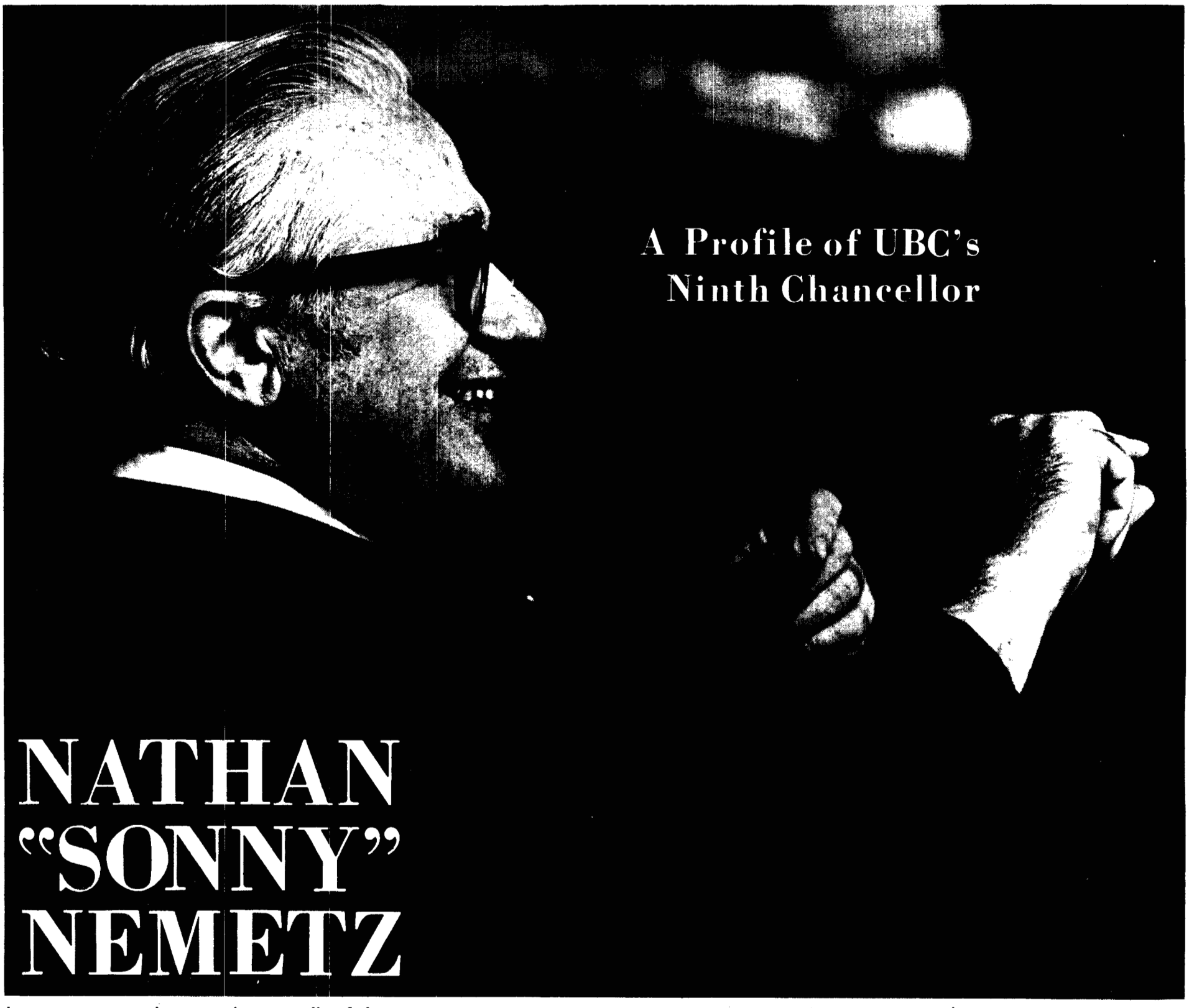
RETURN REQUESTED
UBC Reports,
Information Services,
University of British Columbia,
Vancouver 8, B.C.

Canada Post Postage paid
Postes Canada Port payé

Bulk third class
En nombre troisième classe
2027
VANCOUVER, B.C.

UBC REPORTS

VOLUME EIGHTEEN, NUMBER TWELVE
SEPTEMBER 28, 1972, VANCOUVER 8, B.C.



A Profile of UBC's Ninth Chancellor

NATHAN "SONNY" NEMETZ

Picture by B.C. Jennings

is no stranger to the governing councils of the University of B.C. As a former member of the Board of Governors he was responsible for recommending construction of $50 million worth of campus buildings. He is also a former lawyer who specialized in labor law after developing a passion for social justice while a student at UBC during the dark days of the Great Depression.

By Jim Banham

IF you happened to be an educated Canadian in your twenties in the 1930 you were, according to Montreal-born author Hugh MacLennan, like an aircraft "tuned up with the motors turning over ready to fly."

The problem, he adds, was that you stayed on the ground, or just above it for ten years, "no matter how well tuned up you were."

If, in 1934, you lived in Vancouver and happened to be Nathaniel Theodore Nemetz, who was installed on Aug. 31 as UBC's ninth Chancellor, the outlook was every bit as dismal as that described by Hugh MacLennan even though you had just graduated from UBC at the age of 21 as a Bachelor of Arts with first class honors in history.

When he graduated "Sonny" Nemetz had hoped that he would be offered a scholarship to do graduate work in history at an eastern United States university. (The nickname Sonny was given to UBC's new Chancellor by his mother and his close friends call him that to this day.)

The hoped-for scholarship went to someone else, however, and even if it had been offered to him, he could not have accepted. The recipient had to pay his own transportation to the East "and I didn't have the money," he said recently.

So Sonny Nemetz went to work in a law office as a Vancouver School of Law student and began the three-year work-study regime – at a salary of $10 a month – which led to his being called to the bar in 1937. Eventually he became a principal in one of B.C.'s top law firms, was elevated to the bench in 1963 as a Justice of the Supreme Court of B.C. and became a Justice of the B.C. Court of Appeal in 1968.

Despite a professional career that would have kept two men busy, Chancellor Nemetz is no stranger to the Board and Senate Room of UBC's old Administration Building. Here UBC's two top governing bodies, the 11-member Board of Governors and the 98-member Senate, each meet ten times a year to debate, discuss, approve or reject reports, recommendations and motions that touch the lives of everyone who works and studies at and visits the University of British Columbia.

As Chancellor, Nathan Nemetz will again be a member of both bodies and he will, no doubt, find that his Board and Senate colleagues are still grappling with some of the problems that concerned him when he was a Board member for 11 years from 1957 to 1968 (the last three years as chairman) and a Senator for seven years from 1957 to 1963.

Despite an absence from UBC's governing councils, Chancellor Nemetz is still very much alive to the issues and ideas that are discussed on the campus and in the world of education generally.

One issue that concerns him is the composition of UBC's Board of Governors and he describes as "well-grounded" the suggestion that members of the Board should represent specific areas of community interest.

He points out that in the past, by custom and not

Please turn to Page Two
See OPEN UNIVERSITY

Open University Idea Appeals to New

Continued from Page One

law, an attempt was made to have representatives of labor, industry and the judiciary sitting on the Board.

"I've read the criticism," he says, "that the Board appears to be business-dominated. On the whole, I believe it's advisable to have a Board representative of the community at large. This brings to the Board specific points of view, but, more important, enables these representatives to take back to their constituencies the point of view of the Board and the University."

In short, he says, "the only way the University can prosper is to have the support of the community, and the more individuals you have participating from the full spectrum of society, the better the University is founded."

A recent educational development that appeals to Chancellor Nemetz is Britain's Open University, which offers degrees after a period of supervised home study and which makes extensive use of television for lectures.

"I'm hopeful that as UBC has more money it will explore the possibility of developing credit extension programs for young people and those who missed the opportunity of going to university. An Open University type of operation would also be useful in providing continuing education in the professions."

Behind his desire to foster new approaches to education lies the Chancellor's conviction that "it's important for the University to make it known that there are no barriers to returning to the educational process to enable people to pursue a field of interest that will make them more useful contributors to society."

Fostering new approaches to University problems is one of the characteristics that marked Nathan Nemetz's previous tenure on the Board of Governors. He was responsible, while chairman of the Board's property committee from 1961 to 1965, for persuading the federal government to take a new approach to financing student residences.

Early in the 1960s UBC drew up plans for construction of Acadia Park, a housing development on the southeast edge of the campus for married students and those with families. This in itself was a radical departure from the practice of most universities, which at that time were concentrating on providing residences for single men and women.

The idea which Nathan Nemetz had accepted in Ottawa was to place a value on the land on which University housing developments were to be built. In the case of Acadia Park this meant that an additional $550,000 was available for construction.

"A lot of people said Central Mortgage and Housing Corporation, which lends money to universities for residences, wouldn't buy the idea," Chancellor Nemetz says. "Someone bet me $10 it couldn't be done. I said it could and I collected that bet."

As chairman of the Board's property committee in the early 1960s, Nathan Nemetz had his hands full. The period was one of frantic expansion, utilizing funds from two major public campaigns to construct facilities for University enrolments that were increasing annually by up to ten per cent.

He was responsible for recommending construction of buildings worth some $50 million and in the process he learned to read building plans. The experience has stood him in good stead; he is now chairman of the committee that is planning the new law courts in downtown Vancouver.

Students of that era will also tell you that Nathan Nemetz was one of the key figures in the negotiations with the University administration that led to construction of the new Student Union Building. For this and other contributions to UBC activities the Alma Mater Society presented the much-coveted Great Trekker Award to him in 1969.

So far this portrait of UBC's new Chancellor reveals a fairly conventional public figure who, after a young manhood of hard work, became a member of an establishment organization — the judiciary — and has found time to devote to public service.

This picture of Nathan Nemetz appeared in the student annual, The Totem, *in 1934, the year UBC's future Chancellor graduated. Among his classmates were Prof. Bob Osborne, now head of UBC's School of Physical Education and Recreation; Dean George Volkoff, now head of the Faculty of Science at UBC, and Prof. V.C. "Bert" Brink, now professor of agronomy in the Faculty of Agricultural Sciences.*

The other, less familiar, Nathan Nemetz is a man who developed a passion for social justice in the intellectual ferment of the 1930s. It was a ferment which, according to Hugh MacLennan, "for passionate sincerity . . . had no equal in the English-speaking world since the age of Milton," and it largely revolved around a desire to do something about the Great Depression.

It's difficult for anyone born after 1940 to realize what the depression meant in North America. Statistics can only outline the problem: in the U.S. 16,000,000 people, or one-third of the work force, were unemployed and the 1929 gross national product of more than $100 billion was nearly cut in half by 1933. The same year, in Canada, 26.6 per cent of the non-agricultural work force — 647,000 people — had no jobs. On the Prairies the weather turned sour in keeping with the times and there were food drives in Vancouver and on the UBC campus for the destitute on the drought-stricken Prairies.

"There was a terrible sense of unease among the students of that day," Sonny Nemetz recalls. "We were overcome with a sense of apprehension about economic and political matters and the group of students I belonged to felt that socialism was the answer to the world's ills. We were greatly influenced by such men as American author Lincoln Steffens, who returned from Russia in the 1930s and said, 'I have seen the future and it works.'

Like students of every generation, those of the 1930s indulged in endless bull sessions on every conceivable subject. And talk, if the testimony of his wife and the student annual of that day, *The Totem*, is accurate, was one thing that Sonny Nemetz excelled at.

In fact, says Mrs. Nemetz (nee Bel Newman and a UBC graduate herself), the first time she saw her future husband he was trying to talk his way out of a jam at Prince of Wales high school, which in those days was housed in a building at 25th Avenue and Marguerite Street (today it is an elementary school).

Sonny Nemetz still chuckles when he recalls the incident: "It was around Hallowe'en, and a friend of mine and I had conceived the idea of setting off some firecrackers in the teacher's desk. We concocted a complicated device for exploding them when she opened the desk drawer.

"She didn't know I'd done it but she picked me out immediately as the culprit. In fact, I have a theory that people with dark hair are unfairly picked on generally. At least it seemed to me in those days that the blonde fellows could get away with murder."

When Sonny Nemetz came to UBC in 1930 he put his verbal skills to work as a debater. The formal debate, a contest between two sides to see which one has more skill in speaking and reasoning, is not a form of entertainment that appeals to today's undergraduates. In the 1930s it was a highly regarded intellectual game and Nathan Nemetz excelled at it.

He was a member of UBC's McGoun Cup debating team four years in a row and is described in the 1934 *Totem* as one of UBC's "golden-tongued orators." In the spring of that year he debated, with classmate Edward Fox, the affirmative of the resolution "That the economic salvation of Canada lies in the socialization of her finance and major industry," with a team from the University of Manitoba.

McGoun Cup debates were, in those days, one of the highlights of the University year. The debaters and judges appeared in tuxedos and the confrontations were held in the Oak Room of the old Hotel Vancouver, at the corner of Georgia and Granville Streets. On this occasion the persuasiveness and logic of the UBC team prevailed and one of the judges who cast his vote for the Vancouverites was H.R. MacMillan.

If Sonny Nemetz's University career ended well, the same cannot be said for the start of it. He very nearly failed his first year by wasting his time playing chess and the card game called blackjack in a room in the old Women's Gymnasium, where the new Buchanan office tower now stands.

He had obviously shown promise, however, because at the end of his first year the late Prof. Walter Sage, one of UBC's legendary early teachers, called Sonny Nemetz into his office and told him to straighten up.

Prof. Sage said he was prepared to recommend UBC's future Chancellor for the honors history program if he would only stop doing whatever it was that caused him to miss so many lectures. The chess and blackjack stopped.

