excellence can be found in all kinds of endeavor. In addition, society, partly consciously and partly unconsciously, rates different kinds of endeavor on a scale of worthiness or social value and confuses this with excellence. We place activities such as creative writing, theoretical physics, great painting, and the practice of medicine high on the scale. We place others low on the scale—basket weaving, clerical work, paper hanging, truck driving — even though these activities are useful or essential to our society.

One of the reasons we make such judgments is because the great leaders who advance men's knowledge and achievement come from the ranks of those high on the scale. To this extent such judgments are justified. We make our mistakes in equating excellence with our judgments of the inherent worth of a vocation, instead of using the word to describe superb performance, whatever the field.

This confusion is at the heart of a manifest dilemma facing higher education.

We are all dedicated to excellence, at least in principle, but also are supporters of equality and hence we are made uncomfortable and turn silent over the idea that being a truck driver is less meritorious than being an engineer. It is the democratic dream that all men should be equal. Yet we insist with comparable force that we are not equal, that some are better than others and we are proud of our objective that the best man should win . . .



Dr. John B. Macdonald, fourth president of the University of British Columbia, is shown delivering his inaugural address.

Equality and competition share importantly in our heritage and we have difficulty in reconciling the apparent conflict in demanding both. It appears in our universities and colleges under the guise of opposing philosophies of education—education for the elite, high standards and excellence of performance on the one hand, versus education of the masses, college education for all, low standards and a record of mediocrity, on the other. The argument assumes that quantity and quality are incompatible. It is given force by observing that excellent institutions like Harvard or California Institute of Technology accept only perhaps one percent of the cream of high school graduates. At the opposite extreme it would be possible to design a college to accept virtually all college age students who applied. Such a college would have to operate at approximately the intellectual level of a TV western.

This kind of mass processing would be the natural outcome of succumbing to our desire for equality of opportunity and translating it to the motto "everyone should go to college."

Unfortunately this is precisely what has happened in some communities and there can be no doubt that colleges which will accept all comers represent grotesque caricatures of what higher education ought to mean.

The problem remains. Is it possible to have a university responsible for higher education and serving the needs in a community as large as British Columbia and still have a university dedicated to excellence?

The question can be answered only by defining more precisely some of society's pertinent goals. It is true that we seek equality of opportunity but we would be absurd indeed to claim that a man whose native intellectual endowment suited him for peeling potatoes should follow the same educational course as a man whose gifts made him a potential candidate for Minister of External Affairs. In short, college and university is one kind of educational road for those whose abilities fit them for that kind of education. It should not be considered the only road to success, the highway to happiness, or a prerequisite for the kind of respect which should be available to every man. As James Conant has said, what we seek is not only equality of opportunity but equality of respect. Respect should be available to every man on the basis of demonstrated determination to achieve excellence in whatever vocation and tasks his abilities permit him to tackle. These are realistic goals within the reach of everyone, and unless we recognize them and reward them with the respect of our society, then we will fail. In short, it is one thing to honor a high calling because it is a high calling. It is another thing to respect excellence in performance whatever the calling.

Society has many servants and it behooves us to sort them effectively on the basis of their ability. Our public education system provides the environment to do the sorting. The mentally retarded child can be identified early and directed along a path suitable to his severe limitations. Others have talents which fit them for complex vocations though they may be unsuited to a college education. Others can and should become the intellectual leaders for the community—in government, the professions, teaching, business, commerce and the arts. For them college experience should open many avenues to permit them to aspire to their potential. Whatever each man in the community does, provided he is contributing to society and provided he is striving to reach his potential, he can be measured in terms of excellence. As John Gardner has said: "An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity, will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water."

If we accept this philosophy, it becomes obvious that within higher education we need different kinds of institutions with different purposes. We need a Harvard and an Oxford, a Berkeley and a Massachusetts Institute of Technology. We need excellent small liberal arts colleges and we need big state universities. Each must define its purposes. Each should fulfill a worthwhile need in our society. None should exploit an unreasoned demand for college for everyone. None should worship a false god.

The University of British Columbia must have clearly defined and expressed goals. It must interpret these goals to the people of the Province and to the nation. Yes, we want excellence. We will strive for it. We will demand it of staff and students. Yes, too, we recognize our responsibility for higher education in the Province. We will do what is wise and practical to meet the needs in terms of numbers of students and we will promote and encourage and help to develop other institutions of higher learning, not in our own image, but to meet the demands and challenges of a growing and adventurous community.

Who belongs in this University? Should we be like some Ivy League Schools and accept only the top one percent of the high school graduates? Should we be like some community colleges and accept 80%, practically anyone who is breathing? Either solution would be absurd for U.B.C. and would doom to failure one or other of our twin goals of aspiring to excellence and meeting our responsibilities to this Province.

