

# UNIVERSITY NEWS

*this month*

## In this issue

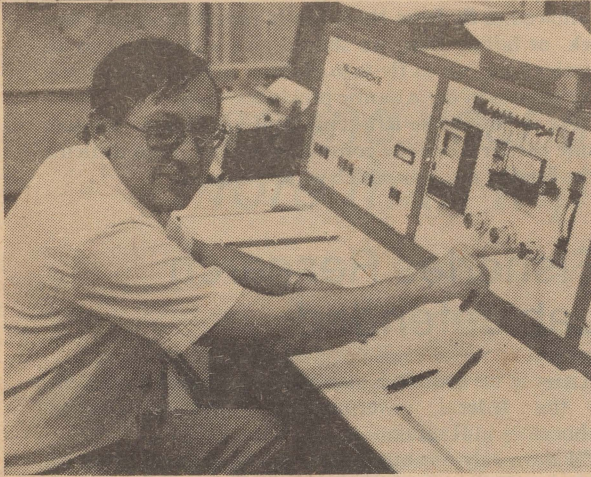
**MEDICINE at Dalhousie: A new section.**

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VOL. 1, NO. 2

DALHOUSIE UNIVERSITY

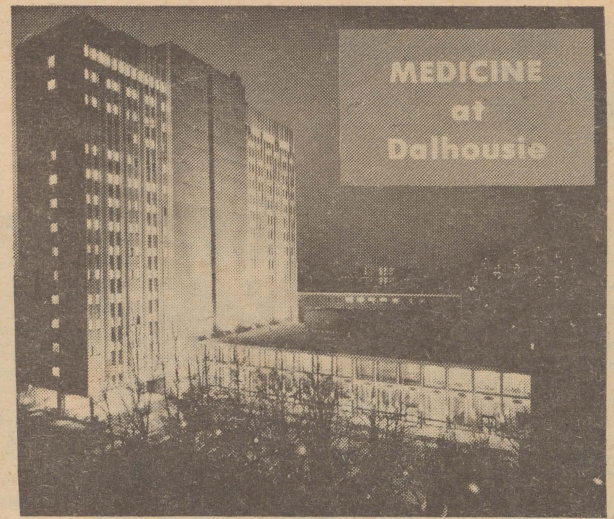
NOVEMBER, 1978



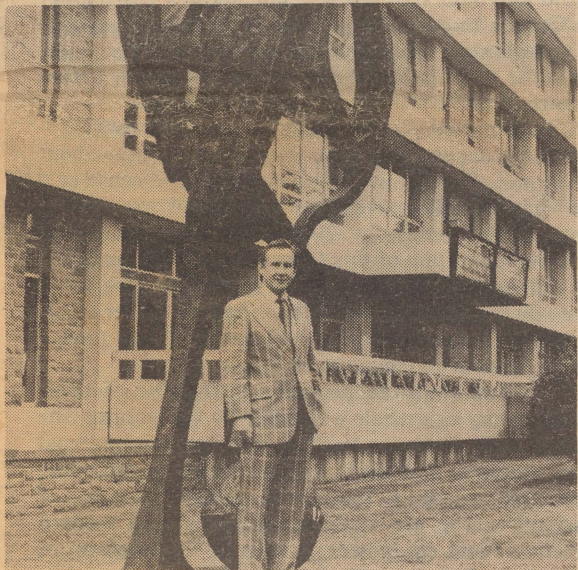
Dr. J. Holzbecher, research associate with the Trace Analysis Research Centre and a licensed operator of SLOWPOKE, is smiling. Why? **Page 3**



No, not a newfangled musical instrument—it's a horse's head, being displayed by Archives assistant John Bell. **Page 6**



Dr. Jide Osuntokun of the Nigerian Universities office was at Dalhousie last month. Why? **Page 5**



John W. Graham, general manager of the SUB, which celebrates its 10th birthday this month, the Twentieth Century Student (the statue, that is) and the building have weathered their first decade together well. **Page 7**



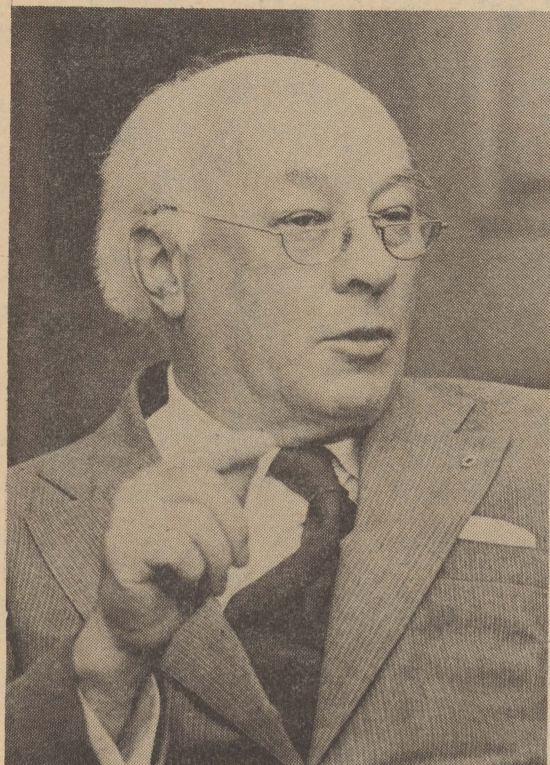
Where were the women in Nova Scotia history, Toni Laidlaw wondered. She and her colleagues decided to do something about the deficiency. **Page 25**



Robert Doyle runs the most comprehensive and therefore the best costume studies program in Canada. **Page 23**



Adolescent drug use in Nova Scotia? It's remarkably consistent. **Page 17**



Parliament made a mistake when it gave members of the public service, utilities and other essential services the right to strike, and that right should now be removed, Senator Henry D. Hicks said last month.

Speaking in the Senate of Canada after legislation had been passed ordering postal workers back to work, Senator Hicks, who is also president of Dalhousie, said the "right-to-strike" provision ought to be reassessed.

The text of his remarks is as follows:

"I want to speak, relatively briefly, on three matters today. The first of them has to do with the question of labour relations and strikes in the public service and in the great essential services, including transportation, communications and the great utilities, such as those which generate and distribute electricity. It is trite to point out that the situation in the 1970s is a very different one from that which obtained when the technique of strikes was developed during the last century in the industrial countries of the world. Our society has become vastly more complicated. We have all become more in-

## Public, essential services' right to strike should be removed

—Senator Hicks

terdependent upon one another, and we have all become far more dependent upon public utilities, communications, transportation, and so forth.

"Frankly, I now think, after having given a good deal of thought to the subject, that we made a mistake when we gave the right to strike to members of the public service. I think we should reassess our position in relation to that. True, it was always said that public servants, before they were given the right to strike, were not paid as well as people in the private sector. As against that, they had job security and generous pension allowances. Today, of course, the level of their salaries has caught up with and, in many cases, exceeded their opposite members in private industry, and the pension arrangements throughout our society have become, if not universal, inclusive of a very large proportion of our population. I think it ought to be a condition of employment in the public service, as well as in some of these other essential services, that there should not be a right to strike.