Even the sternness of Walter Sage could not prevent Sonny Nemetz from taking an active part in the political life of the UBC campus of that day, which largely stemmed from the depression.

As the 1920s closed, UBC was on the point of embarking on a further expansion of its facilities. When the depression hit, plans for new buildings went down the drain and the operating budget was cut from $650,000 to $250,000. This precipitated an internal struggle which eventually resulted in the passage of a motion of non-confidence in Dr. Leonard Klinck, the then president, by UBC's Senate.

At the same time UBC students and faculty members were fighting to prevent implementation of a report by a B.C. Royal Commission chaired by Mr. George Kidd, a

Chancellor

Picture by UBC Photo Department

On Aug. 31, B.C.'s Lieutenant-Governor and Visitor to the University, the Hon. John Nicholson, left, installed Mr. Justice Nathan Nemetz as Chancellor of the University for a three-year term of office. Mr. Justice Nemetz succeeds as Chancellor Dr. Allan M. McGavin, who remains on the Board as an appointee of the Lieutenant-Governor in Council and who has been elected Chairman of the Board for a two-year period.

Vancouver businessman, which suggested that it might be necessary to close the University and subsidize B.C. students in order that they might attend universities elsewhere.

Sonny Nemetz was one of the chief organizers of a door-to-door campaign which saw students collect thousands of signatures on a petition demanding that the University be kept open and the recommendations of the Kidd Report rejected. He remembers vividly the day that George Kidd and Prof. Henry Angus, later dean of Graduate Studies at UBC, debated Kidd's report in the old Auditorium. It was the first time that loudspeakers were erected outside the Auditorium so that the crowds could hear the discussion inside.

Somehow Sonny Nemetz also managed to act as exchange editor on *The Ubyssey*, a job that involved sending UBC news to other Canadian student papers and editing return despatches. When he was not involved in University affairs he helped to put himself through University by playing the violin and banjo in a four-piece dance band for $5 an engagement and working in the summer as an office boy in a law office or as an assistant to a journeyman electrician in the small contracting business operated by his father.

HE still takes pride in the fact that he learned to install a "knob and tube job" in some of Vancouver's homes. Metal conduits, through which wiring is passed, were unknown in the 1930s. Instead, an insulated wire was run through the house beams and to prevent overheating at the point where the wire passed through the beam, a porcelain tube was fitted into the beam. There was a knob at one end of the tube to prevent it from sliding through the hole in the beam. The system can still be found in many early Vancouver homes that have not been rewired.

"That experience has stood me in good stead," the Chancellor said recently with a grin. "I've been chairman of arbitrations for the electrical industry and when I tell the union representatives that I know how to put in a knob and tube job it gains me a measure of respect."

In the spring and summer of 1934 Sonny Nemetz saw a lot of Bel Newman, who years before had watched him trying to talk his way out of trouble at Prince of Wales high school. She too had come on to UBC a year after her future husband and had followed his fortunes by attending innumerable campus debates. She graduated in 1935 with a first-class degree in economics, political science and philosophy.

But instead of herself becoming a law student as she had planned, she decided to marry Sonny Nemetz and put him through law school. As a law student he was making $10 a month and "it just wasn't possible for us to live on $20 a month," says Mrs. Nemetz.

She went to work in her family's business in a position she thought would be temporary but which proved to be permanent. She eventually became managing director of the business and ran it until she resigned in 1963. The Nemetzes have one son, Peter, a UBC graduate, who is now a teaching fellow in economics at Harvard University.

When Nathan Nemetz set up his own law practice after being called to the bar in 1937 it was only natural that he should specialize in labor law: "It was an extension of the social consciousness I'd developed as a student."

It was not a happy era for labor. Industry often attempted to break unions and there was often violence and resort to goon squads. Nathan Nemetz acted for many unions in this period and as legal representative for the old Vancouver Newspaper Guild helped to smooth the way for its inclusion in the American Newspaper Guild. He also acted for the Vancouver Secondary Teachers Association.

In this period a group of friends and colleagues gathered in the Nemetz's living room to form the first B.C. Civil Liberties Union. Among the charter members were two legendary UBC English professors, Garnet Sedgewick and Billy MacDonald.

As time went by, Nathan Nemetz's reputation as a lawyer led to his being asked by both management and labor to act as an arbitrator and conciliator in an increasing number of labor-management disputes. He was instrumental in settling disputes in the forest industry in 1964, 1966 and 1970 and the provincial government asked him to prepare a report on Swedish labor law and practices in 1968. In 1971 he was the arbitrator in a dispute between B.C. Hydro and the Electrical Workers Union.

MR. Justice Nemetz will not agree with the statement that he is often chosen as an arbitrator in difficult disputes largely because labor has confidence in his ability to arrive at a settlement which will be fair to it. He merely says that he has been told that that is so.

"In a difficult labor-management situation," he says, "it's essential to have the confidence of both parties. If the confidence is there, both sides will allow you to make a mistake if they believe it's an honest one. But if both sides lack confidence in the mediator, even the most minor error will arouse resentment.

"Someone has said that the best solution to labor-management disputes is to have both sides demurring at the proposed settlement. Then you know it's probably fair."

There has never been a year, according to the Nemetzes, that they have not maintained a close connection with and a deep-seated interest in UBC affairs. They have attended for decades the weekly winter meetings of the Vancouver Institute, a town-gown organization that sponsors a series of 19 or so lectures annually and meets in Room 106 of the Buchanan Building (he is a former president of the Institute and this year his wife is a member of the Institute's governing Council).

Mr. Justice Nemetz's deeper involvement in UBC's affairs began in the mid-1950s. He was president of the UBC Alumni Association in 1956-57 and represented the Alumni Association Board of Management on Senate from 1957 to 1963. This led to his election by Senate to the Board of Governors and in 1965 he became the first Senate-elected Board member to be elected chairman of the Board of Governors.

"I was fortunate, as a Board member, in having an interest in all facets of University life because it's my own University," he says. "It's helped to create my mode of life and helped me to achieve my objectives. I feel I owe the University a debt, not as a *quid pro quo*, but in the sense that other young people should be given the same opportunity that I had to get an education. Nothing distresses me more than to hear people say that they know of a young man or woman who would benefit from a higher education but is unable to go because of a lack of money. I feel that if a student has the ability, the University should provide a place for him or her."

Those who know Sonny Nemetz well, and have followed his career closely, also speak about his capacity for political manoeuvring, not the kind associated with partisan politics, but simply the ability to persuade in order to bring about a result which is mutually satisfactory to all concerned.

This capacity is an innate ability and something that showed up early, according to a friend of almost 50 years, Stuart Keate, who claims that Sonny Nemetz got him started on a career in journalism when they were both students at Prince of Wales high school.

Sonny was editor of the school's newspaper, "Three Feathers," which appeared four times a year. One day he suggested to Stuart Keate that he might like to be editor of the paper.

"It's easy," he told Stuart Keate. "All you have to do is get contributions from the class representatives. The printers will help you make it up. You'll like it."

Only after Stuart Keate had agreed to take on the job did Sonny Nemetz reveal that he'd given up the editorship to be free to run for president of Students' Council. "Naturally," he added, "I'd, uh, like a little editorial support for the campaign."

"Naturally," Stuart Keate replied.

"Regard and tremble at the majesty of that juvenile manoeuvre," Stuart Keate says in retrospect. "In one stroke Sonny had unloaded a job he didn't much like (nobody else would take it); had endeared himself to the teachers by finding a successor; had guaranteed the success of his political campaign by appointing a friendly editor; had done his friend a favor by launching him on a career that would last a lifetime."

HE adds: "No man of my acquaintance loves UBC more. . . . I believe he will prove a most distinguished Chancellor."

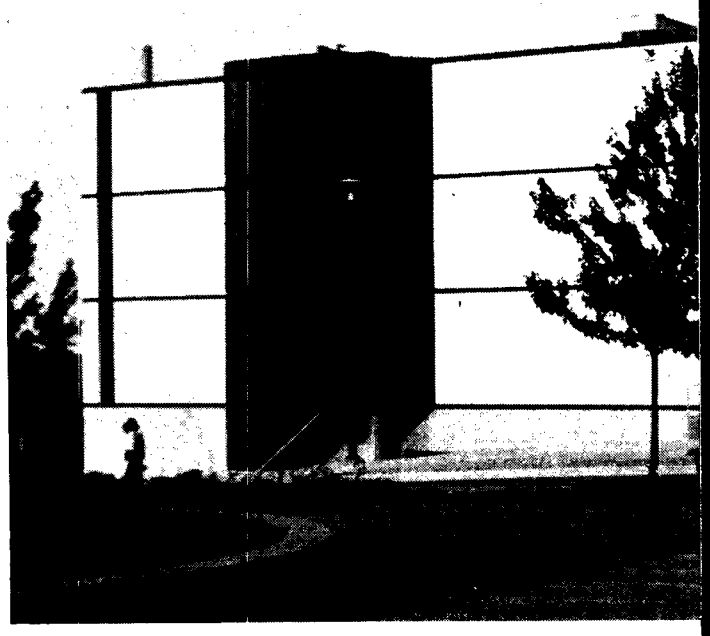
Stuart Keate is undoubtedly right.

But the mind boggles.

If he could accomplish all that as a 14-year-old schoolboy, what may we expect of the mature Justice of the Court of Appeal as Chancellor of the University?

Pictures by UBC Photo Department

Unique skylight of new Sedgewick Undergraduate Library will afford a view into the Library during day and serve as a light beacon at night



Modernistic exterior of the new Geological Sciences

NEW HEIGHTS

UBC students and faculty members will be able to go from the heights to the depths before 1972 is over.

The heights are the three towers of the new Walter H. Gage Residence and the Buchanan Annex office tower, where occupants and visitors to the upper storeys can enjoy a superlative view of Greater Vancouver – on a clear day.

The depths will be the new two-storey Sedgewick Undergraduate Library, now in the final stages of construction under the Main Mall, which will provide 2,000 study spaces and a book collection of 180,000 volumes.

PLEASANT VIEW

The view from the new Library won't be extensive but it will be just as pleasant. Small-scale landscaped courtyards will be visible through floor-to-ceiling windows on the east and west sides of the unique building.

The new residence, named for UBC's President, consists of three 16-storey towers and a group of low-rise apartment units, the latter now in the final stages of construction. The complex cost more than $8.8 million and was built with funds borrowed from the Central Mortgage and Housing Corporation.

In keeping with Board of Governors policy, the CMHC loan will be repaid out of the rents and other services charged to students and to visitors who make use of the complex for conferences in the spring and summer.

The development is also a new departure in residence living. Students live in groups of six men or women, each group occupying one of four suites on each of the 16 floors of the high-rise towers. Two suites on each floor are occupied by senior students who have previously lived in other UBC residences.

Each student has a separate bedroom and study area and each group of six shares a common sitting room, kitchen and bathroom facilities. A total of 1,368 students will be housed in the residence when it is complete.

Completion of the 12-storey Buchanan Annex office tower this summer has meant that life is a little less crowded for some faculty members and students in the Faculty of Arts.

The Departments of German, English, French, Economics and History have moved into the $2.8 million building, which also includes nine seminar rooms for small-group teaching as well as a number of reading rooms and small libraries for the use of students and faculty members.