I believe we do not yet know the ultimate answer to the question who can profit from higher education. Even elementary education for everyone is a recent innovation. It was not until the end of the Nineteenth Century that this objective became a reality. During the early years of this century more and more young people received a secondary school education. The experts shook their heads and predicted that any society permitting so many people to have secondary education was following a road to economic, political and social ruin. After World War I the numbers in higher education began to rise—alarming in the estimate of many prophets. The numbers have continued to rise and it is predicted that by 1975 half the young people age 18 to 22 in the United States will be receiving higher education. What is the limit? We do not yet have enough facts about the capacity to learn, the ultimate techniques of teaching, or the distribution of intelligence to make long-range predictions.

Meanwhile, I suggest that about twenty percent of our high school students can profit by the kind of higher education which can be offered in a university or college dedicated to excellence. I suggest this figure on the basis of conclusions drawn from James Conant's studies of high schools.

If this Province provides opportunities in higher education leading to a degree for twenty percent of British Columbia's college age population by 1970, we will require places for about 30,000 students. Thus, we must provide for increasing enrollments and at the same time strive for excellence. This is not the place for discussing the mechanics of how the dual goal can be achieved, but it is very certain that it cannot be achieved when the University is selecting for admission a student body, 30 per cent of whom will fail in the first year. Such admission practices demoralize the failing students, disappoint the staff, inevitably lower standards, place unrealistic goals before the whole community, place a social premium on a college education and depreciate the value of excellence in the many alternate roads open to our young people.

The task for this University and this Province is to make the opportunities of higher education available to all those who can profit by them, to choose wisely those who belong here and those who don't. For each one who is admitted our task is to challenge, stimulate and excite the intellect, to expect and demand the best that is in him, whether he belongs in the tenth of one percent having the greatest intellectual endowment or the bottom of the class. Those who belong in the University can seek their own objectives and they can all aspire to excellence in whatever is within their reach.

Each should emerge from the University wiser and better prepared to face a world of tomorrow whose problems are not yet known. We must create an environment which stimulates the strongest and the ablest to meet the responsibilities of leadership which they must shoulder, whatever their vocation as one of the prizes which they should gladly pay for freedom. This is our goal for this University—the pursuit of excellence.

A second, and no lesser, objective for the University must be to help modern man to come to grips with the agonizing responsibilities which history has placed on his doorstep. These responsibilities are legion, but among them three stand out in such bold relief that they overshadow all others.

The first, of course, is the responsibility to prevent the annihilation of life through nuclear war. How are we faring? Never in history has such a staggering effort been put forth toward acquiring the potential for destruction. The United States, as the principal Western power, ploughs 50 billion dollars a year directly into the war economy. The bombs on Hiroshima were 20 kilotons. Bombs of 20 megatons and larger, one thousand times as powerful, are now standard equipment. Each side is said to possess a minimum of 30,000 megatons of weapons—about 10 times enough for total destruction of the enemy. The Hiroshima bomb had a range of heat, blast and initial radiation effects of about 1 mile. The modern 20 megaton monster has a heat effect sufficient to cause conflagration throughout an area 50 miles in diameter. The heat range exceeds the range of intense fallout and, in fact, would encompass the whole metropolitan area of major cities. Meanwhile, and incredibly, we have debated the use of private fall-out shelters in one's backyard.

If we continue along our present road the outcome can be predicted with mathematical certainty. We know it is easy to make plutonium, we know that a dozen or more states will have atomic or nuclear weapons in another six years. We know, as Snow has emphasized, that within at the most 10 years some of the bombs will be used; "We know with the certainty of statistical truth that if enough of these weapons are made, by enough different states, some of them are going to blow up, through accident, folly or madness."

The only alternative is to get rid of nuclear armaments and to begin at the beginning. The beginning would be agreement on stopping nuclear tests. Such agreement is not without risks. Not to agree, as shown by resumption of testing a year ago, is likewise without risk. This issue is the greatest acute crisis of man dealing with man in the history of this world.

A second issue, interlocked with the first, and just as urgent, is the problem of the poor, represented by most of the world's population. Over 100 countries, by any standard, must be included in the unimaginative and inadequate term "underdeveloped." In the few rich countries we live longer, live richer and work less. Millions in Asia, Africa and Latin America are living on 20 cents a day, starving, diseased, illiterate, existing hand to mouth, and crashing abruptly and prematurely into unadorned oblivion. But they know one thing and that is that we are not living the same way. And enough of them know that they don't have to wait centuries in order to attain our standards. The methods are at hand.

We possess all the scientific facts needed to raise the standards for the other half of the world to our level. What is really needed is recognition of the scientific, technological and political facts and the determination to do what can be done.

It will require capital, trained men and education on an enormous and unprecedented scale. No country, East or West, has demonstrated a really serious determination to come to grips with this problem. The cost is high, but so are the stakes. Nothing is more threatening to peace than the present widening chasm between the rich and the poor.

The third major responsibility is to face the facts of the population explosion. Somehow, though the story has been widely publicized, the dimensions of the problem have not registered. The population of this world is increasing at the fantastic rate of 500 million people in this decade, one million people every week, the population of Canada every four months. The present population is 2.7 billion. It will double in the next 40 years. During the next five years it will increase by a number greater than the total world population at the beginning of the Christian era.