"Yesterday, for the eighth time, according to Senator Asselin, in as many years, we passed special legislation taking away the right to strike as soon as the weapon was resorted to by the postal workers. I think we should anticipate this in the future; that we should provide binding or compulsory arbitration, or some other technique, and do away with strikes in the public service and in the great essential services and utilities.

"I know that this proposal will be regarded by some as highly reactionary on my part. But I make it because I do not want to see the ascendancy of reactionary forms. Indeed, I make it because I think it may prevent a reaction which would be too extreme. History has shown that in times of disorder and chaos men have continually chosen order and security at the expense of individual and political liberties.

"I am afraid that if the representative parliamentary democratic process which we all believe in and value so highly in this country cannot keep the institutions of our society operating smoothly, including the relationship between management and labour, that even in a country like Canada people may choose an authoritarian government which will ensure order at the expense of liberty.

"That may seem a remote possibility to Canadians, but there has already been reference made in today's debate to the same sort of thing happening in the enlightened countries of Italy in supporting Mussolini and Germany in supporting Hitler within the lifetime and recollection of many of us here.

"So, I do not make this proposal because I want to be more reactionary. I make it because I think that by solving this problem now and giving the working people who are concerned alternative measures to ensure that they are treated fairly, paid reasonably and have reasonable working conditions, and so forth, and by doing so under our free society, we may prevent a more reactionary move—a move which, I am sure, none of us would approve of."

## "CP Air Halifax application should be granted"

Senator Hicks also urged the immediate granting of an application by Canadian Pacific Airlines to service Halifax.

"From a local point of view the recent strike of Air Canada pointed out the extreme isolation experienced by a province like Nova Scotia when Air Canada goes on strike. And whether or not we stop strikes in the public service, including the great transportation utilities like Air Canada, I think there should no longer be any delay in the granting of an alternate franchise for some other national carrier to fly into Halifax.

"I understand that there is an application on behalf of Canadian Pacific Airlines at present being considered. In my view it should be granted forthwith.

"In addition, I believe that some other carrier should be allowed to fly from Nova Scotia into Boston and New York, or failing that, we should give a franchise to an American airline to fly into Halifax and perhaps some other centres in the Atlantic provinces.

"We ought not be left dependent only on the services of one carrier when the consequences can be so difficult in the kind of world in which we live today."

## Fisheries Research Lab defended

Later in his speech, Senator Hicks came to the defence of the federal government's Fisheries Research Laboratory in Halifax.

"I have only one other subject I want to comment on, and that has to do with the restraints program of the government. I think that people generally recognize necessity for these restraints, and generally support the government in implementing them.

"I certainly recognize that this means that there have to be difficult decisions made, and that there are always going to be people who will be disappointed when projects in which they are particularly interested are curtailed, slowed down or delayed.

"But I do think that it is very shortsighted in a country like Canada to curtail expenditures in those areas that are important to the productive capacity of the country, and to the exploitation of our natural resources. I have an example to illustrate the point I am making.

"It is suspected that the Fisheries Research establishment in Halifax is going to be closed down or phased out of existence. Surely this does not make good sense at a time when Canada is trying to exert control over a much larger coastal zone—the 200-mile fishing zone—and when the reputation of this laboratory and its contribution to fishing techniques, the processing of fish foods and so on has been so great. I have had a number of letters written to me about this and I should like to quote a paragraph from one scientist who says:

... it should also be pointed out, that the scientific community as a whole will suffer by the closure. The laboratory here in Halifax has an international reputation as a result of its ongoing and outstanding research programs. There exists therefore a group of scientists who are working efficiently with modern methods and equipment to keep in the forefront of research. It seems utterly unthinkable that such a group would be split up and diversified when Canada already has far too few groups of this calibre.

And he also says that the library at this institution—... has an excellent collection of marine and food related journals which are not available ... elsewhere in the Halifax-Dartmouth area.

These journals are often consulted, of course, by many persons who are not members of the Fisheries Research Board. Another scientist writes to me—and I would point out that neither of these is employed by the Fisheries Research Board—and he says:

The work of the Halifax laboratory involves pure and applied biochemistry of fish and fish products, food processing technology, the development of fishing equipment and advice to industry. Referring to the biological and biochemical side of its work, ... the point should be made that although the laboratory is a relatively small one by federal standards its staff is a highly competent and internationally recognized one. In particular—

And then he names four scientists there—... are highly respected on the international scientific scene. To break up a group of this quality, whose work is important locally, nationally and internationally, is equivalent to vandalism.

That is what my correspondent says. Well, I do not know if it is as bad as that or not, but I think this is an example of trying to save a relatively small amount of money in an area where we may cut off research that will affect the productive capacity and the gross national product of the entire country."

## UNIVERSITY NEWS

UNIVERSITY NEWS is published by Dalhousie University.

Inquiries and contributions should be sent to The Editor, University News, Information Office, Old Law Building, Dalhousie University, 1236 Henry Street, Halifax, Nova Scotia, B3H 3J5; Tel: 902-424-2517.

Registered as third-class mail; permit number, Dartmouth, N.S. 59.

Following is the publishing schedule for the balance of 1978-79 for the monthly issues of **University News**:

Deadline	Date of issue
Nov. 24	Dec. 8
Jan. 12/79	Jan. 26
Feb. 9	Feb. 23
March 16	March 30
April 20	May 4

*Blood, coal, breast milk, aerosol spray, exhaust fumes, ocean dumping, cancer-treating gold . . .  
they all keep the Trace Analysis Research Centre busy.*

# SLOWPOKE no slouch

## *Second year's use more than tripled*

Use of the SLOWPOKE nuclear reactor at Dalhousie University increased almost four-fold in its second year of operation.

The reactor became operational in July 1976. In the 1976/77 operating year 1054 samples were irradiated; in 1977/78 the total went up to 3920.

A three-year National Research Council CORE grant of \$114,000 to support day-to-day operation of the facility was awarded to Dalhousie last spring.

The SLOWPOKE (Safe, Low Power, Critical Experiment) nuclear reactor at Dalhousie is one of only five in the country. The reactor was developed in Canada and acquired from Atomic Energy of Canada Ltd.

Although the reactor has a number of useful applications, the ease of operation (SLOWPOKE can be turned on and off at the flick of a switch) makes it particularly useful for neutron activation analysis.

In neutron activation analysis, elements in a sample absorb neutrons generated by SLOWPOKE and become unstable. Measurement of the energy produced by the unstable atoms permits both identification of the element and measurement of the quantity present.

One of the research projects headed by Dr. Douglas Ryan, director of the Trace Analysis Research Centre, involves the analysis of more than 20 trace elements in whole blood. The experiment has shown significant differences in the concentration of a number of elements in the blood of normal and multiple sclerosis patients.

Dr. A. Chattopadhyay is directing a number of research projects, one of which is a study of multi-element determination of low-sulphur, low-ash coals supplied by the Cape Breton Development Corporation.

Coal use is on the increase because of high oil prices, and as the amount of coal used increases, the amount of contaminants that can be released to the atmosphere also increases.

Because of the diversity of geologic origins of coal and because of interest in a large number of elements for assessing environmental health hazards arising from the use of coal, it is imperative to develop precise, accurate and sensitive multi-element methods for the analysis of coal and coal-derived products.