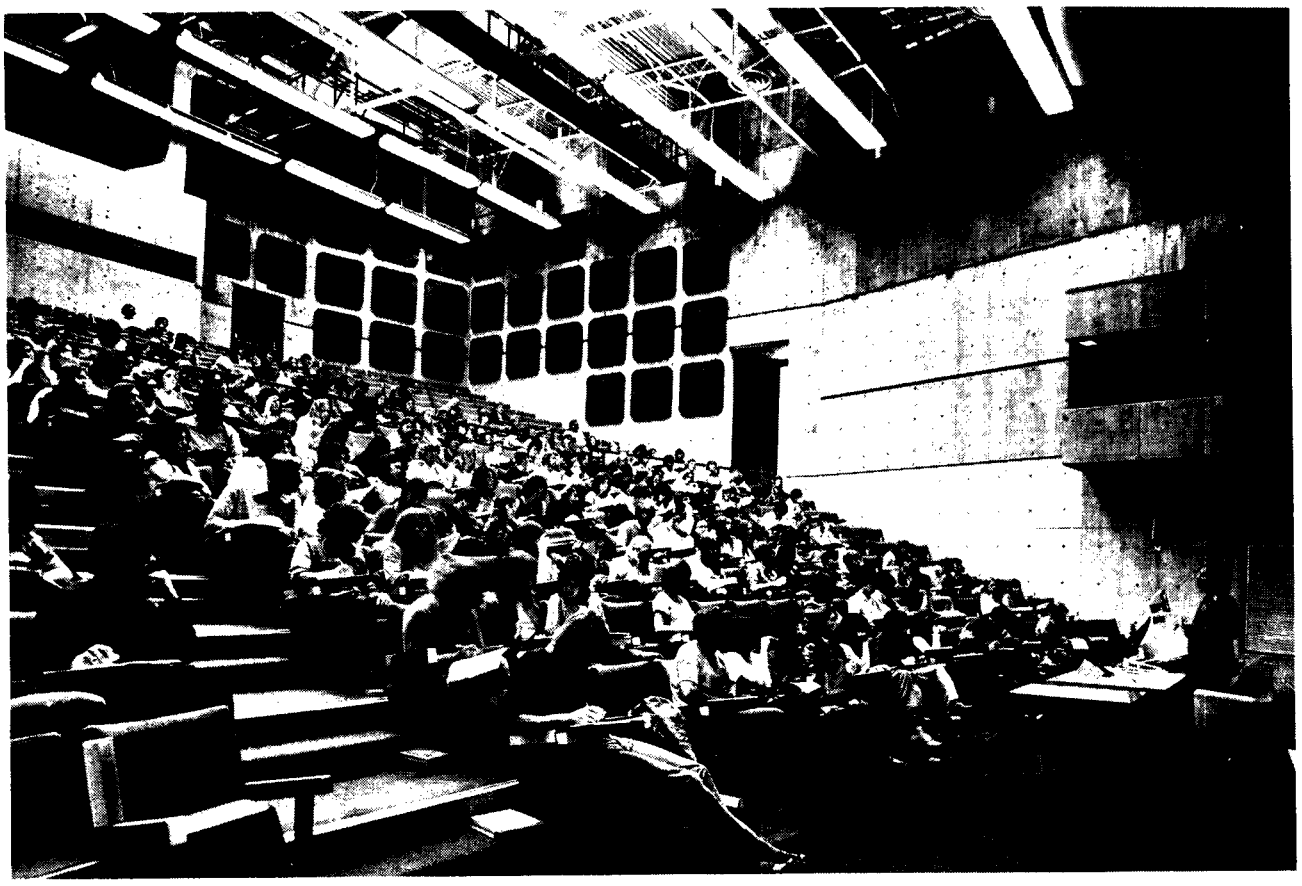
OAK TREES KEPT

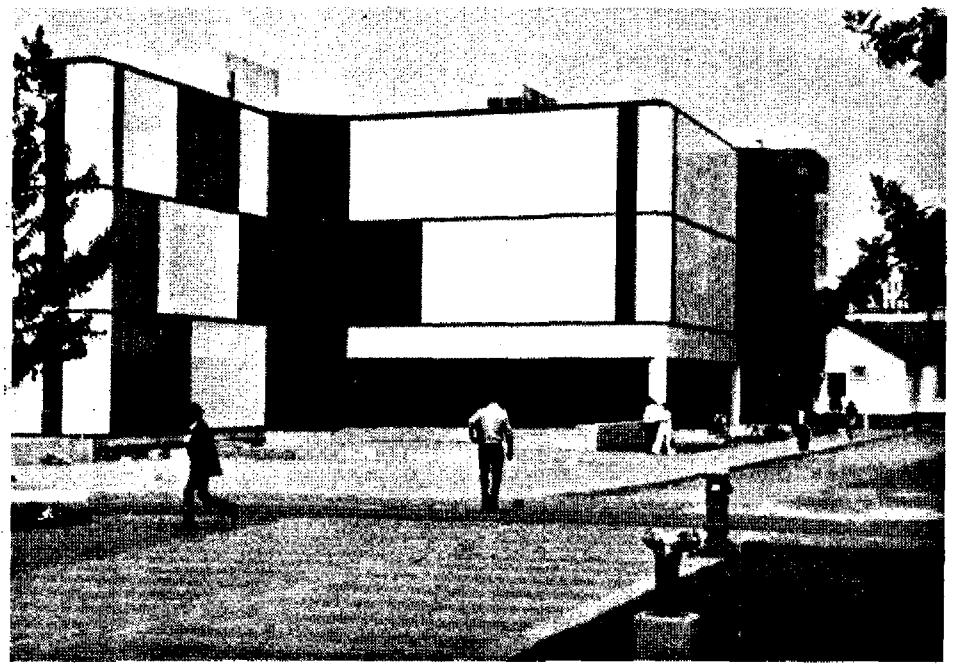
The design of the $3.9 million Sedgewick Undergraduate Library is an ingenious solution to a seemingly insoluble problem: how to create a new library facility in an area where a careful survey showed it ought to be – immediately west of the existing Main Library – without destroying the traditional character of the oak-lined Main Mall and adjacent landscaping.

The architectural solution was to remove some 100,000 cubic yards of earth to provide for an underground library and to encase the roots of the oak trees in brick-faced caissons which have been made an integral part of the interior and exterior design of the building.

When the building is completed in November, the roof of the Library will again become the Main Mall linking the north and south sections of the central campus. New features of the Mall will be staircases leading down to

Instructors using the 500-seat lecture hall in the Instructional Resources Centre can make use of a wide range of audio-visual equipment





Centre contrasts sharply with the dinosaur in the building's main lobby

AND NEW DEPTHS

Library entrances and an unusual doubleskylight which will offer a view down into the Library and serve as a light beacon at night.

A new campus building that is likely to have an immense effect on teaching is the P.A. Woodward Instructional Resources Centre, the most recent addition to UBC's developing Health Sciences Centre. The central idea embodied in the IRC, as the new building is called, is an integrated teaching program designed to develop a health team approach to the delivery of medical care and services, a concept pioneered by Dr. John F. McCreary, former Dean of UBC's Faculty of Medicine and now Co-ordinator of Health Sciences.

The IRC teaching program will ensure that students in the Health Sciences – doctors, dentists, pharmacists, nurses, rehabilitation specialists and paramedical groups – receive some of their training together and thus become more knowledgeable about the contribution that each can make to patient care.

The people who make the IRC work are members of the Faculty of Medicine's Department of Biomedical Communications – formerly the Department of Medical Illustration – who will develop specialized teaching aids and maintain and operate $250,000 worth of audio-visual equipment built into the building.

More than a quarter-million miles of wire course through the IRC, making it possible for a single lecture or demonstration to simultaneously reach a total of 1,200 people in the building's five lecture halls and 14 seminar rooms. Three lecture halls each seat 135, one seats 117 and the fifth has a 500-seat capacity. An almost endless variety of teaching combinations is possible utilizing film, videotape, slides and overhead projectors.

MINI-IRC TO TOUR PROVINCE

Other floors of the IRC house the Deans and Directors of the Faculties and Schools that are now represented in the Health Sciences Centre, and the Division of Continuing Education in the Health Sciences, which will make use of IRC resources to provide material for practicing health professionals in the Lower Mainland and remote B.C. communities. The latter will be serviced with pre-packaged material prepared at the IRC and delivered in a specially-designed bus equipped to handle audio tapes, film and slide projection.

The expertise of the IRC is not restricted to the Health Sciences. Many other departments make use of the building's facilities and equipment and the services of the Department of Biomedical Communications are available on a campus-wide basis.

Half the $3.75 million cost of the IRC came out of a $4.2 million gift to UBC from the late Mr. P.A. Woodward. The other half came from the federal Health Resources Fund.

The new Geological Sciences Centre, opened last April, is a study in contrasts.

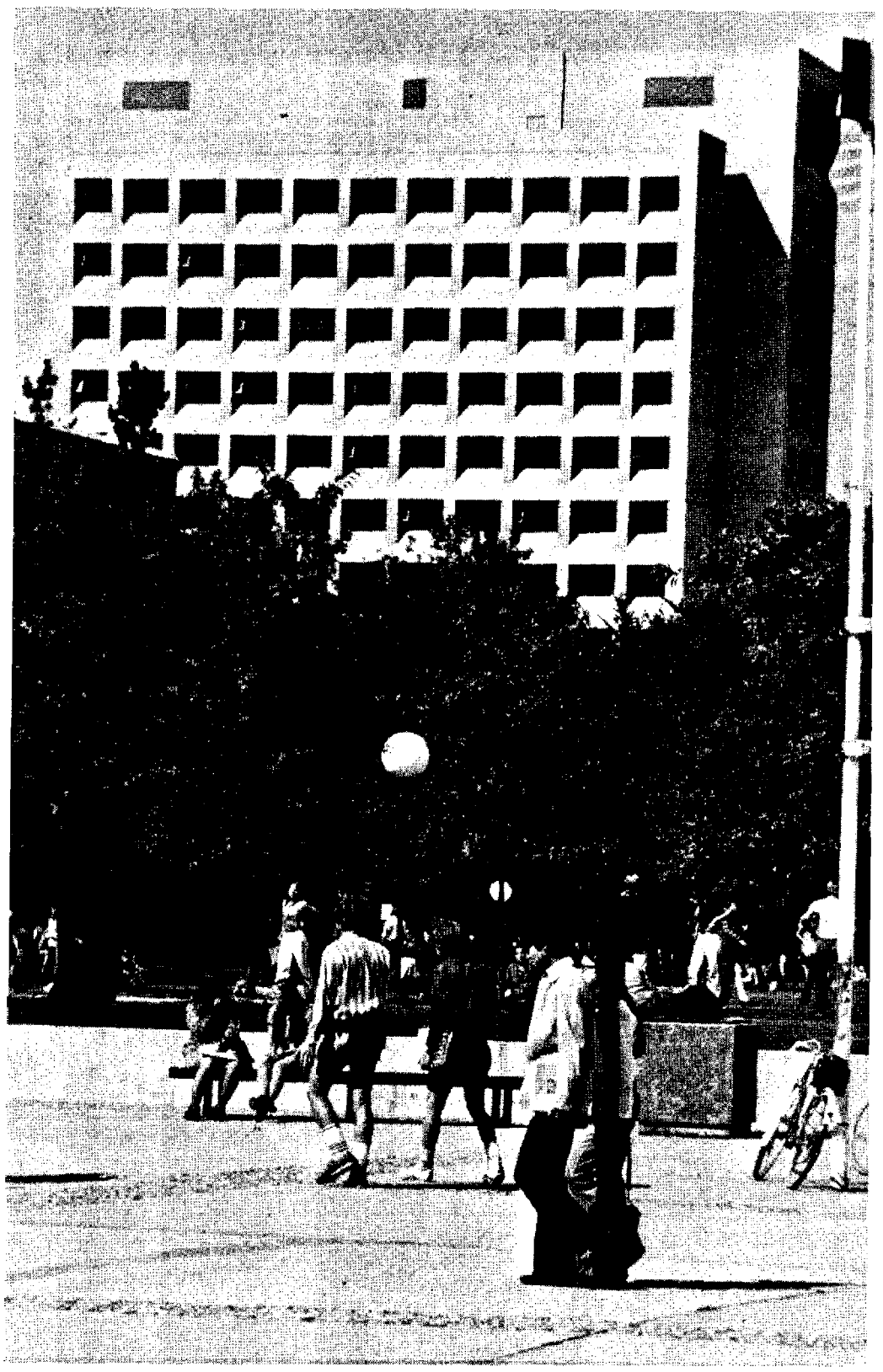
From the outside the aluminum skin coated with a baked enamel finish gives the onlooker the feeling that he is looking at a painting by Piet Mondrian, the Cubist-influenced Dutch painter who was famous for his startling compositions involving vertical and horizontal lines.

Mounted in the lobby of the building, and contrasting sharply with the clean interior and exterior lines, is the 25-foot-long skeleton of a Lambrosaurus, a duck-billed reptile that roamed the Canadian West in the age of the dinosaurs.

The skeleton is about the only thing in the $2.83 million building that is ancient, however. The interior is characterized by modular walls that can be moved to alter the size and shape of rooms to any desired configuration and by service "trees" for each of the three floors of the building to carry electricity, communications, gas, hot, cold and distilled water and laboratory sewage disposal vertically and thus eliminate scattered wall and floor connections for these services.

The new Geological Sciences Centre is basically a laboratory building for undergraduate teaching and graduate student and faculty research. Faculty members are still housed in scattered facilities on the central campus and are eagerly awaiting the completion in mid-1973 of a $500,000 extension that will contain 35 offices.

The bulk of the funds used to build the existing building – some $1,900,000 – were contributed by industry, alumni, faculty members and students. The balance – $930,000 – was appropriated by the Board of Governors from UBC's capital budget. Funds for construction of the new office wing will come entirely from the UBC capital budget.



The 12-storey Buchanan Annex office tower provides office space for five Faculty of Arts departments and also includes seminar rooms and reading rooms

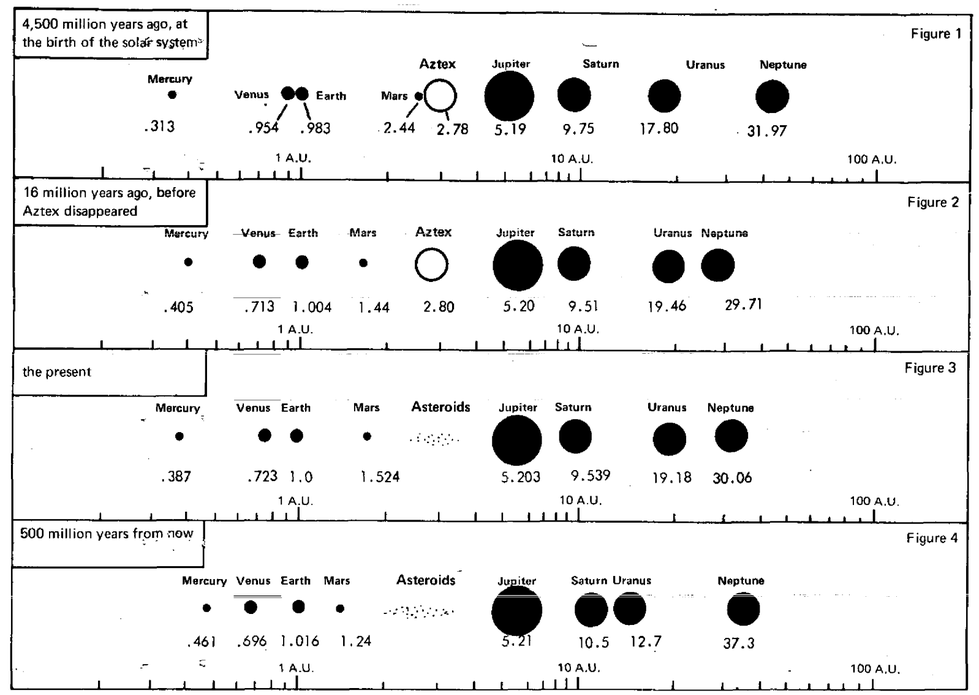
High-rise towers of the Walter H. Gage Residence provide a superlative view of the Lower Mainland on a clear day

Prof. Michael Ovenden, right, of UBC's Department of Geophysics and Astronomy, is the discoverer of a "footprint" of the lost planet Aztex, which is shown in the diagram at far right in relation to the other planets up to the time of its disappearance, calculated at approximately 16,000,000 years ago. Positions of the planets are shown on a logarithmic scale graduated in astronomical units (1 A.U. = distance from the Earth to the Sun). Fig. 1 shows relative positions of the planets soon after the solar system was formed. Fig. 2 shows the position shortly after Aztex vanished. Fig. 3 shows the present position, with asteroids (perhaps chunks of the fragmented planet) filling the former orbit of Aztex. Fig. 4 predicts relative positions in the distant future, when the solar system will again have reached a state of equilibrium. (Pluto, outermost of the planets, is not shown).