The problem is interlocked with the problem of poverty and underdevelopment in a curious reciprocal way. The main reason for the rapid population growth relates to scientific achievements aimed at alleviating poverty, preventing disease and prolonging life. As a result the death rate has gone down; life span has increased; birth rate has remained constant.

It has been estimated that agricultural productivity can be increased over long periods by about two percent per year. The world population is increasing at the same rate. Thus, if we run as fast as we now can, we can just stand still. We have turned our back on any serious effort to cope with overpopulation for religious reasons, for what we claim to be moral reasons, for cultural reasons, for reasons of tradition . . .

The fact is that any morality which places weight on the well being, significance and dignity of each individual human being, by definition is a morality which will accept the responsibility of coping with the population explosion. There are two ways to do it — the first is to kill; the second is to limit reproduction.

No one could argue that we are doing nothing in these three major areas of crisis. Dedicated men and women are devoting their lives to the problems. Responsible leaders are making the best judgments of which they are capable in an effort to prevent war. Help for underdeveloped countries is available on an unprecedented scale. Food donations are being made to 60 million people in 90 countries. Since 1953, nine billion pounds of U.S. surplus food have been donated and distributed overseas. The death rate in Ceylon has been cut in half in seven years. It took 70 years in Britain to accomplish the same thing. Sixty-two countries are fully engaged in eradicating malaria and 280 million living in areas previously malarious are now free from this threat. W. H. O. Fellows from 112 countries have obtained scientific and technological training in the more advanced countries. Hundreds of examples of progress could be cited, but it all adds up to too little and nearly too late.

Why in the face of such desperate crises is man not marshaling the tremendous forces at his disposal to meet the challenges? I believe that paradoxically it is the very scientific progress that could be his salvation which is paralyzing him. Man's myths are tumbling down and as they fall, they disappear as comfortable reference points by which to guide himself.

He can no longer look at the stars, be awed by the immensity of his universe, but still feel that he is at the center of it all, unique and alone. He is now knows that the number of solar systems is perhaps 100 billion billion. He cannot escape the very great probability that intelligent life exists on thousands or millions of other planets; nor can he forget that the chances are that more advanced forms of life than his have come and gone somewhere in the universe.

We have now learned a great deal about the probable mechanisms by which life was generated on this planet some two thousand million years ago. We have made enormous strides in understanding the basic chemistry involved in heredity and the organization of living protoplasm.

We have probed the nature of matter, unlocked the power of the atom, we have created the miracle of instant worldwide communications; built giant computers capable of solving problems previously beyond our physical capacity; we have synthesized a vast array of new chemicals for building, for industry, for fuel, for medicine, for food, for war, for peace, for the control of our minds.

We have begun to look objectively at human behaviour through psychiatry, psychology, sociology, and cultural anthropology, and we are learning the remarkable extent to which man is a product of his own culture; we fear what we find and we resist using our knowledge to move ahead as quickly as the day demands.

Responsibility is the key word. It is probably the most important word of modern ethics. We all admire responsibility but we have difficulty knowing where it begins and where it ends. We reward enthusiastically a social sense of responsibility but we are uneasy lest it represent merely a conditioned pressure to conformity which we deplore. We admire the sense of responsibility of the rugged individualist who can go his own way against the current in response to individual conscience. But again, we wonder uncomfortably how much his conscience and courage are a product of social conditioning. In spite of the unprecedented opportunity to control his environment man has never been more lost, never less sure of the difference between right and wrong, never more uncertain about the meaning of life, never more frustrated in recognizing and meeting his responsibilities.

The road along which he must travel if he is to rise to the occasion is the same road that he has been travelling and which has brought him to his present predicament. Knowledge is the key to responsibility. Knowledge for modern man must bridge Sir Charles Snow's two cultures.

He must know that "we possess every scientific fact we need to transform the physical life of half the world, and transform it within the span of people now living." He must know too that the scientific revolution has brought with it new problems and challenges — how to utilize human leisure, the problems of increasing age of the population, the problem of work motivation in industrial civilization where the individual is widely separated from the product of his work; the problem of deterioration of the genetic endowment in advanced countries through elimination of natural selection; the problems of growing urbanization.

He must know too that both scientifically and humanistically the greatest problems are within himself. He must learn through study in the humanities of his own errors and foibles, his struggles to cope with his own passion, pride and prejudice, his successes and his failures, his groping and his flashes of insight. He must learn to recognize that which is excellent in literature, art, music, history, economics and philosophy. He must recognize that his deepest problems are timeless and that they were struggled with nobly by Plato, Aristotle, Augustine and Aquinas.

He must recognize finally that knowledge itself gives him merely the ingredients of a solution. No one can offer him the solution. He must synthesize it for himself. It is to be found in an acceptance of himself. It is to be found by seeking excellence in human relations, by seeking excellence as an individual. It is to be found through respect for man.

The solution is wisdom and wisdom is the capacity to recognize and strive for excellence in human relations. Man's future depends on his capacity to understand the world around him and to know and respect himself. The goal of higher education is to challenge the mind, the heart and the spirit of man and to create wisdom out of knowledge.