Instrumental neutron activation analysis methods have been developed for the determination of trace concentrations of 44 elements and methods are being extended to study the behaviour of trace elements in coal combustion, gasification and liquefaction processes.

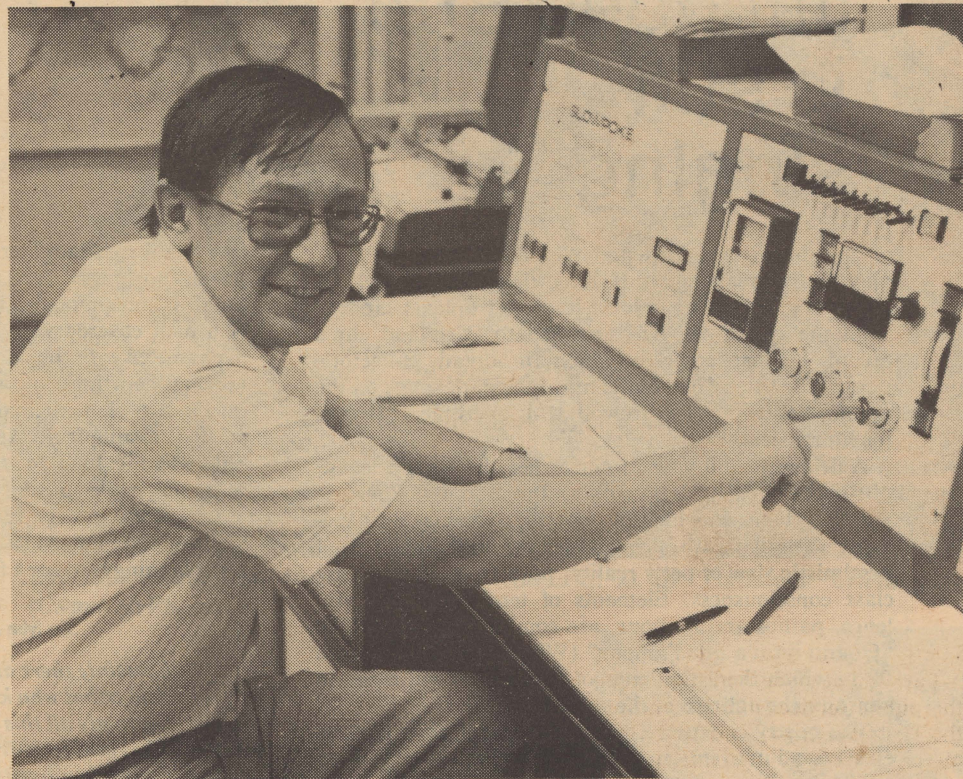
A related project also directed by Dr. Chattopadhyay investigates the transport of trace elements in the atmosphere.

An appreciable long-range transport of man-made sulphur has been reported in northern Europe. Sulphur dioxide and sulphate containing aerosol emissions from the U.K. and continental Europe are believed to contribute significantly to the sulphur deposited over southern Scandinavia.

A study on the long-range transport of trace heavy metals has been initiated in the SLOWPOKE laboratory.

Local sources of atmospheric emission are also being studied to determine the air quality of an urban environment. Emissions from coal and oil-fired power plants and motor vehicles are being characterized.

A third project directed by Dr. Chattopadhyay involves the translocation of trace elements in the marine environment. Interest in this field is primarily due to the growing concern about heavy metal contamination from ocean dumping.



**Dr. Jiri Holzbecher, one of the licensed reactor operators in the Trace Analysis Research Centre, at the control panel for SLOWPOKE. (Cameron Photo)**

**By Eric Cameron**

Proposed increased activities at the ocean bottom for mineral exploration have intensified the need for monitoring the total marine ecosystem.

Several approaches to the analysis of trace elements in sea water are being investigated using samples from the Saguenay Fjord and the Atlantic Ocean. Further development of instrumental neutron activation analysis methods will be carried out to measure trace element content of oceanic suspended matter, open-ocean waters, ocean-bottom sediments and biota.

Dr. M.S. DeWolfe of the Izaak Walton Killam Hospital for Children is using the SLOWPOKE facility to study low birthweight infants.

It has been suggested that low birthweight preterm infants may be especially vulnerable to deficiencies of certain trace metals such as copper, zinc and iron because two-thirds of these elements are transferred to the foetal body during the last 10 to 12 weeks of gestation.

The concentration of certain trace elements in breast milk and some milk formulae tend to be low, and in some cases unknown, so low birthweight infants may not obtain enough trace elements during the months immediately after birth and their development may be adversely affected.

Altogether there were 29 research projects using the SLOWPOKE reactor last year. The reactor was also used in the teaching program of a number of classes and there were nearly 100 interested visitors to the site.

SLOWPOKE users have required methods development by the reactor operators so that experiments can be carried out. One such study was undertaken for the Radiotherapy Department at Halifax Infirmary to estimate the feasibility of using the Dalhousie SLOWPOKE to produce radiogold in sufficient quantity to be used for the treatment of certain types of cancer.

In this type of cancer treatment, small "seeds" of pure gold encased in platinum are activated and implanted around the area to be treated (usually a skin cancer). It was determined that it would be quite feasible to produce the required radioisotope using the SLOWPOKE reactor.

Another set of instrumental neutron activation analysis methods were developed by the SLOWPOKE operators to help two Dalhousie geologists study the dispersal of fine-grained sediments in the outer continental margin.

Three distinguished foreign scientists visited the SLOWPOKE facility at Dalhousie for periods ranging from two weeks to three months last year.

Dr. Derek Gibbons, principal scientific officer with the United Kingdom Atomic Energy Authority, spent two weeks at Dalhousie last spring. Dr. Gibbons was on a two-month tour of the Canadian SLOWPOKE installations. Dalhousie was host institution for Dr. Gibbons' visit and made all the necessary arrangements.

Dr. Franco Girardi, head of the Radiochemistry Division, Joint Research Centre of the European Community, Ispra, Italy, worked with the SLOWPOKE personnel during the month of August.

Professor Sydney Katz of Rutgers University, Camden, New Jersey, was a visiting professor at Dalhousie for three months. Dr. Katz taught part of a graduate course on nuclear analytical chemistry, collaborated on several SLOWPOKE research projects, and used the reactor for his own research on multi-element determination in geological samples.

The high use of the reactor over the last year made it desirable to have access to the five available inner sample irradiation ports. Initially, it was financially practicable to connect only three of them. The last two ports were connected by way of a three-way diverter system which allows one controller to regulate three of the ports.

In collaboration with Atomic Energy of Canada Ltd. the SLOWPOKE operators developed a fast transfer cyclic activation system which will make possible the analysis of elements which give rise to very short-lived (less than 15 seconds) nuclides.

The fission power generated by SLOWPOKE last year increased from 9600 kilowatt hours to 16,616 kilowatt hours, even though since mid-January the reactor has been run at a power level of 10 kilowatts instead of the 20-kilowatt level which was used until then.

Roseann Runte pays tribute to "a dramatic and vibrant performer" who died last month. He has joined his friend, she says, but . . .