Creativity and The Value of a *Little* Ignorance

By Peter Thompson

Picture by Michael Tindall



Prof. Michael Ovenden's discovery of a "footprint" of a tenth planet which disappeared 16 million years ago in a gargantuan explosion is disconcerting. It arouses in some of us a mild case of cosmic anxiety.

In mid-August at the NATO Advanced Institute on Dynamical Astronomy at Cortina d'Ampezzo, Italy, Prof. Ovenden announced that a planet 90 times the mass of the Earth once orbited the Sun between Mars and Jupiter and disappeared in the greatest explosion our solar system is known to have experienced. Mysteriously, almost all trace of Aztex, the name he has given to the lost planet, has vanished. Only fragments of it – totalling a mere 1/900th of its original mass – still exist.

After all, we are approaching the last quarter of the 20th century and many of us are in a post-moon landing frame of mind. Many of us are already jaded with space travel. And astronomy has penetrated beyond our solar system into the galaxy of which our solar system is a mediocrity and beyond to other galaxies and even beyond that.

Modern astronomy paints a vision of drama in our universe. Instead of the universe continuing on unperturbed to eternity, we know that it is often witness to instability and catastrophe. Stars collapse, their fuels exhausted. Or they can explode, spreading their matter into interstellar space. Galaxies are shuddered by unimaginably huge convulsions.

But these events always happen "out there." We tend not to associate them with ourselves nor with our corner of the universe. In spite of our secular knowledge about the universe that modern astronomy has given us, we sub-consciously assume our solar system to be static and whole. This assumption may have a psychological basis, a throw-back to the Medieval view of the universe that placed the Earth in the centre.

HUGE PLANET

Now along comes Prof. Ovenden and tells us that he has evidence that one of our sister planets disintegrated. On the one hand he gives us a planet we never knew existed, a huge planet that dwarfed our own, and on the other he destroys it in a cosmic catastrophe that is both recent and close to home. Other astronomers had thought it likely that a planet once existed between Mars and Jupiter but none had imagined it 90 times the mass of the Earth. Nor did many think it could have exploded so recently.

Sixteen million years ago is comparatively recent in the history of our solar system. The solar system is about 4,500 million years old. If its age were represented by one year, then Aztex would have blown up yesterday, 32 hours ago to be more exact.

Sixteen million years ago the Earth was much like it is today. The continents had formed. The oldest mountain ranges on the Earth had come and been eroded away. In that recent evening sky, the brightest object apart from the moon was Aztex, occupying the same position it had for thousands of millions of years. Then suddenly Aztex exploded in a tremendous flash of light and flaming meteorites, remnants of the destroyed planet, showered the Earth.

Could the same thing happen to the Earth? Prof. Ovenden says the evidence is that only large planets may blow up. Disintegration isn't associated with the puny likes of the Earth.

Others might find Prof. Ovenden's discovery of a footprint of Aztex disconcerting for another reason. The process he used to determine that Aztex once existed and a new theory on the behavior of planets is the reverse of what is conventionally taken to be the pattern of scientific discovery.

It all began about two decades ago.

"I have had a dream – you would perhaps call it an obsession – but I have had a dream for 20 years that the distances of the planets from the Sun are not accidental," Prof. Ovenden said.

"The planets are close together near the Sun but as you go out from the Sun they get farther and farther apart. Except for one interesting exception. Between Mars and Jupiter there is a gap.

"This regular spacing of the planets around the Sun and the gap between Mars and Jupiter has been known to astronomers for centuries. In fact, exactly 200 years ago a German astronomer, Johann Titius, put forward the first mathematical representation which showed that the distances of the planets from the Sun aren't random. But neither Titius nor anyone else has been able to explain why."

The problem perplexed Prof. Ovenden – "I've been worrying away at it like a dog at a bone for the past 20 years" – but he couldn't do much about it until one years ago when he was given a year's study leave from UBC. He was free from teaching and administration and could concentrate completely on research.

He first went to the Institute of Theoretical Astronomy at Cambridge University, which has a reputation for being something of an international think-tank for astronomers since most of the staff are visiting scientists from centres all over the world. Turning over in his mind was an explanation for the distribution of the planets around the Sun. His idea was that the planets tend to adjust the distances between their orbits simply through the mutual gravitational influence of one upon the other.

The dominant gravitational force in our solar system is, of course, the Sun. Because it has 99.9 per cent of the total mass of the solar system the flight of a planet is constantly being bent in a curved line around the Sun. Prof. Ovenden maintains that the planets slowly adjust their distances so that their mutual gravitational forces are minimized. If the planets were close together they would interact violently and change their orbits quickly. If they were far apart, they wouldn't interact as intensely and their orbits would change slowly. He calls his theory the principle of "minimum interaction distribution."

It's as if the planets were anti-social and want to keep as far away from each other as the laws of physics allow. At one point, he was thinking of calling it the principle of planetary claustrophobia. The major role in establishing interplanetary distances would be Jupiter because of its huge mass. Jupiter's mass is more than the combined mass of all the other planets. Compared to Jupiter, Saturn, Uranus and Neptune, the Earth is trivial.

But what is the minimum interaction distribution of the planets, the positions where they would interfere with each other least? Prof. Ovenden was faced with a mathematical barrier. No direct way of calculating the minimum interaction distribution exists.

LABORIOUS JOB

"To calculate how the solar system evolved we have to do very lengthy calculations, called integrations," he said. "We have to assume that all the planets except one, say the Earth, are fixed, and calculate how much the Earth's orbit would move during a day or so. Then we keep the Earth and the rest of the planets fixed and move, say, Venus.

"It's a very laborious job and every time we make a little step we introduce a little error because, of course, the planets are all in constant motion. Do it a thousand times and the errors have added up. Do it a million times and the errors are bigger still.

"You could not carry enough figures in the most powerful computer to have any appreciable accuracy in the long run. The farthest back the evolution of the planets of our solar system has been integrated, after months of computer work, is one million years. That may seem a long time but it is useless for my needs since the age of the solar system is 4,500 million years."

If he was to be able to prove that his idea of minimum interaction distribution was right, he would have to find some way of getting around integration mathematics. So he left Cambridge and went to the Department of Aerospace Engineering and Engineering Mechanics at the University of Texas at Austin, where a group of integration experts had formed as a result of the United States space program.

His most intense thinking about the problem probably began at this point. After spending days using the Austin computer trying to find a short cut around the staggering problem of integrations, he'd fly to the Instituto de Astronomia de la Universidad Nacional Autónoma de México, where he pondered the results. In the end he was able to develop a technique that allowed him to run the complete evolution of the solar system through a computer in about 10 seconds. The technique was approximate but sufficient for what he wanted.

If the principle of minimum interaction distribution explains the position of the planets orbiting the Sun, it could also be applied to the moons or satellites revolving around individual planets within the solar system.

So he calculated the minimum interaction distribution for the five satellites or moons of Uranus and the major five of the 12 satellites of Jupiter. When he compared the theoretical minimum interaction distribution of the satellites around their parent planets with their known distances, he found he was amazingly accurate. Then he calculated the minimum interaction distribution for the planets of Barnard's star, the only other star apart from the Sun known to have an extensive planetary system. Again the match was nearly perfect.

"To a precision I did not expect, the principle worked. The distribution of the satellites of Uranus and Jupiter was very accurate, to within about one per cent of what I had calculated them to be. The distribution of the planets around Barnard's Star was also in agreement, though not so accurately because more error is involved in estimating distances in another solar system. But the distribution was within – in fact, far better than I had expected – the pattern I had predicted."

Then he applied his theory to the planets in our solar system. First he took the huge outer planets of Jupiter, Saturn, Uranus and Neptune because they would be little affected by the gravitational influence of the other, smaller planets. The theoretical and actual positions of the planets didn't match.

So Prof. Ovenden calculated what could account for the present positions of the large planets and be consistent with his theory. He found that the actual positions of the outer planets make sense only if it is assumed that a mass 90 times that of Earth orbiting the Sun between Mars and Jupiter disappeared 16 million years ago.

Then he calculated the theoretical positions of the smaller, inner planets – Mercury, Venus, Earth and Mars. Again the figures didn't match their actual distances. And again the actual distances made sense if it was assumed that Aztex existed until 16 million years ago.

He says he would have been quite content if he had found that the actual and theoretical positions of the planets in our solar system matched. "Now the simple hypothesis I started with has changed. My idea that the planets seek minimum interaction distribution is true but the evidence, I think, is unambiguous that there was a planet 90 times the mass of the Earth in the asteroid belt and it went 16 million years ago."

Two centuries ago, suspecting a planet in the famous gap between Mars and Jupiter, astronomers began a systematic search of that part of the sky. Astronomers have subsequently found tens of thousands of pieces of rock, the largest about 500 miles in diameter. It has long been thought that these asteroids might be part of a disintegrated planet, since their surfaces are broken and jagged rather than smooth like a planet's. Many meteorites striking the Earth are believed to have come from the asteroid belt between Mars and Jupiter. Geophysical analysis of many of the meteorites indicates that they were suddenly broken down into small pieces about the same time as Prof. Ovenden has calculated that Aztex disappeared.

But what happened to Aztex? The total mass of the asteroids is only 1/900th of the mass of the lost planet. What happened to the other 664,540,800,000,000,000,000,000 tons of matter? Did it fall into the Sun? Was it blown out of the solar system? No one knows.

One month before Prof. Ovenden, at the scientific meeting in Italy, launched and destroyed Aztex in the same breath, a NASA space probe began to enter the 175-million-mile wide asteroid belt. The unmanned Pioneer 10, travelling faster and further than any other man-made object, is scheduled to emerge from the belt early in 1973 and pass behind Jupiter before turning back toward the Earth.

So far the space craft has collided with much more dust in the asteroid belt than was anticipated. A speck of Aztex dust just 2/1,000th of a gram could penetrate the space ship's aluminum body and cause serious damage. Pioneer 10, travelling faster and farther than any other are estimated at nine to one in favor.

Instead of trying to find out where most of Aztex went when it blew up, Prof. Ovenden is following another mystery. What made Aztex blow up? This will be his main research interest now that he is back teaching at UBC.

INTUITION CITED

The method he used to arrive at his principle of minimum interaction distribution is the opposite to what many consider to be the pattern of scientific discovery. The conventional view is that a scientist first gathers data on whatever he's studying and works out an idea based on what he sees. Much valuable scientific activity follows this method.

But what Prof. Ovenden has done is the reverse. The idea of minimum interaction distribution came first. His biggest task was to find out if the idea matched reality.

"Intuition is the driving force of science," he says. "Discoveries that unite bits and pieces of our experience into a coherent pattern are the product of ideas. A new pattern, a new perception of regularity and order, is discovered in what appeared before as chaotic and arbitrary."

The history of science is strewn with examples of this. One of the most famous is Newton's discovery of the Law of Gravity. Newton first had the idea that the moon was held in orbit by the gravitational force of the Earth and that this attraction was exactly counterbalanced by the tendency of the moon to fly off into space, by its centrifugal force. After he got the idea he had to calculate the gravitational force of the Earth and the centrifugal force of the moon. Then he had to show that the resulting theoretical orbit of the moon coincided with its actual orbit.

Prof. Ovenden says the creative imagination is as active in the sciences as in the arts. Each re-arranges the world into a new point of view. Each succeeds or fails on the basis of whether the new vision makes sense or not. Roughly, Prof. Ovenden says, the same criterion applied to a new scientific theory also applies to a poem or painting. If it offers a consistent, coherent view of the world, then it is "right." Just as two poets can write different poems about the same experience, so scientists can produce different views of the same phonomenon and so long as they work equally well, they are both valid.

The search for unity in the universe is a fundamental activity of man. The history of all the sciences is marked by a search for harmony. But the theme of harmony is intense in the legacy of astronomy, perhaps because it is the oldest of the sciences.

Pythagoras, the Greek who is often called the father of science, believed that the heavenly bodies moved through space in such exquisite mathematical harmony that they produced music which no one could hear.

Kepler, who was an astrologer as well as astronomer, worked furiously at trying to find some explanation for the distances between the orbits of the planets. He thought he had found the secret of creation when he had the idea that the orbits could be represented by five geometrical shapes placed one inside the other. Such harmony, Kepler believed, could only be the result of a supreme divinity. Though his astronomical assumptions were wrong, they eventually led to Kepler's Three Laws, which later formed a major part of the foundation of Newtonian mechanics.

FORCE OF GRAVITY

For many astronomers, celestial or cosmic harmony was God-given. God was a mathematician addicted to geometry. "Geometry is unique and eternal, the reflection of the mind of God," said Kepler. Newton thought that without the constant intervention of the mind of God, the universe would collapse under the crushing force of gravity.

What Prof. Ovenden did could have been done by any astronomer in the past 200 years. Any astronomer could have thought of minimum interaction distribution and perhaps some did. Anyone could have worked out the approximate method of doing integrations on the planetary orbits. They might not have had computers at their disposal to run through the evolution of the solar system in ten seconds. But the calculations could have been done manually. They wouldn't have taken as long as some done by astronomers in the past.