Two hundred years ago Edward Young said, "The clouds may drop down titles and estates. Wealth may seek us, but wisdom must be sought."

# child centre unique

A unique study centre for teacher-training, observation and research in child behaviour and development has begun its second year of operation at UBC.

Created by UBC's Child Study Council, which welds together all campus activities dealing with the study of children, the centre began operation in 1961 on a grant of \$21,000 from the Junior League of Vancouver.

More than 700 students in education, psychology, medicine, nursing, social work and credit extension courses made use of the centre in the past year for observation and research.

Prof. E. S. W. Belyea, of UBC's psychology department, and a member of the centre's board of management, says a child study centre is essential if a university expects to offer work in the field of child development. "Without it," he says, "it's like trying to teach chemistry without laboratory facilities."

While students from a variety of disciplines use the centre there is an underlying purpose for all of them in observing the 73 three, four and five-year-olds who are enrolled. "All the students are learning the patterns of behaviour of the developing child," says Dean Neville Scarfe, head of UBC's college of education and chairman of the Centre's board of management.

Each group of students is thoroughly briefed before attending observation periods at the centre. Following the observation period students write a report and take part in discussion of the child's reaction to the setting and the activity. he is engaged in.

"What emerges," says Dean Scarfe, "are the patterns of behaviour of the normal child. And it is these behaviour patterns which the student will learn to recognize when they enter professional life as teachers, doctors, social workers and nurses."

An added advantage, says Dean Scarfe, is the fact that the students will be able to observe the children as they develop since it is expected that all the children will attend the centre from age three to five.

Dr. John Read, head of UBC's child health program in the faculty of medicine, adds that observation is itself an art, and while some people are born with a gift for it, others have to learn it. "The centre," he says, "provides an ideal place for medical students to learn the techniques they will use in professional practice."

The centre is also an integral part of academic programs in the college of education and the extension department. It is the only centre in Canada which is part of the program of training of pre-school teachers who are working toward a university degree and who must meet requirements for a professional teaching certificate issued by the B.C. department of education.

The centre also provides the extension department with a facility for its training program for teachers in private and cooperative kindergartens. B.C. is the only province in Canada which requires the operators of such kindergartens to have basic training before being licensed by the government.

Another function of the centre, which is staffed by a total of five persons, is to provide "a stimulating and satisfying educational experience for the children enrolled," says Mrs. Charles Borden, the centre's director.

The resources of the centre are much wider and more varied than those of a normal kindergarten, says Mrs. Borden, because the centre serves as a demonstration and research centre for a number of University departments and has

the teaching resources of a number of University specialists.

"We help the child understand the abstract by providing concrete illustrations," says Mrs. Borden, and as an example she cites the program for teaching the children about the food they eat.

"The child gets an understanding of how food grows through a garden project supervised by one of the parents, who provide much of the help at the centre," Mrs. Borden explains.

"We follow this up with field trips to wholesale food distributors in Vancouver and finally the child learns how bread is baked and food is cooked on kitchen equipment in the centre," she says.

The special skills of parents are also utilized on field trips and special projects. The centre, as part of its curriculum, stresses natural science, crafts and music. "Above all, we are trying to make the children aware of the physical and social world in which they live," says Mrs. Borden.

Assisting Mrs. Borden at the centre are members of the Junior League who contribute their time voluntarily for clerical work, book and equipment maintenance and, occasionally, substitute teaching.

Presently under consideration by the Child Study Council is the establishment of a second centre for the observation of handicapped children.

## Alsbury succeeds Roberts

The University of British Columbia has announced that Aubrey F. Roberts has resigned from his position as director of the UBC Development Fund in order to enter consulting service in the field of business management and public relations.

Mr. Roberts joined the University in 1957 to take charge of the Development Fund campaign which raised more than \$10,000,000 for the University's building program.

The University also announced that the Board of Governors has appointed Mr. Thomas Alsbury to a new University position as executive director of the University development Council. Mr. Alsbury will take up his duties at UBC on January 1, 1963.

As the executive director of the Development Council, Mr. Alsbury will have complete responsibility for undertaking the educational work of informing the public of the plans and developments of the University, and also the responsibility for the organizing of fund raising and the collection of funds.

Mr. Alsbury, currently mayor of Vancouver, is a graduate of the University of British Columbia, and has had a distinguished career as teacher, principal, and educator in Vancouver's secondary schools.

In making this announcement, President John B. Macdonald said: "One of the important tasks in the development of higher education is to take the story of the University to the people of this province and country. Mr. Alsbury, as an educator and an eloquent and respected servant of the public, will interpret the plans, the hopes, the expectations and the requirements of the University in a way which will bring an increasing measure of public support.

"The rapidly changing demands of higher education are of significance to every member of society. In Mr. Alsbury," said President Macdonald, "the University has found a man well qualified to meet this responsibility."

## Senate honors three

Three members of the University of British Columbia faculty who retired earlier this year have been honoured by the UBC Senate.