## Jacques Brel is still singing

"Jacques Brel is Alive and Well and Living in Paris" played a few years ago in Halifax when Jacques Brel was alive but ill and living in seclusion on a tropical island.

At the age of 49, Brel returned to Paris and cut a record, his last, copies of which are already collector's items. The title of one of the most poignant songs on the album, "Viellir" (To Grow Old), is as ironic as that of the hit musical.

A dramatic and vibrant performer, Brel left a legacy of songs replete with passion and tenderness. They are musical poems in which he presented an idealized version of beauty, truth, love and peace, juxtaposed with a pessimistic view of petty reality, poverty, wars and false class consciousness. Elements of tenderness and violence, pathos and humour, are combined in songs like "Quand on n'a que l'amour" (When Love Is All There Is) in which the artist sings of love which will cover in sunshine the ugliness of the suburbs.

The poetry is expressed in antitheses, "nous parlons en silence d'une jeunesse vieille" (We speak silently of an aging youth), and unexpected images, "les métros remplis de noyés" (the subways full of drowned folk). He likes plays on words like "où le lit tombe en tombe," which lose in the translation (where the bed becomes a tomb) as do the series of silvery, hissing sibilants and other sounds. To the haunting melodies, Brel adds his personal interpretation, at times gentle and caressing as a lullaby, and at others strident and martial when even the punctuation explodes like rocket shells.

His song, "To Grow Old," is composed of three verses or stanzas separated by the plaintive refrain: "To die is nothing. To die? What of it? But to grow old . . . ah, to grow old . . ." He imagines different kinds of death: as a soldier blushing at the ignominious cause for which he fought; as a debauched lover shuddering with pleasure and losing himself in time; as a quixotic clown laughing

(the proof that laughter can be a cause of death is that people no longer dare to laugh too much); as an unknown, anonymously, incognito like a synonym; as a rich man covered with honours, streaming money and asphyxiated with the odour of flowers; as a cancer victim lacking the will to continue; as a sick man sinking down into a cup of medicinal tea between two pills and the smell of rotting fruit. All these are preferable to growing old and ridiculous, to walking supported by women and to singing while spitting teeth.

Brel undoubtedly foresaw his death by cancer. In another song on the same album he says that the most terrible thing is to see a friend cry.

### To See A Friend Cry

*Certainly there are wars in Ireland  
And tribes who know no music  
Certainly all this lacks tenderness  
The American dream has come to an end  
Certainly money has no odour  
But that way we are not revolted  
Certainly we tread on flowers  
But . . . but . . . to see a friend cry . . .*

*Our bodies are declining  
And wilted while still standing  
Certainly women are unfaithful  
And birds are assassinated  
Certainly our hearts no longer take wing  
But . . . but . . . to see a friend cry . . .*

*Certainly the cities are burnt out, used up  
By children fifty-years-old  
We are powerless to help them  
And our loves suffer toothaches*

*Dr. Runte teaches French (comparative literature) at Dalhousie and is an expert on 18th century studies. She and her husband, Dr. Hans Runte, who is also a professor of French, host a half-hour radio show, The French Connection, covering French music, culture, anecdotes and announcements, on CHFX-FM.*

*Certainly times pass too quickly  
The subways are filled with drowned folk*

*Truth escapes us  
But . . . but . . . to see a friend cry . . .*

*Certainly our mirrors are correct  
They show we have neither the courage  
To be Jews  
Or the elegance  
To be Negro  
We think we are steel  
We are but blubber  
All these men are our brothers  
And we are no longer surprised  
That they shake our hand in love  
But . . . but . . . to see a friend cry . . .*

The Brel who once sang of sensual love, sang at last of friendship. In another sad melody, he sings to an old friend, Jojo with whom he spent many nights singing and reminiscing and who has passed away. Brel says, "Six feet under, Jojo, you are not dead. You are still singing and hoping. You are not dead, for I still love you." He apologizes for his commonplaces, for walking out amidst a population of amputees of the heart who once stretched out their hands too far. Brel sighs, "Jojo, I can no longer return home from nowhere. I am clad in our dreams and happy to know I am coming to join you, having taken the Olympia (a Parisian music hall) by storm one last time from the depths of the cemetery.

After years of silence, Brel returned one last time to the recording studio. His swansong is a self-conscious one. It is beautiful yet terrible to hear when we realize that his predictions came true. He did join his friend Jojo and he is still singing.

## The Rapprochements series

When Professor David Braybrooke made his presentation to a hearing of the Task Force on National Unity nearly two years ago in Halifax, he described himself as "le delegue d'un petit groupe de professeurs de l'universite Dalhousie qui visent aider la cause de l'unite nationale au moyen un peu insolite de lire Le Devoir."

In addition to himself, the core group for which he was speaking included Professors Tom Sinclair-Faulkner of the Department of Religion, Alasdair Sinclair of Economics, Bruce Stovel of English and Philosophy's Steven Burns.

The group, known as the Rapprochements Team, met weekly for discussion of articles in the French language press of Quebec, and drew on the expertise of other Dalhousie professors, among them Dr. J. Murray Beck

of Political Science and Dr. E. Craig MacDonald of the Institute of Public Affairs, when necessary to help to present their case to the public.

Clare Beckton of the Law School and Professor Theodore B. Ciuciura of Saint Mary's University also contributed.

The aim of the group, which has not been as active this year as it was in 1977 - 78, began to write "opinion" articles for the regional news media and University News.

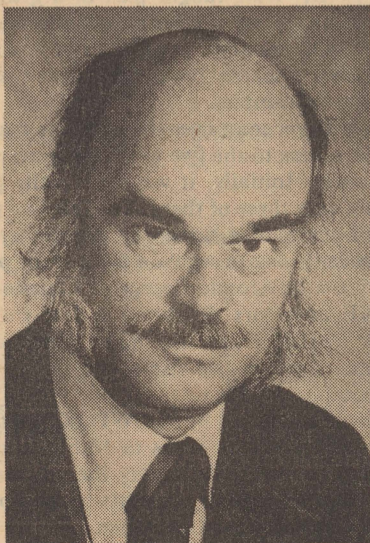
The Rapprochements Team are neither pro-French nor pro-English in their writings; rather they set out, as experts in a variety of fields, to clarify issues arising from the relations between Quebec and the rest of Canada.

Most of the articles written by the Rapprochements members were published in University News in 1977 - 78, two earlier pieces having been published in the Halifax daily papers.

Because of the interest shown in the Rapprochements series, the Information Office, which produces University News, gathered the articles together and published them as a reprint during the summer.

The reprint has been distributed to Members of Parliament, members of the Senate of Canada, the Canadian Philosophical Association and its Confederation Committee, libraries, university faculty clubs and regional and national (English and French) news media. In addition, a request for 200 copies from the Positive Action Committee, a national unity group, was filled. The reprint was also sent to selected areas in the Dalhousie community.

A limited number of copies of the reprint is available and may be obtained at the Information Office, in the Old Law Building on Studley campus.