"Many of the original ideas I have had had their germ in a question asked by a student, often an undergraduate student," he said. "One greatly underestimates the importance and significance of comments made by intelligent people who are new to a subject.

"One must always be sceptical about generalizations about education, but the thing that most perturbs me is the notion that to do something original you have to learn what everyone else has done on the subject. Basically, things are created, new ideas arise, not by continuing on from where others have left off but by breaking off somewhere down the line and thinking again.

"The tree of knowledge is a good symbol. A branch doesn't start from the tip of the tree; it starts somewhere down the trunk. All creative things involve thinking again, seeing the world in a new way.

"But one mustn't go too far. I'm deliberately overstating the case because I see around me so much of the opposite view. Of course, you have to know enough about a subject to know what the problems are. One could quote Newton's comment that if he'd been able to see farther than anyone else it was because he stood on the shoulders of giants. But, nevertheless, if you spend all your time learning what other people have done, not only will you not have time to develop your own ideas, but you won't have any ideas of your own to develop.

"For creative work I think a *little* ignorance is a valuable thing."

DR. LEON KOERNER DIES AT 80

Dr. Leon J. Koerner, whose benefactions to UBC included $1.5 million for construction of the Faculty Club and the Thea Koerner Graduate Student Centre, died Sept. 25 at the age of 80.

A key figure in the building of one of Canada's largest forest products companies, Dr. Koerner spent a major part of his life sharing his wealth with Canadians, to whom he felt a deep sense of obligation.

The Czechoslovakian-born industrialist, who came to Canada in 1939 after the German takeover of his native country, gave away millions of dollars for projects in the fields of education, the fine arts and health and welfare.

His largest single benefaction is the foundation which he and his late wife, Thea, established in 1955 with an initial capital gift of $1 million.

In its 17-year history the Leon and Thea Koerner Foundation has given away more than $1.2 million to support a multitude of projects carried out by B.C. musical groups, art museums, community service organizations, libraries and educational institutions.

Dr. Walter Gage, UBC's President, paid tribute to Dr. Koerner in the following statement issued on the day of his death:

"This University, like the province of which it is a part, has lost one of its greatest benefactors. Dr. Koerner, from his earliest days in B.C. during the 1930s, has been a staunch friend and supporter of the University and has shown his support in many tangible ways. His most notable gifts were the UBC Faculty Club and the Thea Koerner Graduate Student Centre but over the years he also made many contributions to establish and support scholarships for UBC students.

"Dr. Koerner always stressed, in making these gifts, that he felt an obligation to repay the country of his adoption to which he felt he owed a great deal. He knew the importance of higher education and he made his gifts to UBC because he felt strongly the need for citizens to support such institutions. Dr. Koerner was a man of sterling qualities and he will be missed by all who knew him."

Dr. Koerner and his wife came to Vancouver in 1939 as part of a cross-Canada search for investment opportunities. Their journey was delayed when Mrs. Koerner contracted mumps and, with time on his hands, Dr. Koerner investigated the possibility of starting anew in the lumber business, which was still in the doldrums of the Depression.

The key to Dr. Koerner's revitalized fortunes proved to be hemlock, a coarse, inferior wood which at that time was almost completely neglected by B.C. lumber firms.

He began cutting hemlock under its second name — Alaska pine — in a New Westminster lumber mill which had been closed for three years and which required a quarter of a million dollars to refurbish.

In the course of time, Alaska Pine and Cellulose Limited became B.C.'s largest producer of pulp wood for textiles, the second largest producer of timber and one of the big four in the province in the production of wood pulp for paper and newsprint.

The sawmills and plants operated by Leon Koerner and his brothers, Theodore, Walter and Otto, were the first in the province to introduce employee lunch rooms, Christmas bonuses, holidays with pay and a medical plan. Leon Koerner was always highly regarded by his employees and knew hundreds of them by their first names.

Leon Koerner regarded as the most valuable document in his possession his Certificate of Canadian citizenship — number 0388 — which hung on a wall in his office in the Graduate Student Centre. He was one of the first 400 people to receive the certificate when Canadian citizenship was introduced in 1947.

Dr. Koerner is survived by his sister, Mrs. Else Reif, of Vancouver, and his brother, Dr. Walter C. Koerner, a former member and chairman of UBC's Board of Governors.

At Dr. Koerner's special direction no funeral or memorial service was held following his death.

Four Faculty Members Die In August

Four active and retired members of the University of B.C. faculty died in August.

Prof. Frank A. Forward died Aug. 6 in the Vancouver General Hospital at the age of 70. One of Canada's most brilliant metallurgists, Prof. Forward at the time of his death was consultant to UBC on Research Administration, a position he took up five years ago after a career in industry, government and academic life.

Prof. Forward was the first director of the Science Secretariat of the federal Privy Council from 1964 to 1967. He was one of a group of scientists who initiated what eventually became the B.C. Research Council, was head of the Department of Metallurgy at UBC from 1945 to 1964 and was responsible for drafting the legislation which led to the formation of the Science Council of Canada.

One of his most important research contributions was for Sherritt Gordon Mines Ltd. Prof. Forward proposed a radical solution to the company's problem of extracting nickel from ore mined at Lynn Lake in B.C. The technique he suggested is now called the "Forward Process."

He was also co-inventor of the uranium extraction process used at Beaverlodge, Sask., and held about 50 patents on similar metallurgical processes.

Dr. George Gordon Moe, plant geneticist and former head of the Department of Agronomy at UBC, died Aug. 9 in Vancouver at the age of 83.

Dr. Moe received a B.S.A. degree from MacDonald College (McGill) in 1914 and an M.Sc. degree from McGill in 1921. He took a Ph.D. degree in 1924 from Cornell University.

While with the federal government's Central Experimental Farms from 1914 to 1919, he selected wheat strains for improved yields in northerly climates and produced the strain known as Reward Wheat.

He was a member of the UBC faculty from 1919 until he retired in 1954.

Dr. Isadore B. Holubitsky died Aug. 25 in Vancouver at the age of 41. Dr. Holubitsky was assistant professor in UBC's Department of Surgery.

He graduated from the University of Alberta's medical school in 1955, interned in the Misericordia Hospital in Edmonton in 1956 and 1957 and did specialty training in surgery at the Vancouver General Hospital.

Prof. William Harrison White of UBC's Department of Geological Sciences died Aug. 5 in Vancouver at the age of 59. Prof. White received his B.A.Sc. and M.A.Sc. degrees from UBC and took a Ph.D. degree at the University of Toronto.

He was a member of the UBC faculty from 1947 until his death.

Prof. White received a number of academic distinctions, including the W.G. Miller Medal of the Royal Society of Canada and the Barlow Medal of the Canadian Institute of Mining and Metallurgy. He shared the CMMI Gold Medal with two other scientists for their 1957 paper on the geological deposits of the Highland Valley of B.C.

Bike Path Takes Shape

Work has begun on the creation of a new bicycle path on Chancellor Boulevard leading to the UBC campus. And a spokesman for the University Endowment Lands said there are plans to improve two other bike paths on University Boulevard and Southwest Marine Drive.

Work on building a six-foot-wide bike path on Chancellor Boulevard from Tasmania Road to Acadia Road is being carried out at the same time as Department of Highways workmen are creating a new stretch of road to link Chancellor Boulevard with Fourth Avenue.

No date has been set for the completion of the bike path or the new road, according to Mr. R.P. Murdoch, manager of the University Endowment Lands.

On Chancellor Boulevard, beyond Acadia Road, where the new bike path will terminate, cyclists will be permitted to ride on the south sidewalk but will be required to give pedestrians the right of way.

Plans also exist for improvement of the existing cycle path on the south side of University Boulevard, but Endowment Lands officials want UBC to share in the costs of widening the path from four to six feet.

Mr. Murdoch said the entire cost of the Chancellor Boulevard bike path would be borne by Endowment Lands ratepayers since their children will use it to bicycle to the University Hill elementary school adjacent to Acadia Road.

Six-foot-wide asphalt shoulders for bicycles will be added to Southwest Marine Drive from Imperial Avenue to 41st Avenue, Mr. Murdoch said.

Under consideration by UBC is the possibility of allowing bikers to use internal roads in the vicinity of Imperial Road to reach the South Campus research area road system.

Students Vote Oct. 4-5

UBC students will go to the pools Oct. 4 and 5* to vote on a referendum for a new indoor swimming pool and on an amendment to the Alma Mater Society constitution.

Voting will also take place for an "Ombudsperson," an ex officio member of the executive of Students' Council, and for two student members of the UBC Senate.

In the referendum students will be asked to vote yes or no on a proposed levy of $5 per student per year to amortize part of the cost of the indoor pool.

The referendum resolution also calls for the following conditions to be met:

1. The pool shall be planned and managed by a committee on which students will have equal representation with the other members of the committee;

2. The facility shall provide free recreational time for students;

3. The facility shall be constructed in the general area of the Student Union Building; and

4. The student contribution shall not exceed $925,000.

* The $925,000 figure represents one-third of the estimated cost of the pool. Students' Council will seek a commitment from UBC's Board of Governors for an additional third and the remainder will be raised in a fund drive.

A possible site for the pool is the small parking lot immediately west of the existing, open-air Empire Pool, built in 1954 for the British Empire Games, held that year in Vancouver.

Students will also vote on a proposal to eliminate from the AMS constitution a clause which prevents campus political clubs from sponsoring candidates for student government posts.

In the election for student Senators, voting will take place for two of the four seats to be filled. Elected by acclamation are Mr. Colin MacKenzie, an Education student, who replaces Mr. Leo Fox as a Senator-at-large, and Mr. Fred Andreone, who will sit on Senate as a representative of the Faculty of Applied Science.

Two students will contest a Faculty of Arts seat now held by Mr. Gary Letcher. Nominated are Mr. Jay Munsie and Mr. John D. MacLachlan.

Three students are contesting a Graduate Studies seat on Senate now held by Mr. Steve Garrod. They are Mr. Sergei J. Rosval, Mr. Alan E. Davis and Mr. James A. McEwen.

Three persons are contesting the AMS "Ombudsperson" position. They are Miss Coreen Douglas, Mr. Douglas B. MacKay and Mr. David Varnes.

The position of Co-ordinator of Activities went by acclamation to graduate student Robert Angus. Arts student Rory Ralston is the new AMS Internal Affairs Officer, also by acclamation.

SPECIAL PROGRAMS

CONTEMPORARY THOUGHT IN SCIENCE: THE MIND/BRAIN OF MAN – 9 Thursdays, Oct. 5–Nov. 30, 8 p.m., Vancouver Public Library, 750 Burrard St. A series of lecture-discussions with leading brain research scientists and related investigators. Topics will include: brain waves origin and meaning; stages of sleep and dream recall; physiological correlates of memory; sex differences, sexuality and the brain.

BODY-BRAIN AND EXTRA-SENSORY PERCEPTION: IMPLICATIONS FOR THE NATURE OF MAN – Friday, Nov. 24, 8:30 p.m., Hebb Lecture Theatre, UBC. Dr. Charles T. Tart, University of California, Davis and noted for research and scientific study of states of consciousness.

THE 20TH CENTURY MUSIC SERIES – 4 Thursdays, Oct. 5–19, Nov. 30, Dec. 15, 8 p.m., Maritime Museum. Lectures in conjunction with the Vancouver Symphony Orchestra 20th Century Series.

IDEAS AND BOOKS – Informal seminars on issues of our times. Topics:

Alternatives to the Technological Society – 4 Tuesdays, Oct. 3–24, 8 p.m., UBC.

The Limits to Growth – 4 Tuesdays, Oct. 3–24, 8 p.m., UBC.

The Politics of Ecology – 4 Tuesdays, Oct. 31–Nov. 21, 8 p.m., Hycroft.

The Radicalizing of Quebec – 4 Tuesdays, Oct. 31–Nov. 21, 8 p.m., UBC.

LAW REFORM AND FAMILY LAW: A WORKSHOP – 4 Wednesdays, Oct. 11–Nov. 1, noon, Vancouver Public Library, 750 Burrard St.

LOCAL HISTORY: ARCHIVAL METHODS FOR THE AMATEUR HISTORIAN – 5 Thursdays, Oct. 19–Nov. 16, 8 p.m., Vancouver City Archives.

UTILIZING THE BUSINESS LIBRARY EFFECTIVELY: RESEARCH AND RESOURCES – Wednesday, Oct. 18, 9 a.m.–4:30 p.m., Vancouver Public Library.

ANIMALS WITHOUT BACKBONES – 6 Mondays, Oct. 23–Nov. 27, 8 p.m., Vancouver Public Aquarium.

ANTHROPOLOGY FILM SERIES – 5 Tuesdays, Oct. 3–Nov. 28, 7:30 p.m., National Film Board Theatre, 1155 West Georgia St.

NEW APPROACHES TO WORKING WITH VOLUNTEERS: AN INSTITUTE – Wednesday and Thursday, Nov. 29 and 30, 9:30 a.m.–4:30 p.m., Jewish Community Centre, 950 West 41st Ave. Special program with Dr. Eva Schindler-Rainman, internationally-known consultant to voluntary organizations, business, government and educational institutions.

FRASER VALLEY LAND USE -- WHOSE CONCERN? – Wednesday, Oct. 18, 9 a.m.–5 p.m., Town & Country Motor Inn, Delta.

THE DAYTIME PROGRAM

DESIGN AND INTERIORS – 8 Mondays, Sept. 25, 1:30 p.m., Vancouver Public Library.