The title of professor emeritus has been conferred by the Senate on Professor Hunter C. Lewis, a member of the department of English for 33 years; Prof. Alexander Hrennikoff, who taught in the department of civil engineering for 29 years, and Prof. J. Gordon Andison, retired head of the department of Romance studies.

Prof. Lewis received his bachelor and master of arts degrees from UBC in 1923 and 1928 respectively. He joined the department of English in 1929 as an assistant professor. Prof. Lewis was promoted to the rank of associate professor in 1945, and was named a full professor in 1950. He was well known to generations of students for his course in contemporary English literature.

In addition to his teaching duties, Prof. Lewis was well known for his activities in the world of art. He is a former president of the Federation of Canadian Artists and served on various committees of the Vancouver Art Gallery for many years.

He was one of the organizers of the Vancouver branch of the Civil Liberties Union and served as president of the organization. He is also a former chairman of the Committee on Indian Citizenship.

Prof. Lewis was a leader in the move to revive and recognize the importance of native Indian art. He carried out an extensive survey of totemic carvings in B.C. and was one of the leaders in the creation of Totem Park at UBC. In 1953 he received a Queen's Coronation Medal "for tireless efforts on behalf of art and humanity."

Prof. Hrennikoff was born in Russia and attended the Moscow Institute of Communication Engineering where he was awarded the degree of engineer in communications in 1920.

Prof. Hrennikoff enrolled at UBC in 1927 and was awarded the degrees of bachelor and master of applied science in civil engineering in 1930 and 1933 respectively. In 1940, following further graduate work at Massachusetts Institute of Technology, he was awarded the degree of doctor of science in civil engineering.

Dr. Hrennikoff began his career of teaching and research at UBC in 1933. He acted as a consultant on numerous engineering projects in B.C. including the present Granville Street bridge.

For his research work in the fields of applied mechanics and structural engineering the American Society of Civil Engineers awarded him the Leon S. Moisseiff Award for 1950 and the Arthur Wellington prize for 1951. Both awards were made for research papers published by the Society.

Dr. Andison came to UBC in 1949 as a visiting professor and acting head of the department of French. The following year he was named head of the departments of French and Spanish. In 1955, when the department of Romance studies was created at UBC, Dr. Andison was named its first head.

Dr. Andison is a graduate of the University of Manitoba where he received the bachelor of arts degree, and Columbia University, which awarded him the degree of master of arts and doctor of philosophy. He taught briefly at Columbia before joining the faculty of University College at the University of Toronto in 1921. He was a member of the University College staff until coming to UBC.

## publisher aids university

President John B. Macdonald has announced the appointment of Arnold Edinborough, former editor of the Canadian magazine Saturday Night, as an associate professor in the department of English at UBC.

The appointment of Mr. Edinborough has been made possible by a grant of \$15,000 a year from Mr. Donald Cromie, publisher of the Vancouver newspaper, The Sun.

Dean S. N. F. Chant, head of UBC's faculty of arts and science, said Mr. Edinborough would give a number of courses on the theory and history of the press, how news is acquired, and the procedures by which news reaches the general public.

Dean Chant emphasized that Mr. Edinborough would not give courses of professional instruction for journalists.

"The intention of the courses," Dean Chant said, "is to provide the student with the basis for making an intelligent appraisal and interpretation of the news, particularly in the field of significant national and international events."

Mr. Edinborough, the dean said, will also give courses in Elizabethan drama, which is his own particular field of academic interest.

The courses on the press will be open to any student in the faculty of arts and science and to students in other faculties where their programs allow for electives.

Mr. Edinborough was born in England and educated at Cambridge University in England where he received his bachelor of arts degree in 1947 and his master of arts degree in 1949. From 1947 to 1954 he was a professor of English at Queen's University, Kingston, Ontario, and at the Royal Military College in Kingston from 1948 to 1952 and 1957-58.

In 1952 and 1953, while on a travelling fellowship at Cambridge University to carry out research in Tudor drama, Mr. Edinborough served as director of studies in English at St. Catherines College.

In 1954 Mr. Edinborough was appointed editor of the Kingston Whig-Standard. He held the post until 1958 when he became editor of the magazine Saturday Night. He was named publisher of the magazine in 1961 and held the post until the following year.

He was also president of Fensgate Publishing Company, which publishes Saturday Night, in 1961-62 and president of the Magazine Publishers Association in the same period.

## another record enrolment

Enrolment for UBC's 1962-63 winter session increased just over five per cent to a total of 13,727 students, according to figures released by registrar J. E. A. Parnall.

The faculty of arts and science has registered 7493 students or 54.5 per cent of the total University enrolment. Enrolment in the faculty shows an increase in all years except the first, where the number of students is down from 2727 last year to 2522 for the current session.

Enrolment in other faculties for the current session is as follows with last year's figures in brackets: applied science—1253 (1222); agriculture—191 (204); commerce—615 (617); education—2458 (2376); forestry—189 (181); law—230 (225); pharmacy—147 (139); graduate studies—720 (679); medicine—245 (229); unclassified—186 (124).

The student body is made up of 9457 men—(68.9 per cent), and 4270 women—(31.1 per cent).