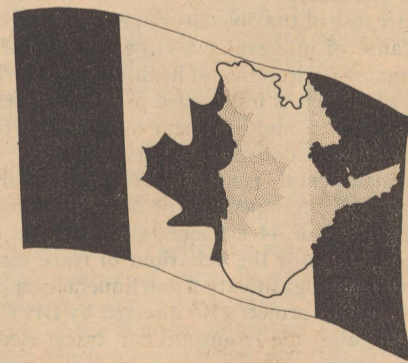


**Rapprochements'**  
**David**  
**Braybrooke**

**UNIVERSITY**  
**NEWS**

A REPRINT

### Rapprochements:



### Ideas that might bring us together . . .

. . . are sometimes ideas that defuse and thrust aside ideas that would push us apart.

The present collection of articles on the current crisis about Quebec and Confederation covers a lot of ground, some of it ground on which a lot of specific defusing work is called for.

No final answers appear; perhaps none is even approached. But the Rapprochements group and the Information Office of Dalhousie University, in bringing these pieces together, hope to have done something to create a climate and a perspective in which favourable answers can be sought.

—David Braybrooke

Tom Sinclair-Faulkner writes on **Catholic Action in Quebec** in the December issue of **University News** this month.

## Nigeria launches \$65 million crash program

By Gina Wilkins Slopek

"We call it the technical manpower crash program," said Dr. Jide Osuntokun in a press conference at Dalhousie last month to announce the Nigerian government's plans to educate about 2500 students at Canadian universities over a five-year period.

The total bill will be \$65 million. The full cost of educating the Nigerians will be paid by Nigeria, said Dr. Osuntokun, who stressed that the educational funds were not aid, and were intended to cover all educational costs, including living and travelling expenses. The moneys are derived from large profits the country has recently made in the oil industry.

According to the Nigerian official, the country's expanding development, especially in the oil industry, requires larger numbers of Nigerians to be trained in technical areas.

At present, the 13 universities in Nigeria cannot handle the numbers of students needed to be trained in order to produce a technologically progressive society, said Dr. Jide Osuntokun.

"Nigeria is not a rich country," he said, "but our recent luck with oil has placed us temporarily in a profitable position. We aim to invest these profits now into the education system, so our own people will be able to improve upon the economy in the future. Before our country can develop to its potential, we must have educated people to make our society more knowledgeable and mobile."

It is to this end that a three-pronged program is aimed. The first part of the plan, to which the \$65 million is dedicated, will focus on training undergraduate students in technical and professional fields such as engineering, medicine, management studies and law. The second part is aimed at improving the qualifications of teachers in Nigeria. Graduate students will be sent to Canada to study in master's and doctorate programs, of which there are few in Nigeria. Part three of the program is an attempt to have Canadian professors go to Nigeria to teach in the 13 colleges and universities there.

Staffing of Nigerian universities to date consists of 1,000 professors, but in order to meet future needs adequately for increased enrolment (Dr. Osuntokun predicts 200,000), 2,000 more professors will have to be found.



Dr. Jide Osuntokun and Dr. Guy R. MacLean at the Dalhousie briefing. (Cameron Photo)

According to Dr. J.E. Flint, director of the centre for African studies at Dalhousie, the response to a call for Canadian professors to take up teaching positions at Nigerian universities has been low.

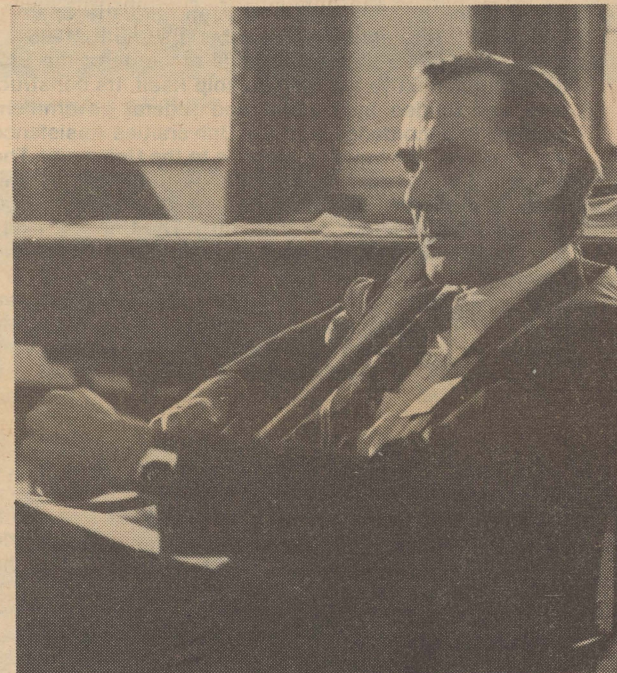
Referring to the decreasing demand for college professors in Canada recently, he stressed the Nigerian search as a "valuable opportunity" for unemployed Canadian professors to gain teaching experience overseas.

"Although the salaries are lower than in Canada, the many fringe benefits, such as nearfree housing and supplied cars, certainly raise the Nigerian standard of living to a fairly comparable level with Canada."

Dr. Osuntokun emphasized the possible cultural benefits to both Canada and Nigeria in the encouragement of student and teacher exchange programs.

But why Dalhousie? "As a product of Dal, I know how good it is," said Dr. Osuntokun, who was recipient of the first PhD in history here. Also, Dal is respected in the areas of law, the health professions, management studies, sciences, foreign policy studies and others that are of particular interest to the Nigerians.

Dr. Guy MacLean, vice-president (academic and research) also explained that Dalhousie has a tradition of cooperation with overseas countries and has developed strengths in a number of teaching areas that lend themselves to international students and faculty exchange programs.



Dr. John Flint (Wilkins Slopek Photo)

Dalhousie is not the only university selected by Nigeria to participate in its educational program. Apparently, at least 10 other universities across Canada have been selected.

## Year of accomplishments for Dalhousie's mathematicians

Dalhousie mathematicians were involved in a wide range of professional activities both on campus and farther afield last year.

The Mathematics Department annual report for 1977-78 details many of the accomplishments of the faculty members.

The Canadian Mathematical Bulletin is edited by Dr. Michael Edelstein and Dr. Heydar Radjavi here at Dalhousie.

Dr. W.R.S. Sutherland will soon start to edit the Applied Mathematical Notes, and the Dalhousie Journal of Undergraduate Mathematics will be edited this year by Dr. S. Swaminathan.

Dr. P.A. Fillmore was elected to the Council of the Canadian Mathematical Society and is a member of its research committee. He is on the editorial boards of the Canadian Journal of Mathematics and the Journal of Integral Equations and Operator Theory.

Dr. Michael Edelstein is chairman of the NSERC grant selection committee for scientific publications. Last year Dr. C.A. Field and Dr. Heydar Radjavi served on NRC grant selection committees.

Dr. Field was on sabbatical leave last year and held a Canada Council Leave Fellowship while at ETH-Zurich.

Dr. W.R. Smith, also on sabbatical, was an IBM World Trade Visiting Fellow at the IBM research laboratory in San Jose, California from July to December 1977. He spent the first five months of 1978 at Oxford University working in the Physical Chemistry Laboratory and the Mathematics Institute. During the summer he was a guest of the Polish Academy of Sciences and the Institute of Chemical Process Fundamentals at the Czechoslovakian Academy of Sciences.