CONVERSATIONS ABOUT MUSIC – 6 Tuesdays, Sept. 26, 1:30 p.m., University Hill United Church, 5375 University Blvd.

THE FEMININE EXPERIENCE: NOVELISTS AND SENSIBILITIES -- 7 Tuesdays, Oct. 3, 10 a.m., Vancouver Public Library.

LEARNING THROUGH PLAY IN EARLY CHILDHOOD – 7 Tuesdays, Oct. 17, 1:30 p.m., Kitsilano Public Library.

CONTEMPORARY ANTHROPOLOGY AND THE NATURE OF HUMAN NATURE – 10 Tuesdays, Sept. 19, 1:30 p.m., International House, UBC.

THE PSYCHOLOGY OF CREATIVE THINKING – 10 Tuesdays, Sept. 26, 10 a.m., International House, UBC.

DEVELOPING PERSONAL POTENTIAL, Part I – 4 Wednesdays, Oct. 11, 9:30 a.m., Centre for Continuing Education, UBC.

DEVELOPING PERSONAL POTENTIAL, Part II – Monday, Wednesday & Thursday, Nov. 6, 8 and 9, 9:30 a.m., Centre for Continuing Education, UBC.

MYTHS OF MAN: LEGENDS AND FICTIONS – 8 Wednesdays, Sept. 27, 10 a.m., Hycroft, 1489 McRae.

AN INTRODUCTION TO THE STUDY OF ENGLISH LITERATURE – 10 Wednesdays, Sept. 27, 1:30 p.m., International House, UBC.

ON BECOMING HUMAN: THE PRACTICAL WISDOM OF TIBETAN BUDDHISM – 5 Wednesdays, Oct. 11, 10 a.m., Vancouver Public Library.

THE INTERNATIONAL SCENE -- 8 Wednesdays, Oct. 4, 1:30 p.m., Vancouver Public Library.

GARDENING THROUGH THE SEASONS, Series II – 6 Wednesdays, Oct. 4, 10 a.m., Horticultural Greenhouses, UBC.

THE PERCEPTIVE FILMGOER -- 6 Wednesdays, Oct. 4, 1:30 p.m., National Film Board, 1155 West Georgia.

KEEPING A JOURNAL – 8 Wednesdays, Oct. 4, 1:30 p.m., University Hill United Church, 5375 University Blvd.

HELEN: THE FACE THAT LAUNCHED A THOUSAND SHIPS – 12 Thursdays, Sept. 21, 1:30 p.m., University Hill United Church.

ANGER AND AGGRESSION – 5 Thursdays, Oct. 19, 10 a.m., Vancouver Public Library.

CHINA IN PERSPECTIVE: CONTINUITY AND CHANGE – 5 Thursdays, Oct. 5, 1:30 p.m., Vancouver Public Library.

HERITAGE 300 YEARS OF DEVELOPMENT IN CANADIAN ART – 8 Thursdays, Sept. 21, 1:30 p.m., International House, UBC.

SACRED BEAUTY: MAN'S RELIGIOUS EXPLORATIONS IN ART AND ARCHITECTURE – 9 Thursdays, Sept. 28, 2 p.m., Vancouver Public Library.

EDUCATING TODAY'S CHILD: ALTERNATIVES AND INNOVATIONS – 6 Thursdays, Oct. 5, 10 a.m., Vancouver Public Library.

CONTEMPORARY YOUTH CULTURE: ALIENATION AND ADJUSTMENT – 6 Thursdays, Oct. 5, 1:30 p.m., Vancouver Public Library.

INTRODUCTION TO ECONOMICS – 10 Thursdays, Sept. 21, 10 a.m., International House, UBC.

EFFECTIVE STUDY – 4 Saturdays, Nov. 18, 10 a.m., Vancouver Public Library.

PARENTING SKILLS FOR THE NEW FAMILY – Public Lecture Thursday, Nov. 9, 8 p.m., Unitarian Church, 949 West 49th. Workshop Saturday, Nov. 11, 9:30 a.m., Centre for Continuing Education, UBC.

OPTIONS FOR WOMEN – 6 Tuesdays, Sept. 19, 9:30 a.m., Centre for Continuing Education, UBC.

WOMEN'S RESOURCES CENTRE – a new entity to provide a comprehensive and co-ordinated approach to programs for adult women who find themselves thrust into changing societal roles and who are seeking opportunities for personal growth. For information call 228-2181, local 273.

PEOPLES AND CULTURES

GREAT CIVILIZATIONS OF THE ANDES – 8 Thursdays, Oct. 5, 7:30 p.m., Vancouver Centennial Museum.

PEOPLES, CULTURES AND PLACES – 10 Wednesdays, Oct. 4, 8 p.m., UBC.

LIFE IN THE SOUTH PACIFIC: THE LAU OF MALAITA – 5 Mondays, Oct. 16, 7:30 p.m., Kitsilano Library.

ARCHAEOLOGY OF B.C. – 8 Wednesdays, 8 p.m., Oct. 11, Archaeology Lab., UBC.

EXPLORATIONS IN VISUAL COMMUNICATIONS: STILL PHOTOGRAPHY AND PERCEPTION OF SOCIAL LIFE – 6 Thursdays, Oct. 19, 8 p.m., UBC.

SOCIAL PARAMETERS OF THE CHINESE REVOLUTION – 8 Tuesdays, Oct. 10, 7:30 p.m. Kitsilano Library.

INTRODUCTION TO EAST ASIA – 27 Tuesdays, Sept. 12, 7 p.m., UBC.

THE CHANGING CHURCH IN LATIN AMERICA – 6 Tuesdays, Oct. 3, 8 p.m., Lutheran Campus Centre, UBC.

Centre Offers 163 Courses

UBC's Centre for Continuing Education is offering 163 non-credit courses in the humanities, creative arts, social sciences and public affairs in its Autumn 1972 Program beginning in September and October.

A brochure with complete descriptions of courses listed on this page and registration forms is available from the Centre at 228–2181.

Among highlights this autumn are: an innovative Women's Resources Centre aimed at providing a comprehensive and co-ordinated approach to programs of special interest to women; several distinguished visiting lecturers, including Dr. Charles T. Tart, psychologist, University of California at Davis, noted for his scientific study of states of consciousness; Dr. Eva Schindler-Rainman, behavioral scientist, known internationally for her work as consultant to voluntary organizations, business, government and educational institutions; Dr. Thomas Szasz, professor of psychiatry, State University Hospital, Syracuse, N.Y., author of *The Myth of Mental Illness* and *The Manufacture of Madness*; a new program on life in the ocean, Animals without Backbones; a music lecture series in conjunction with the Vancouver Symphony Orchestra's 20th Century Series; expanded studio courses in the creative arts; two new courses in the Centre's continuing China Program – Social Parameters of the Chinese Revolution and China in Perspective: Continuity and Change, and a course on City Politics using Vancouver as a laboratory and the '72 municipal elections as an educational experience.

The Centre for Continuing Education is also offering continuing professional education courses this autumn in engineering, law, education, social work, forestry, criminology, human relations, aging, food science, architecture, community and regional planning, and agriculture. For professional and technical course calendars and announcements, telephone the Centre.

SOCIAL IDEAS AND ISSUES

THE PROSPECTS FOR ANARCHISM – 8 Wednesdays, Oct. 4, 8 p.m., Lutheran Campus Centre, UBC.

THE CONSEQUENCES OF CORPORATIONS – 6 Wednesdays, Oct. 11, 8 p.m., UBC.

COMPUTERS AND SOCIETY – 8 Tuesdays, Oct. 3, 8 p.m., UBC.

ON INTUITION AND INTROSPECTION – 6 Thurs., Oct. 5, 8 p.m., UBC.

HUMAN BEHAVIOUR

INTRODUCTION TO PSYCHOLOGY – 16 sessions, Monday Oct. 16, 8 p.m., UBC.

THE PSYCHOLOGY OF WOMEN – 3 Tuesdays, Nov. 14, 8 p.m., Vancouver Public Library, 1 Saturday, Dec. 2, 10 a.m., Centre for Continuing Education, UBC.

ABNORMAL PSYCHOLOGY – 16 sessions, Thursday, Oct. 12, 8 p.m., UBC.

REWARD AND PUNISHMENT: BEHAVIOUR MODIFICATION IN HOME AND SCHOOL – 8 Thursdays, Oct. 12, 7 p.m., UBC.

HUMANITIES

LOVE AND SEX VICTORIAN STYLE –8 Thursdays, Oct. 5, 8 p.m., UBC.

VOICES FROM ISRAEL: AN INTRODUCTION TO CONTEMPORARY HEBREW LITERATURE – 8 Tuesdays, Oct. 3, 8 p.m., Jewish Community Centre, 950 West 41st.

RUSSIAN LITERATURE AND CULTURE: THE CONTEMPORARY SCENE AND ITS BACKGROUND – 10 Tuesdays, Oct. 3, 8 p.m., UBC.

THE FEMININE EXPERIENCE: NOVELISTS AND SENSIBILITIES – 7 Tuesdays, Oct. 3, 8 p.m., UBC.

THE VOICE OF THE SHAMAN IN CANADIAN POETRY: VISION AND VIGOR IN THE LAST 50 YEARS – 10 Thurs., Oct. 5, 8 p.m., UBC.

SCIENCE AND MATHEMATICS

ON THE SHOULDERS OF GIANTS: THE GREAT ASTRONOMERS – 6 Mondays, Oct. 16, 8 p.m., H.R. MacMillan Planetarium.

BIRDS IN MIGRATION – 7 Saturdays, Sept. 23, 10 a.m., UBC.

ADVANCED STATISTICS – 12 Mondays, Sept. 25, 8 p.m., UBC.

THE CITY

CITY POLITICS – ELECTION '72 – 5 Mondays, Nov. 20, 7:30 p.m., Room 211, Buchanan Bldg., UBC, and various campaign headquarters.

CITIES IN THE WILDERNESS – 6 Mondays, October 16, 8 p.m., Vancouver Public Library.

ARCHITECTURE IN THE CITY – 5 Thursdays, Oct. 5, 7:30 p.m., Gastown.

THE CREATIVE ARTS

CLASSICAL GUITAR FOR BEGINNERS – 10 Tuesdays, Oct. 3, Section 1, 8–9 p.m., Section 11, 9:15–10:15 p.m., UBC.

VOICE CLASS – 10 Tuesdays, Sept. 26, 8 p.m., UBC.

RENAISSANCE VOCAL MUSIC – 10 Tuesdays, Sept. 26, 8 p.m., UBC.

YIN-YANG APPROACH TO DRAWING AND PAINTING – 8 Wednesdays, Oct. 11, 7 p.m., UBC.

PAINTING: ADVANCED – 8 Thursdays, Oct. 19, 8 p.m., UBC.

DRAWING: A NEW WAY OF SEEING – 10 Tuesdays, Oct. 3, 8 p.m., UBC.

FIGURE DRAWING: ADVANCED – 10 Wednesdays, Oct. 4, 8 p.m., UBC.

HISTORY OF WESTERN ART -- 27 Mondays, Sept. 11, 7 p.m., UBC.

THE PHOTOGRAPHER'S EYE: INTRODUCTORY CREATIVE PHOTOGRAPHY WORKSHOP – 10 Tuesdays, Oct. 3, 8 p.m., UBC.

THE PHOTOGRAPHER'S EYE: ADVANCED CREATIVE PHOTOGRAPHY WORKSHOP – 10 Thursdays, Oct. 5, 8 p.m., UBC.

FILM MAKING I – 10 Mondays, Sept. 25, 8 p.m., UBC.

FILM MAKING II – 10 Thursdays, Sept. 28, 8 p.m., UBC.

24 FRAMES PER SECOND: PERSONAL FILM MAKING – 10 Thursdays, Sept. 28, 7:30 p.m., UBC.

TAPESTRY AND CREATIVE WALL HANGINGS WORKSHOP – 10 Tuesdays, Oct. 3, 7 p.m., UBC.

ADULT ACTING: INTRODUCTORY – 8 Wednesdays, Oct. 4, 7:30 p.m., UBC.

WEEKEND IN CREATIVE REDISCOVERY: A PERCEPTION WORKSHOP – Friday, Sept. 22, 8 p.m., Saturday, Sept. 23, 10 a.m.–7 p.m., Sunday, Sept. 24, 11 a.m.–3 p.m., UBC.

IMPROVISATION AND DRAMA GAMES – Saturday, Sunday, Oct. 7 & 8, 9:30 a.m.–4:30 p.m., UBC.

AUTHENTIC MOVEMENT: WHAT DO OUR BODIES SAY THAT WORDS DO NOT? – Monday – Friday, Sept. 11–15, 3:30–5:30 p.m., UBC.

EXPLORATIONS IN AUTHENTIC MOVEMENT – Mondays & Thursdays, Oct. 2, 1–3 p.m., UBC.

NATIONAL AND INTERNATIONAL AFFAIRS

CHINA IN PERSPECTIVE: CONTINUITY AND CHANGE – 5 Mondays, Oct. 2, 8 p.m., Delbrook Secondary School, North Vancouver.

THE INTERNATIONAL SCENE: UBC – 8 Thursdays, Oct. 5, 8 p.m., UBC.

THE INTERNATIONAL SCENE: NORTH SHORE – 8 Wednesdays, October 4, 8 p.m., Delbrook Secondary School, North Vancouver.

THE INTERNATIONAL SCENE: RICHMOND – 8 Mondays, Oct. 2, 8 p.m., Richmond Secondary School.

COMMUNICATIONS AND LANGUAGE PROGRAMS

GENERAL SEMANTICS AND THE LANGUAGE OF POLITICS AND ADVERTISING – 8 Thursdays, Oct. 5, 8 p.m., Vancouver Public Library.