Enrolment at Victoria College increased by 104 students to a total of 1845. The faculty of arts and science enrolment increased from 1086 students last year to 1252 in the current year.

Enrolment in other Victoria College faculties is as follows with last year's figures in brackets: commerce—22 (19); education—571 (636).



Demonstrating new gun for planting bulletted seedlings is John Walters, research forester at UBC's Haney research forest, and inventor of the device.

## 'gun' aids foresters

A new tree-planting technique which could antiquate traditional methods of reforestation has been developed by a research forester at the University of British Columbia.

The new device is the brain child of John Walters, research forester at UBC's 10,000-acre research forest 36 miles east of the campus near Haney in the lower Fraser Valley.

Walters has spent 12 years developing a tree-planting gun and bullet which will speed up the planting of seedlings to as many as 1500 per hour. At present, using manual methods, it is possible to plant 750 to 1000 seedlings per day.

The gun, which looks like a compressed air jack hammer, stands 42 inches in height and fires plastic bullets, in which the seedlings have been grown from seed, into the ground.

The plastic bullets, two and a half inches long and seven-eighths of an inch in diameter, are loaded into the gun at right angles to a vertical shaft which is held by the operator.

To press the bullet into the ground the operator simply exerts pressure on the vertical shaft. When the shaft retracts another bullet automatically falls into the firing muzzle of the gun and is ready for planting.

The plastic bullets are weakened by a groove which runs the length of the bullet. As the seedling grows and its roots expand the bullet is shattered.

Mr. Walters says the idea for the gun came to him 12 years ago when he was a student at UBC where he received his bachelor and masters degrees in forestry. He produced the first working model two years ago and it has gone through four modifications since then.

In addition to reducing the physical labour and time involved in planting, the method could be a boon to companies reforesting logged off land in B.C. because of its flexibility.

B.C. presents special problems in reforestation, Mr. Walters says, because of steep terrain and deep accumulations of slash. The gun overcomes these problems because it is light and planting can easily be accomplished through light slash.

The gun itself, however, is the least important part of the project, Mr. Walters claims. He says the most important development is the technique of pot planting for seedlings.

The bullet in this case is the pot in which the tree is started before planting. The technique of pot planting is not new but it has proved extremely costly and is practical only where labour costs are low.

The only problem remaining in connection with operation of the gun is the biological one of determining whether or not bulletted seedlings will grow as well in competitive, natural conditions in the field as will two-year-old stock grown in nurseries.

Douglas fir seedlings less than two years old or six inches in height, for instance, may be too small to compete with other vegetation around them. This factor is less important in species such as spruce, balsam, and cedar, which are capable of tolerating such natural conditions as large amounts of shade.

Another problem which must be overcome is a sufficient supply of bulletted seedlings at a rate and cost which will make the gun economical to use.

## medals awarded

Five University of British Columbia ceramics instructors are among the 20 Canadians who have been honoured with awards at the Third International Ceramics exhibition in Prague, Czechoslovakia.

A gold medal was awarded to Hilda K. Ross, who instructed at the UBC summer school of the visual arts this year. Silver medals were awarded to Tommy Kakinuma, an extension department instructor for several years; Avery Huyghe, a student in extension department classes; and Santo Mignosa, former extension instructor now associated with the Kootenay school of fine arts in Nelson, B.C. Honourable mention was given to John Reeve, staff ceramicist and instructor in the summer school.

## U BC REPORTS

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## scientist seeks answers

Fundamental answers to two problems which have occupied scientists and engineers for centuries are being sought in a converted army hut at the University of British Columbia.

The problems are friction and wear and the answers are being sought by Dr. Christopher Brockley, an associate professor in UBC's department of mechanical engineering, who heads the only lubrication laboratory at any Canadian university.

"Friction," says Dr. Brockley, "is man's ally on one hand and his enemy on the other." Were it not for friction, he says, simple acts such as walking would be impossible.

In another sense, friction can be enormously wasteful, and he cites as an example the estimate that 50 per cent of all energy produced in power generation is lost through friction.

"Up to now," he says, "friction and wear problems have largely been solved on a trial and error basis. In many instances when these problems arise engineers react by devising measures which may make a given machine run more efficiently, but which fail to provide a general solution."

The problem is complicated, says Dr. Brockley, by the fact that there are so many variables, such as the type of lubricant, the surface involved, and even temperature, at work in any given situation that it is difficult to predict what will happen when one surface moves over another.

"What we are trying to do," he adds, "is contribute to the fundamental work which must be accumulated before we can accurately predict friction and wear behaviour."

The laboratory, now in its third year of operation, is undertaking fundamental studies of two problems.

The first of these is in the area of friction and is one of industry's most annoying problems. The problem, termed "friction-induced vibration" by engineers, occurs in the machining of metals.

Under certain conditions chattering vibrations are set up which lead to imprecise cutting or spoilage of surfaces. The chattering effect can also be a national defense problem and shows up in the positioning of equipment used in tracking missiles and satellites.

This equipment often has to sweep the skies at very low speeds and the vibrations which result can make the accurate location of airborne objects very difficult, Dr. Brockley says.