Dr. W.R.S. Sutherland is an associate editor of the CORS section of INFOR, a SIAM visiting lecturer for 1978-79 and a member of the nomination committee for

the Canadian Mathematical Society.

The Atmospheric Environment Service of Canada awarded a seven-month contract to Dr. Jean Thiebaut to conduct a network design study.

Dr. Anthony C. Thompson was elected secretary of the Dalhousie Faculty Association. He is also a member of the Provincial Task Force on High School Curriculum.

Dr. R.P. Gupta serves on the Board of Directors of the Statistical Society of Canada. He is associate editor of the Journal of Statistical Inference and Planning.

Dr. Hermann Brunner has become a member of the Advisory Board of Computing (Archiv fur Informatik und Numerik), Vienna. Dr. Kenneth Dunn was elected to the Council of the Canadian Mathematical Society.

New appointments in the Department of Mathematics include Dr. Janice Richman, Dr. John Van Rees, and Dr. Arthur Sedgwick.

## A decade of service

# Ten SUBstantial Years

*What do Pierre Elliot Trudeau, Richard Nixon and the SUB all have in common? They all started their "illustrious" careers in 1968, that's what. Now Nixon has fallen by the wayside and Pierre seems to be plummeting fast, but the SUB is still flying high. As a matter of fact, it just celebrated its tenth year of unchallenged supremacy as Dal's centre for student activities.*

Tenth anniversary celebrations took place last week. They included a backgammon tournament, an open house, an Irish Super SUB Night, "Flowers and Beads Night" (a 60s-style record hop), and a Saturday Super SUB night, all of which combined to make the party a great success.

Planning for the construction of the SUB began as early as 1957 when Murray Fraser, now dean of law at University of Victoria and formerly a professor in the Dal law school, and David Matheson, now a Montreal lawyer, embodied the proposal for the building in their campaign platform for president and vice-president of the Student Union. It wasn't until ten years later that construction of the building actually began, though, and the opening ceremonies took place on November 8, 9 and 10, 1968.

The SUB is the largest physical resource of the Student Union, next to the membership itself. Its construction was funded by student and federal government monies. In accordance with the Universities Assistance Act, however, the building belongs to the University. The Student Union covers the mortgage payments (it still owes about \$700,000) and the costs of internal operations (such as salaries of SUB staff). The University has full responsibility for operating costs like heating and lighting.

The SUB is the centre for most of the activities sponsored by the Student Union. Movies, pubs, lectures, discos, coffee houses and dances are all regularly scheduled in the building. Many of the bookings are handled by the SUB's competent programming director, Fiona Perina.

A host of small meeting and conference rooms are also available and are at the disposal of the various clubs, associations and societies that are registered with the Student Union. The SUB also houses a multitude of other service-oriented facilities ranging from the chaplain's office and psychological counselling to the student manpower offices. The offices of the student union executive, the council chambers, alumni offices, the Gazette and Pharos are all part of the building as well.

Still other facilities include the McInnes Room, the newly renovated cafeteria, the Green Room, the Greenwood Lounge, the campus bookstore, and the Games Room. The McInnes Room, touted in the 1968 Official Opening Program as "one of the best multi-purpose auditoriums to be found in North America," was named in honour of Mr. Hector McInnes, K.C., Chairman of the Board of Governors from 1900-1937, and his wife Charlotte MacNeill McInnes, one of the first women graduates of Dal.

The Games Room, located on the ground level of the building, has snooker tables, pool tables, pinball machines, table tennis, a television area, and a myriad of games like cards, checkers, chess, and cribbage at the students' disposal.

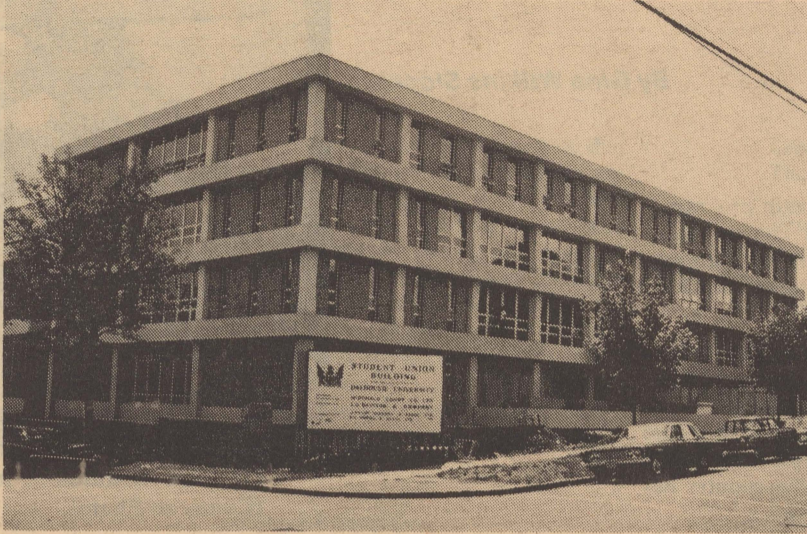
Before 1968 Dal students used the basement of the Arts Annex, now the Physical Education building, to house its facilities, including the cafeteria and the bookstore. Classrooms in the A & A building were usually booked for meetings.

The site where the SUB now stands used to be occupied by a number of University houses.

"The time was right in the sixties for the building of the SUB," says John Graham, SUB general manager. John was there at the beginning, when the idea for expanded student union facilities first started to gel. And he's been here since, overseeing the progress the SUB has made. He explains how government support of universities was strong in the sixties and how increasing enrolment placed strains on the university's facilities. The SUB was the result.

So on Friday, November 8, 1968, at 10 a.m., the SUB opened its doors. The opening ceremonies lasted for three days. Part of the celebrations included the Doodletown Pipers with Anne Murray in the McInnes Room and an all night movie festival featuring "The Dirty Dozen", "Mutiny on the Bounty", and "Penelope". More music by The Cats, The Lincolns, the Les and Larry Elgart Orchestra, and Trevon Payne and his Soul Brothers rounded out the festivities. Ten years later it's Irish music, discos, and backgammon tournaments. Times have changed!

By the way, Happy Birthday, SUB!

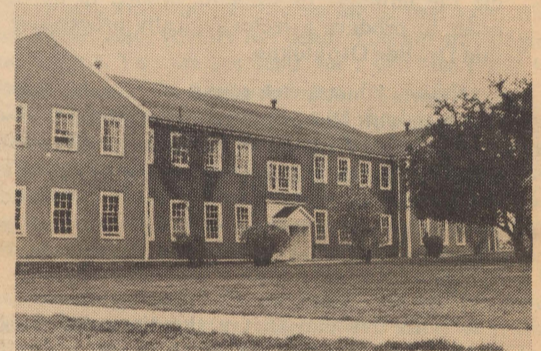


The SUB under construction.



Kamal Chopra organized the Ten SUBstantial Years activities.

By Gina Wilkins Slopek



The basement of the Physical Education Building once housed the Student Union's facilities.

[Wilkins Slopek photos]



The Campus Bookstore, below, carries everything from books to briefcases to sweat-suits.



The Games Room, above, one of the places to relax in the SUB.