POPULAR ART AND CULTURE: PROBLEMS OF COMMUNICATION – 8 Mondays, Oct. 16, 8 p.m., UBC.

POLITICS OF MEDIA – 6 Mondays, Oct. 23, 8 p.m., UBC.

CHINESE: BEGINNING MANDARIN – 40 sessions, Mondays & Thursdays, Oct. 2, 7 p.m., UBC.

COURSES IN WRITING

INTRODUCTORY CREATIVE WRITING WORKSHOPS – Section I – 10 Tuesdays, Oct. 3, 8 p.m., UBC. Section II – 10 Wednesdays, Oct. 4, 8 p.m., UBC.

WORKSHOP IN POETRY WRITING FOR PUBLICATION – 10 Mondays, Oct. 2, 8 p.m., UBC.

WRITING IMPROVEMENT COURSES – Several sections begin the week of Oct. 9, 10 sessions each.

READING AND STUDY SKILLS CENTRE

READING IMPROVEMENT COURSES – Several sections begin the week of Oct. 9, 10 sessions each.

EDUCATIONAL TRAVEL PROGRAMS

ARCHAEOLOGY TOUR OF SOUTH & CENTRAL AMERICA – Dec. 15, 1972–January 7, 1973.

INDIA – December 15, 1972–January 6, 1973; **THE SILK ROUTE TO SAMARKAND** – May, 1973; **SCANDINAVIAN STUDY TOUR** – May, 1973; **JAPAN** – May, 1973; **CHINA** – Spring or Summer, 1973; **SOUTHEAST ASIA** – Summer, 1973; **SOUTH PACIFIC** – July and August 1973; **UNITED KINGDOM** – July and August, 1973; **CLASSICAL GREECE II** – May–June, 1973; **EAST AFRICA** – July, 1973.

PROFESSIONAL AND TECHNICAL PROGRAMS OPEN TO OTHER INTERESTED PERSONS

AN INTRODUCTION TO THE PSYCHOLOGY OF THE AGING – 5 Tuesdays, Nov. 7, 4 p.m., Shaughnessy Hospital.

BEGINNING WORK WITH GROUPS – 6 Tuesdays, Oct. 10, 11:30 a.m., Family Service Centres Board Room.

THE COMMUNITY SELF-HELP MOVEMENT – Thursday, Oct. 12, 8–10 p.m., and Friday, Oct. 13, 9 a.m.–5 p.m., UBC.

A COGNITIVE EXPLORATION OF THE HUMANISTIC GROUP MOVEMENT – 5 Tuesdays, Oct. 17, 8 p.m., UBC.

INSTITUTE: GROUP LEADERSHIP – THEORY AND TECHNIQUES – Wednesday, Sept. 27, 7:30 p.m., Thursday, Sept. 28, 9 a.m.–4:30 p.m., Friday, Sept. 29, 9 a.m.–4:30 p.m., UBC.

REFLECTIONS ON BUILDINGS AND THE CITY: THE REALISM OF THE PARTIAL VISION – Friday, Oct. 27, 3 p.m., UBC.

FORESTS, FISH AND WATER (Phase II) – Thursday, Friday and Saturday, Dec. 7–9, UBC.

THE ECOLOGY OF FORESTRY (Part II) – 7 Thursdays, Oct. 12, 4 p.m., Vancouver Public Library.

CHILDREN WITH SPECIAL NEEDS – 8 Wednesdays, Oct. 11, 4:30 p.m., UBC.

EARLY RECOGNITION OF LEARNING POTENTIAL: THE GIFTED CHILD – 8 Thursdays, Oct. 12, 7 p.m., UBC.

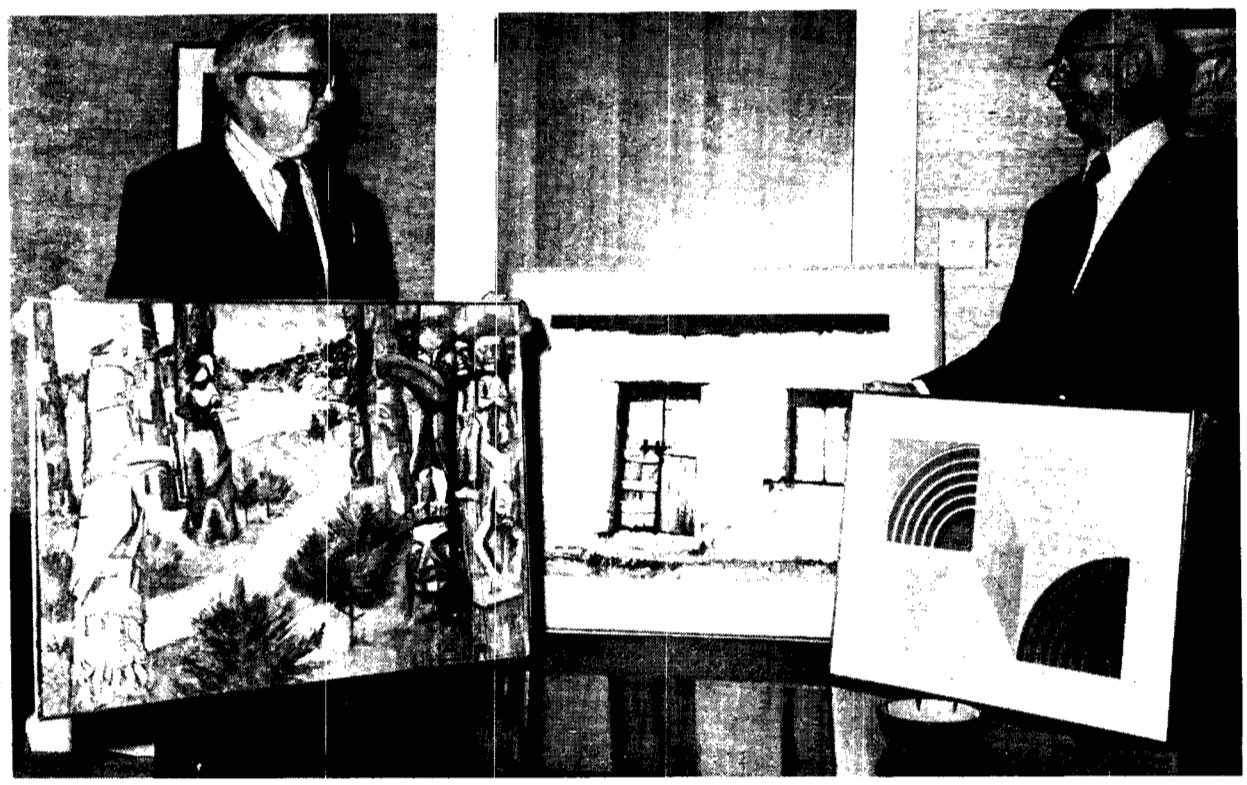
SEMINAR ON GROUP INTERACTION – 10 Thursdays, Oct. 5, 4:30 p.m., UBC.

LEARNING THROUGH PLAY IN EARLY CHILDHOOD – 7 Wednesdays, Oct. 18, 8 p.m., Handsworth Secondary School, North Vancouver.

THE CRIMINAL JUSTICE SYSTEM (Part II) – Wednesdays, Sept. 20–December 6, 7:30 p.m., UBC.

DEVIANCE AND CRIMINAL BEHAVIOUR – Tuesdays, Sept. 19–December 5, 7:30 p.m., UBC.

CATTLE BREEDING FOR MILK AND WEIGHT GAIN – 6 Tuesdays, Oct. 10, 8 p.m., Lord Tweedsmuir Secondary School, Cloverdale.



Picture by UBC Photo Department

UBC's PRESIDENT, Dr. Walter H. Gage, left, and Mr. H.B. "Bert" Smith, both members of the graduating class of 1925, view three paintings purchased recently by the class for UBC's art collection. President Gage holds a Cowichan river scene painted by Mr. Jack Shadbolt, while Mr. Smith holds a graphic by UBC artist Prof. Gordon Smith. In the background is a third painting, entitled "Stable Door," by Prof. Sam Black, of the Faculty of Education. Funds raised by the class also purchased a new piece of equipment for UBC's Crane Memorial Library for blind students. Picture by UBC Photo Department.

Class of '25 Does it Again

UBC's graduating class of 1925 has done it again. Made another class gift to the University, that is.

The class, which includes UBC's President, Dr. Walter H. Gage, decided to make another gift to the University when it held its 45th reunion in 1970.

Mr. H.B. "Bert" Smith, former assistant superintendent of schools in Vancouver and chairman of the class of 1925 reunion committee, also headed up a 14-member fund-raising committee.

The funds have been used to purchase a high-speed tape and cassette duplicator for the Crane Memorial Library for blind students in Brock Hall and three paintings by noted B.C. artists for the UBC art collection.

The high speed duplicator will allow books now recorded on 1,200-foot tape reels to be duplicated quickly onto cassettes for use in small, modern playback machines. The mailing, storing and carrying of the cassettes is more convenient than tape reels.

The three paintings purchased are by Prof. Sam Black and Prof. Gordon Smith, both of UBC's Faculty of Education, and Mr. Jack Shadbolt.

Members of the fund-raising committee, in addition to Mr. Smith, were: Mr. Stan Arkley, Mr. Heilly Arkley, Dr. Neal Carter, Mr. Lyle Atkinson, Mrs. Murray Brink, Mrs. R.L. McLeod, Mr. Harold Henderson, Mrs. Elsie Pain, Mrs. William Auld, Mrs. Howard T. Mitchell, Mrs. Walter Bennett, Mr. Kenneth Caple and Mrs. Phyllis Ross, former Chancellor of the University.

ON THE MOVE? LET US KNOW

If you're moving, don't leave *UBC Reports* behind!

To guarantee that *UBC Reports* goes where you go, please send us the following information: your name, new address and degree and year.

And please attach an address label from *UBC Reports* giving your old address.

If you are now receiving more than one copy of *UBC Reports*, please send us all address labels and we'll correct the situation.

Send the information to: *UBC Reports* Mailing Lists, 6251 N.W. Marine Drive, Vancouver 8, B.C.

UBC REPORTS Vol. 18, No. 12 — Sept. 28, 1972. Published by the University of British Columbia and distributed free. UBC Reports appears on Thursdays during the University's winter session. J.A. Banham, Editor. Louise Hoskin and Maureen Flanagan, Production Supervisors. Letters to the Editor should be sent to Information Services, Main Mall North Administration Building, UBC, Vancouver 8, B.C.

UBC Erosion Explained

The UBC Alumni Association has joined with the Vancouver Parks Board in a campaign to persuade the provincial government to finance a project to stop Point Grey cliff erosion.

The Association has thrown its support behind a Parks Board proposal for construction of a $250,000 sand-gravel protective fill along the most seriously threatened section of cliffs — about 3,700 feet. The proposal does not include a road along the beach.

As part of the campaign, the Association is currently preparing an illustrated brochure documenting the nature and extent of the erosion problem and explaining the proposed solution. It will be distributed to representatives of the provincial government and to other interested parties to develop support.

In recent years the cliffs have been eroding at a rate of 0.3 to 1.6 feet a year. Cecil Green Park, the Alumni Association headquarters, is seriously threatened with eventual collapse into the sea if the erosion is not stopped. Also threatened are the School of Social Work in the old Graham residence, the UBC President's Residence, and the former women's residences in the old Fort Camp area.

"We feel it would be irresponsible for government authorities to continue to neglect solving this ever-worsening erosion problem when public land and buildings are threatened," said Harry Franklin, Alumni executive director. "What we would like to see is the construction of a protective strip of sand and gravel that would both stop the cliff erosion *and* preserve the beach for recreation."

The Alumni Association supports the protective fill proposal as the most economical way of solving the problem. The fill would enable the cliffs to slump to their natural angle of repose, protect the base of the cliffs from further wave erosion and preserve the beach for recreational use.

The Association intends to seek, along with the Parks Board, a meeting with provincial Minister of lands Mr. Robert Williams to press for action on this problem.

Anyone interested in receiving a copy of the Alumni Point Grey cliff erosion brochure should contact the UBC Alumni Association, 6251 N.W. Marine Drive, Vancouver 8, B.C. (228–3313).

REVENUES EXCEED $100 MILLION

UBC received and spent more than $106,000,000 during the fiscal year that ended March 31, 1972, an increase of $15,354,280 or 16.9 per cent over the previous year.

It was the first year in UBC's history that its revenue and expenditure exceeded $100,000,000.

The higher income in the 1971-72 fiscal year was largely the result of a 15.6 per cent increase in the operating grant UBC received from the provincial government.

UBC received $53,492,293 for operating purposes in 1971-72, an increase of $7,212,423 over the previous year. The provincial government, however, recovers a major share of annual operating grants from Canada's federal government.

CAPITAL GRANT

UBC also received a $6,000,000 capital grant from the provincial government in 1971-72, the same sum it received the previous year. Other campus facilities are constructed with funds received from foundations, commerce and industry, students, alumni, faculty, private individuals and by borrowing.

UBC's total income and expenditure for the 1971-72 fiscal year is set out in the Consolidated Statement of Fund Transactions on the page opposite.

The difference between UBC's expenditures and revenues — $94,764 — is accounted for in the difference between fund balances at April 1, 1971, the beginning of the fiscal year, and March 31, 1972, the end of the fiscal year.

Expenditures in 1971-72 for academic purposes, including faculty salaries and payments to student assistants for teaching duties and laboratory supervision, totalled $49,844,898, a 12.8 per cent increase over the previous year.

Expenditures for research assisted or sponsored by government or industry were also up by 14.4 per cent from $10,835,998 in 1970-71 to $12,400,236 in 1971-72.

Student fees continued to decline as a percentage of total University operating funds. In 1970-71 fees made up 13.9 per cent of UBC operating revenues, while in 1971-72 they made up only 11.9 per cent.