Dr. Brockley's research is designed to discover the fundamental mathematical equations which govern the effect. "We've made some progress in this research," he says, "and we are now reaching a point where we can predict what will happen under certain conditions."

Another major problem under investigation is that of the wearing of metals. To simulate wear conditions, Dr. Brockley has constructed models magnified a million times which duplicate situations where wear results.

He is presently carrying out experiments with these models to determine how wear particles are removed from surfaces. Again, he explains, the object is to find fundamental answers to the nature of wear and the answers may not be immediately applicable to practical situations.

Both the National Research Council and the Defence Research Board of Canada make equal grants of \$5,000 per year toward the operation of the laboratory.

In addition to his own experiments Dr. Brockley directs the work of three or four graduate students annually. Some senior undergraduate students in mechanical engineering also make use of the laboratory's facilities.

## grants aid child care at hospital

The Children's Hospital of Vancouver and the Canadian Arthritis and Rheumatism Society have made grants totalling \$57,000 to UBC for expansion of research in the department of paediatrics.

The grant from the Children's Hospital of \$50,000, which will be made over a period of about three years, will be used to expand work in the fields of genetics and endocrinology, according to Dr. Bruce Graham, head of the paediatrics department.

He added that because of the interlocking nature of the research program in the department, which is located at the Health Centre for Children at the Vancouver General Hospital, there will inevitably be a strengthening of work done in other areas.

One new area of research has already been embarked on as a result of the grant, Dr. Graham said. This is a joint project in the fields of genetics and blood research as it relates to leukemia.

The department of paediatrics badly needs grants such as this, Dr. Graham said, to provide a reservoir of funds for exploring new research areas.

"This latest grant," he said, "denotes an awakening of interest and maturity in the community which will mean better medical care for children in the future."

Mr. Harvey Grey, chairman of the board of directors of the Children's Hospital, said the grant had been made because the board believed the three functions of any progressive hospital consisted of patient service, education and research.

The CARS grant of \$7000 a year for five years is to provide for the appointment of a rehabilitation expert in the paediatrics department.

Dr. William Miles Gibson, former assistant medical director of the G. F. Strong Rehabilitation Centre in Vancouver, has been appointed as a result of the grant to develop the field of rehabilitation of chronically sick children suffering from rheumatic and allied diseases.

In addition he will be stimulating the research program in the department which is designed to find the causes of rheumatic diseases in children.

The rehabilitation aspect of Dr. Gibson's work stems from the medical concept which seeks to avoid prolonged hospitalization for children, Dr. Graham said.

"The object," said Dr. Graham, "is to prepare the child for a return to the family atmosphere where it has been shown that the recovery process is speeded up."

Dr. Harold Robinson, medical director of CARS, said he was delighted that the department would further extend its activities in the field of rheumatoid arthritis and allied diseases in children.

He said Dr. Gibson's appointment was a significant step forward which would assist in developing an understanding of these diseases and their management as well as increasing the reservoir of knowledge in this field.

## THE FACULTY

**DR. PHYLLIS G. ROSS, C.B.E.**, chancellor of the University, addressed the fourth seminar on Canadian-American Relations at Assumption University of Windsor, Ontario, November 8-10.

Mrs. Ross spoke to a session of the seminar entitled "Where are we going? (Everyman's economic, educational and social objective)." The title of her address, a partial text of which appears on page two of this issue, was entitled "Education: the moment, the mileau, the mission."

**DR. N. A. M. MacKENZIE**, President emeritus of the University, has been appointed honorary professor of international and constitutional law at the University of New Brunswick for the academic year 1963-64.

The post will mark Dr. MacKenzie's first return in an official capacity to the University where he was both president and professor from 1940 to 1944.

Dr. MacKenzie was also named president of the Canadian National Commission for UNESCO.

**DR. JOHN FRIESEN**, director of the extension department, is one of seven Canadian delegates attending the 12th session of the general conference of UNESCO in Paris from Nov. 9 to Dec. 12.

**HUGH C. WILKINSON**, associate professor in commerce, is in Korea on a one-year assignment under the United States special fund program, according to a recent announcement from the International Labor Organization.

He will serve as a member of the Korea Productivity Centre, which assists industry, government departments, and private enterprise in increasing production.

**PROF. T. L. COULTHARD**, of the faculty of agriculture, who is currently on leave in Ghana under the external aid program of the Canadian government, has been elected dean of the agriculture faculty at the University of Ghana for one year.

**DR. BLAIR NEATBY**, of the history department, is one of the authors of a projected 16-volume series on Canadian history. The Canada Council announced recently that it would give \$2,000 a year for five years for support of the project.

**MOLLIE COTTINGHAM**, of the faculty of education, has been named vice-president of the Canadian College of Teachers.

**DR. JACOB BIELY**, head of UBC's poultry science department, was elected to serve an eight-year term on the council of the World's Poultry Science Association at the Association's meetings recently in Sydney, Australia. The Association has 76 active members and its next meeting will be held in Moscow in 1966.