## What else happened in 1968?

Just to put the SUB construction in historical perspective, here are a few other events that took place in Canada and around the world in 1968.

\*Nancy Greene won gold and silver medals and the Ladies' World Cup at the XIX Olympiad.

\*The Montreal Canadiens won the Stanley Cup.

\*April 4, Martin Luther King Jr. was assassinated in Memphis, Tennessee.

\*June 5, Robert Kennedy was shot. He later died in hospital.

\*The USSR invaded Czechoslovakia.

\*Dec. 24, Apollo 8, with three astronauts aboard, orbited the moon.

\*In music, The Bee Gees came out with their first tune, "Massachusetts"; the Beatles did "Hey Jude," "Lady Madonna," and "We All Live in a Yellow Submarine"; the Rolling Stones did "Jumpin' Jack Flash." And there was Tiny Tim.

\*In the movies, there were "The Graduate," "2001," "Planet of the Apes," "Rosemary's Baby," "Oliver," "The Odd Couple," "Chitty Chitty Bang Bang," and "The Good, the Bad and the Ugly." And there was "Hair".

# \$68,000 birthday present for the SUB



Area dividers topped with greenery.



General view of the renovated cafeteria.

## A facelift for the cafeteria

A \$68,000 10th birthday renovation of the Student Union Building cafeteria was almost complete for the start of classes this year.

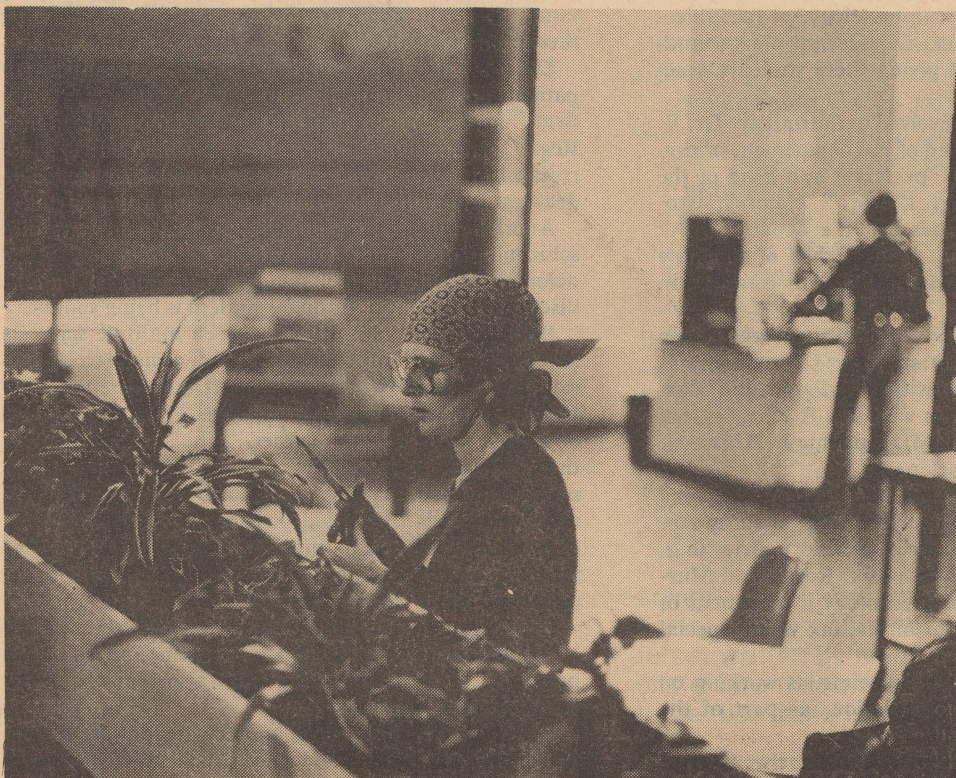
Much of the cafeteria floor has been raised and a number of partitions topped with greenery add to the atmosphere. The greenery must be attractive, because someone stole five of the plants shortly after they were installed.

The university paid \$49,000 towards the renovations and the Student Union will pay the rest, said John W. Graham, SUB general manager.

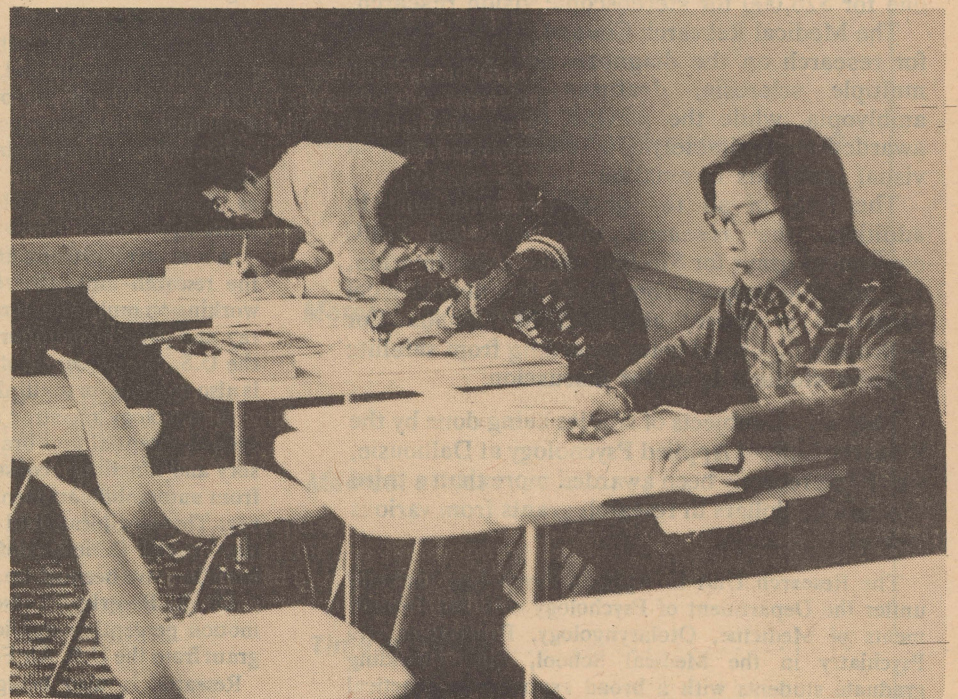
Text: Eric Cameron  
Photos: Gina Wilkins Slopek



Refurbished food service area.