The table at the bottom of the page opposite shows income and expenditure for six Ancillary Enterprise operations.

DEFICITS RECORDED

Two of UBC's ancillary services — the Bookstore and the Health Service Hospital — had deficits in the last fiscal year.

Two other ancillary services showed a surplus during the fiscal year. The surplus from Housing Services — $25,973 — is reserved for future debt repayment, while the $5,586 surplus from the University Research Farm at Oyster River on Vancouver Island is used to support research in the Faculty of Agricultural Sciences.

The debt repayment figures shown under three of the ancillary services are sums largely paid to Central Mortgage and Housing Corporation, which lent funds to UBC for the construction of food facilities and residences.

UBC's CONSOLIDATED STATEMENT OF FUND TRANSACTIONS

FOR THE YEAR ENDED MARCH 31, 1972

	OPERATING FUNDS			Endowment and Student Loan Funds	Capital Funds	Total of all Funds
INCOME	General Purposes	Specific Purposes	Total			
Operating and Capital Grants — Canada	$ —	$ —	$ —	$ —	$ 1,713	$ 1,713
Health Sciences Centre	—	—	—	—	1,532,424	1,532,424
TRIUMF Project	—	—	—	—	10,222,486	10,222,486
— British Columbia	53,492,293	—	53,492,293	—	6,000,000	59,492,293
Health Sciences Centre	—	—	—	—	41,329	41,329
Student Fees	10,038,248	—	10,038,248	—	—	10,038,248
Sale of Services and Rentals	2,058,032	1,191,954	3,249,986	—	—	3,249,986
Endowment Income	—	1,239,990	1,239,990	—	—	1,239,990
Sponsored or Assisted Research	—	12,847,743	12,847,743	—	—	12,847,743
Gifts, Grants and Bequests	—	2,531,417	2,531,417	529,634	3,341,832	6,402,883
Miscellaneous	488,886	130,212	619,098	—	533,169	1,152,267
Total Income	$66,077,459	$17,941,316	$84,018,775	$ 529,634	$21,672,953	$106,221,362
EXPENDITURE						
Academic	$47,716,337	$ 2,128,561	$49,844,898	$ —	$ —	$49,844,898
Library	5,010,141	58,250	5,068,391	—	—	5,068,391
Sponsored or Assisted Research	(139,082)	12,539,318	12,400,236	—	—	12,400,236
Administration	2,340,444	(5,100)	2,335,344	—	30,983	2,366,327
Student Services	997,627	427,145	1,424,772	—	—	1,424,772
Plant Maintenance, including Renovations and Alterations $1,647,399	8,690,418	108,741	8,799,159	—	—	8,799,159
Fellowships, Scholarships and Bursaries	931,242	1,713,190	2,644,432	—	—	2,644,432
General Expenses	136,113	148	136,261	1,680	53,311	191,252
Land, Buildings and Equipment	—	—	—	—	23,387,925	23,387,925
Total Expenditure	$65,683,240	$16,970,253	$82,653,493	$ 1,680	$23,472,219	$106,127,392
Ancillary Enterprises (Net)	188,734	—	188,734	—	—	188,734
	$65,871,974	$16,970,253	$82,842,227	$ 1,680	$23,472,219	$106,316,126
Excess of Income over Expenditure for the year ended March 31, 1972	$ 205,485	$ —		$ —	$ —	
Net Additions to Fund Balances	—	971,063		527,954	(1,799,266)	
Reclassification of Funds	—	(87,862)		87,862	—	
Fund Balances at April 1, 1971	135,957	7,922,030		18,758,028	11,066,166	
Fund Balances at March 31, 1972 as per Statement of Financial Position	$ 341,442	$ 8,805,231		$19,373,844	$ 9,266,900	

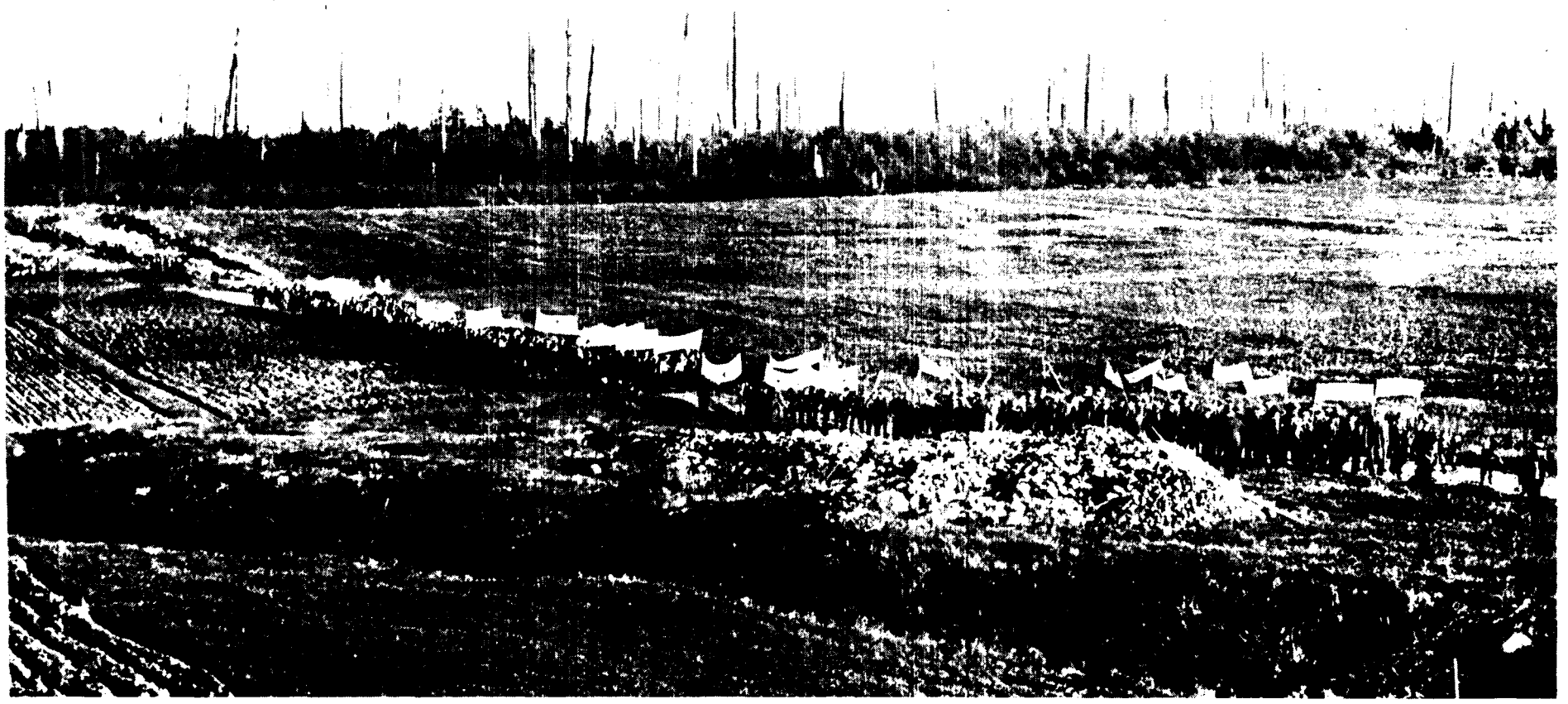
STATEMENT OF UBC's ANCILLARY ENTERPRISE OPERATIONS

FOR THE YEAR ENDED MARCH 31, 1972

INCOME	Bookstore	Campus Food Services	Residences Food Services	Housing Services	Health Service Hospital	University Farm Oyster River	Total all Sources
Sales	$1,896,016	$1,087,664	$ 252,949	$ 58,080	$ —	$167,514	$3,462,223
Rentals and Meal Passes	—	—	1,076,342	2,165,298	—	2,460	3,244,100
Hospital Revenue	—	—	—	—	166,692	—	166,692
	$1,896,016	$1,087,664	$1,329,291	$2,223,378	$166,692	$169,974	$6,873,015
EXPENDITURE							
Cost of Merchandise for Sale	$1,499,934	$ 381,086	$ 677,633	$ —	$ —	$ —	$2,558,653
Salaries and Wages	311,917	454,436	459,383	620,190	129,433	71,857	2,047,216
Fringe Benefits (including Board Allowance)	18,100	28,458	27,869	14,378	5,717	5,650	100,172
Dietary Service	—	—	—	—	20,579	—	20,579
Utilities	10,046	—	21,388	203,966	4,808	6,333	246,541
Other Operating	108,319	74,488	57,523	447,079	13,874	79,218	780,501
Development of Facilities	—	—	—	25,197	—	1,330	26,527
Debt Repayment, including Interest	—	149,196	85,495	886,595	—	—	1,121,286
	$1,948,316	$1,087,664	$1,329,291	$2,197,405	$174,411	$164,388	$6,901,475
Net Operating Margin for Year	($ 52,300)	$ —	$ —	$ 25,973	($ 7,719)	$ 5,586	($ 28,460)
Obsolete Stock Written Off (see note below)	$ 134,301	$ —	$ —	$ —	$ —	$ —	$ 134,301
Reserved for Future Debt Repayment	—	—	—	25,973	—	—	25,973
Excess of Income over Expenditure for the Year Ended March 31, 1972	($ 186,601)	$ —	$ —	$ —	($ 7,719)	$ 5,586	($ 188,834)

NOTE — Bookstore inventory includes textbooks at a cost of approximately $320,000 which are not currently saleable and are not returnable. The ultimate loss is not known since a portion of these books may be used as required texts in future years.

UBC ALUMNI Contact



Students march to Point Grey in the 1922 Great Trek to pressure the government to build the University. On Oct. 19, alumni, students and Great Trekkers will re-live the Trek with a vintage car parade to UBC.

REUNION DAYS HIGHLIGHT

Great Trek to UBC Re-enacted

A mini re-enactment of the Great Trek of 1922 is to be staged on Oct. 19 as the highlight of the 50th anniversary celebrations of that historic student campaign which was instrumental in having the University built at Point Grey.

The Great Trek anniversary will be one of the key features in Reunion Days '72.

A contingent of Great Trekkers, Alumni Association and Students' Council representatives will take part in the re-enactment, which will feature a parade of vintage cars and the engineering students' award-winning Wally Wagon from outside the gates to the University.

Some of the original organizers of the Great Trek will ride in the parade. They include Dr. and Mrs. Ab Richards, Mr. and Mrs. Aubrey Roberts, Mr. and Mrs. J.V. Clyne, and Mr. R.L. McLeod. The other special guests will include Alumni Association President Mrs. Frederick Field, Alumni executive director Harry Franklin and Alma Mater Society President Doug Aldridge.

After assembling at 12:30 p.m. at 10th and Sasamat, the parade will proceed up 10th to Blanca St., follow University Boulevard to the East Mall, north on the East Mall to Crescent Road, following it to the West Mall, left at University Boulevard and left again at the Main Mall to the Cairn.

There, at about 1 p.m., UBC President Walter Gage and Chancellor Nathan Nemetz will give the party an informal welcome and Dr. Ab Richards, who was AMS president in 1922, will seal a time capsule to be opened on the 100th anniversary of the Trek.

Following a parade around campus, the party will gather at Cecil Green Park for an informal tea hosted by the Board of Management of the Alumni Association.

On the following day, Friday, Oct. 20, there will be a dinner in the UBC Faculty Club at 7 p.m. for Great Trekkers, and members of the classes of 1923, '24, '25, and '26. The 50th anniversary dinner will be highlighted by the presentation of the Greak Trek Award for 1972.

A series of other social functions will be held for other classes as part of Reunion Days '72. A men's golf tournament will be held at McCleery Golf Club on Oct. 6 and a week later, on Oct. 13, a women's golf tournament will be held at the same club.

Saturday, Oct. 21, will be the day when graduates will renew their ties with UBC. Reunions have been set on that day for the classes of 1927, '32, '37, '42, '47 and '52. Separate functions will be held for '47, '57, and '62 Applied Science, '52 Physical Education, '57 Architecture, '57 and '62 Pharmacy, '57 Law, '57 Nursing and '62 Forestry.

In the evening, a Reunion Days dinner will be held in the Faculty Club and a ball will follow in the Graduate Students Centre.

For further information call the Alumni office: 228–3313.

Sports Program For Young Alumni

The Young Alumni Club is offering an expanded program for the 1972-73 year.

The club is organizing a sports program involving squash, badminton, curling, hockey and skiing. For the latter sport, the club offers a pre-ski exercise program and ski trips.

All this is in addition to the regular Thursday and Friday evening informal pub sessions at Cecil Green Park. On Thursdays, sessions run from 8 p.m. to midnight and on Fridays from 4:30 p.m. to 12:30 a.m.

Young Alumni Club memberships are available to alumni and students in their graduating year for a $4 fee.

Further information on the club and its programs may be obtained by contacting Mr. Perry Goldsmith, Alumni program director, at 228–3313.

Alumni Branches Continue Growth

The UBC Alumni branches program continues to expand with three meetings planned for the fall.

UBC President Emeritus Dr. Norman MacKenzie will speak to alumni gatherings in **Halifax** on Oct. 26 and in **Winnipeg** on Nov. 1.

On Nov. 4, UBC Chancellor Nathan Nemetz will be the special guest of a California alumni function in **Los Angeles**. And on Nov. 6, UBC Graduate Studies Dean, Dr. Ian McTaggart Cowan, will speak to Kootenay area alumni in Selkirk College, **Castlegar**.

I.C. "Scotty" Malcolm (left), Alumni Fund Director, is presented with an award for distinguished achievement in developing alumni support by American Alumni Council President Winston Forrest (centre) and AAC Board Chairman Robert Linson.