**DR. JOSEPH KATZ**, of the faculty of education, has been appointed for a two-year term to the Phi Delta Kappa Commission on Education in International Affairs.

**PROF. S. H. deJONG**, of the department of civil engineering, gave an invited paper entitled "A review of recent developments in geodesy" at the ninth annual business and technical meeting of the American Geophysical Union Pacific northwest region in Seattle, Washington, on Nov. 2 and 3.

**DR. HELEN M. ECKERT**, of the school of physical education and recreation, served as a panel member and presented a research paper at the annual conference of the Western Society for Physical Education of College Women in Tucson, Arizona, Nov. 8 to 11.

## fungus control developed

A biological method of controlling tree-killing fungus diseases has been developed by a UBC scientist. It holds great promise for the B.C. forest industry which now rejects more than 60 per cent of the timber it cuts because of fungus infection.

The new method of biological control has been developed by Professor John E. Bier of UBC's department of biology and botany, who also holds the chair of forest pathology in the faculty of forestry.

The new method is deceptively simple and is based on the natural balance between beneficial and harmful organisms which live on and within the above-ground parts of trees.

The beneficial organisms—fungi, bacteria and yeasts — if present in sufficient numbers, will provide a natural biological mechanism for keeping the harmful fungi under control, Dr. Bier's studies show.

Where there are not a sufficient number of these beneficial organisms present the harmful fungi enter the tree through any natural crack or broken limb and destroy the wood over a period of forty years or more.

Dr. Bier has attacked the problem by preparing a solution containing microorganisms from the wood, leaves, and bark of healthy trees.

Parts of healthy trees are put in distilled water and placed on a low speed shaking table for five days. When tree cuttings are dipped in the resulting solution their resistance to the harmful fungus disease is almost complete.

The proof of Dr. Bier's theory can be seen on a number of glass dishes in his laboratories in UBC's biological sciences building.

Tree cuttings untreated by the immunizing solutions are covered with a thick web of the destroying fungi. When the harmful fungi are placed on dishes with cuttings treated with the protective solutions, the fungus growth is successfully held in check and the cutting is unharmed.

The protective organisms are increased hundreds of times in the preparation of the solution, Dr. Bier says. The solutions can be diluted a hundred times and still be effective if kept under refrigeration.

An additional benefit of the technique is that solutions prepared from the bark, leaves or interior wood of any healthy tree seem to provide protection for all parts of the same and other kinds of trees.

"What we are dealing with are living organisms, as opposed to artificial chemical compounds," Dr. Bier says. Chemical treatment of tree diseases has produced inconsistent results, Dr. Bier says, and has the disadvantage of destroying both harmful and beneficial organisms.

Dr. Bier's work on developing the biological control method is supported by grants from MacMillan, Bloedel and Powell River Ltd. and the National Research Council of Canada.

Dr. Bier hopes to begin extensive field trials of the solutions in the near future.

## Plummer medal for Dr. Scott

Dr. Donald S. Scott, associate professor of chemical engineering at UBC, has received one of the top awards made by the Engineering Institute of Canada.

He has received the Plummer Medal for 1961 for a paper entitled "The behaviour of rarefied gases," presented at the Institute's annual meeting in Vancouver last year, and subsequently published in the Institute's journal.

The award is made annually for the best paper in the field of chemical or metallurgical engineering. The medal was presented at the annual meeting of the Institute in Montreal in June.



DR. JOHN BIER

## grants total \$16,500

The Leon and Thea Koerner Foundation has announced nine grants totaling \$16,500 to the University of B.C. and Victoria College for projects in higher education.

So far this year the Foundation has disbursed \$93,000. Since the Foundation began making grants in 1955, a grand total of more than \$586,000 has been distributed.

A \$500 grant to Victoria College on the current list is to assist with the collection of works by B.C. artists. Grants made to various departments of the University are as follows:

1. Department of Asian studies - \$1,000. To purchase books in Chinese and Japanese.
2. Department of community and regional planning - \$1,000. To complete a pilot study of highway location and land use.
3. Department of history - \$1,000. To purchase books on French history.
4. Department of music - \$1,000. To acquire historical instruments.
5. Department of theatre - \$5,500. To provide technical equipment and assist with operational costs of the new Frederic Wood Theatre.
6. Faculty of Law - \$1,000. For the purchase of books and other material in the field of comparative and international law.
7. Grants-in-aid fund - \$3,600. For assistance to individual students.
8. The University Library - \$1,900. To assist in forming a library collection of the history of printing; purchase display cases for the exhibition of such material, and to make copies of some letters of Emily Carr.

## diploma for romance department

The University of British Columbia has become the first university in the world to be honored by an organization for the dissemination of French culture and language.

The "Comite de Prestige et de Propogande National," with headquarters in Paris, has awarded its diploma of "Prestige de la France" to UBC's Romance studies department for furthering cultural relations between France and Canada.

The diploma was presented in Paris to Professor Dorothy Dallas, of UBC's Romance Studies department, at a ceremony attended by His Excellency Pierre Dupuy, Canadian Ambassador in France. The diploma was presented by Raymond Rodet, president of the organization.