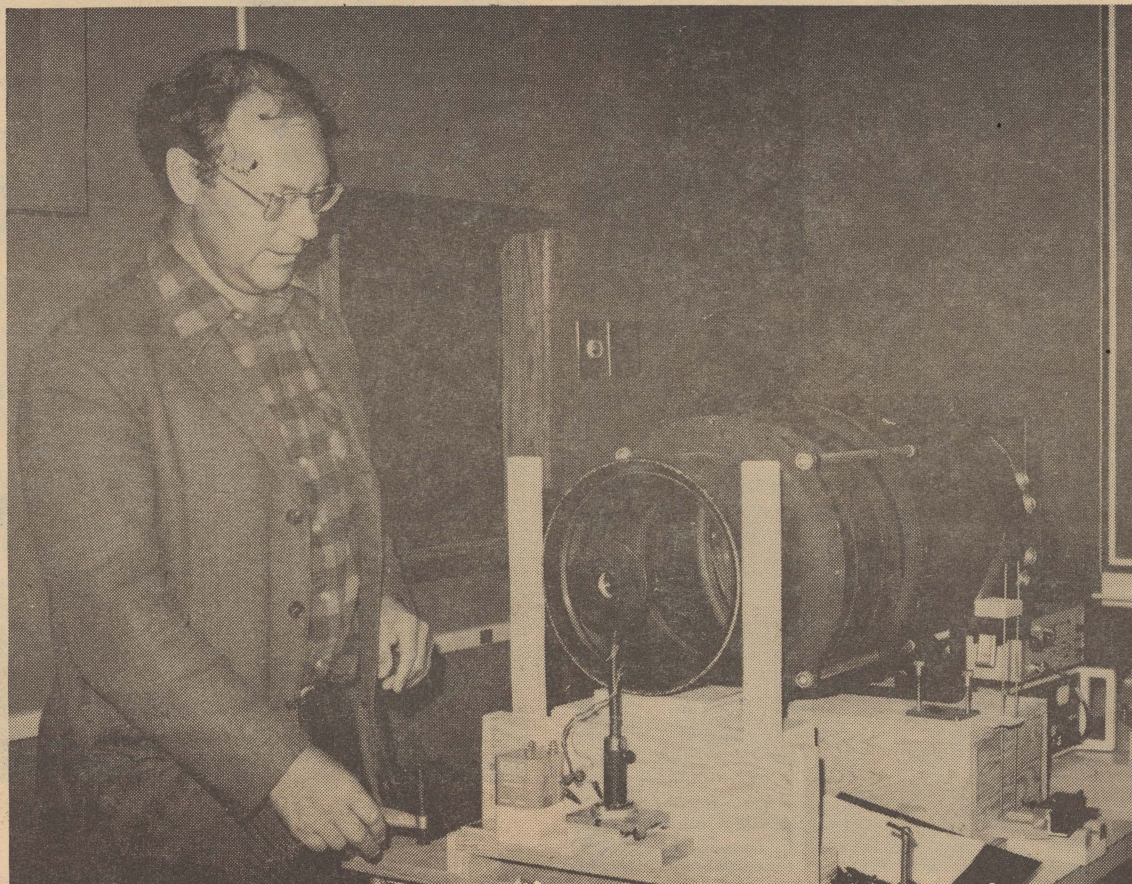
Maintaining the greenery.



A quiet corner—for studying, too.

- *The United States Air Force*
- *Toxic environmental pollutants*
- *Multiple sclerosis*
- *Stereoscopic vision*

\$60 spy camera lens helps in multiple sclerosis research



Dr. David Regan, director of the Research Unit of Applied Psychology, demonstrates how equipment is used to study multiple sclerosis. This lens is from a camera used in the 60s by Britain's Royal Air Force to spy on the Russians. Dr. Regan bought it for \$60 and brought it with him to Canada when he joined Dalhousie. He has imported other pieces of equipment from England as well. (Wilkins Slopek Photo)

A mixed bag,  
so what do they  
have in  
common?

## \$334,000 in grants for Applied Psychology Research Unit

By Gina Wilkins Slopek

The grants went to the unit in the name of its director, Dr. David Regan.

From the National Research Council came a strategic research grant of \$118,000 for study of the effects of toxic environmental pollutants, and one for \$26,000 for stereoscopic vision research.

The Medical Research Council granted \$86,000 for research on the diagnosis and treatment of multiple sclerosis, deafness, glaucoma and amblyopia, while the AFOSR (U.S. Air Force) awarded approximately \$104,000 for the study of visual problems in aviation.

The total of all the grants is \$334,000. In addition, the research unit has an MRC equipment grant for \$76,000 under consideration, and possible support from NASA (for neurological diagnosis in space) and DCIEM Canada (for helicopter flight and color recording from satellite sensors studies) is under discussion.

They are all subjects of studies being done by the Research Unit of Applied Psychology at Dalhousie, which has recently been awarded more than a third of a million dollars in research grants from various sources.

The Research Unit in Applied Psychology formally unites the Department of Psychology with the Departments of Medicine, Otolaryngology, Paediatrics and Psychiatry in the Medical School, thus providing graduate students with a broad exposure to practical clinical medicine. The unit provides inter-disciplinary graduate (MA/PhD) training for psychologists and

MD/post-MD research training in sensory psychology applied to medicine. Special provision is also made for graduate students whose backgrounds are in disciplines other than psychology such as physiology, physics, electrical engineering, biomedical engineering, thus rounding out the unit's staff and giving these students practical medical experience.

Other Dalhousie faculty involved in the unit are Dr. B. K. Doane, professor and head of the department of psychiatry, Dr. G. M. Novotny, professor and head of the department of otolaryngology, Dr. M. S. Ramsey, associate professor and acting head of the department of ophthalmology, and Dr. T. J. Muray, chief of medicine at Camp Hill Hospital, responsible for training in neurology.

About seven projects are currently in the works within the research unit. One PhD student, J. Raymond, is working on multiple sclerosis with Drs. Regan and Murray and partly in co-operation with Dr. A. Ginsburg of the U.S. Air Force. Another MD student, J. Whitcock, is also working on multiple sclerosis.

A neurology registrar and an MD student are using evoked potential and brainstem recording to study sensory and functional consequences of head injuries (e.g. from automobile accidents) with Drs. Regan and Murray. They are located in the Neurology Department of the Victoria General Hospital in Halifax where special facilities have been set up.

Dr. K. Beverley, a research associate, is working on motion perception applied to aviation, as part of the grant from the U.S. Air Force.

Research is also being carried out at the Killam Children's Hospital by a post-doctoral fellow. He is working on sensory problems in infants, objective

methods for monitoring brain development and sensitivity detecting developmental abnormalities in infants, and developing objective means for monitoring visual acuity in amblyopic infants, and for comparing therapies for amblyopia.

Deafness and hearing problems in multiple sclerosis patients is being studied by another post-doctoral student, who is working with Drs. Novotny, Murray and Regan. Basic research on a new technique which the researchers hope could usefully be applied to study deafness is currently being carried out.

Another project on evoked potential studies of schizophrenia in adults and of learning impairment and defective cognitive development in children has been discussed. A suitable graduate student is being sought.

But what's the connection between multiple sclerosis and the U.S. Air Force? In the field of visual perception, says Dr. Regan, "we are looking at two extremes—defective vision and super-performance. From one we may be able to learn about the other." The researchers hope that through their studies, better tests for multiple sclerosis may be developed. They are also working on developing tests that could possibly aid in the selection of trainee pilots so as to improve the success rate of pilot training and facilitate long-term monitoring of experienced pilots' visual abilities.

Dr. Regan is also the Killam Research Professor for 1978, an associate professor of medicine, an associate professor of otolaryngology, and a professor in the department of psychology.

He holds BSc, MSc, PhD, and DSc degrees from London University in England and is a member of several societies and committees. He has published numerous articles on various areas of research and has been invited to speak at universities around the world.



## The medical school

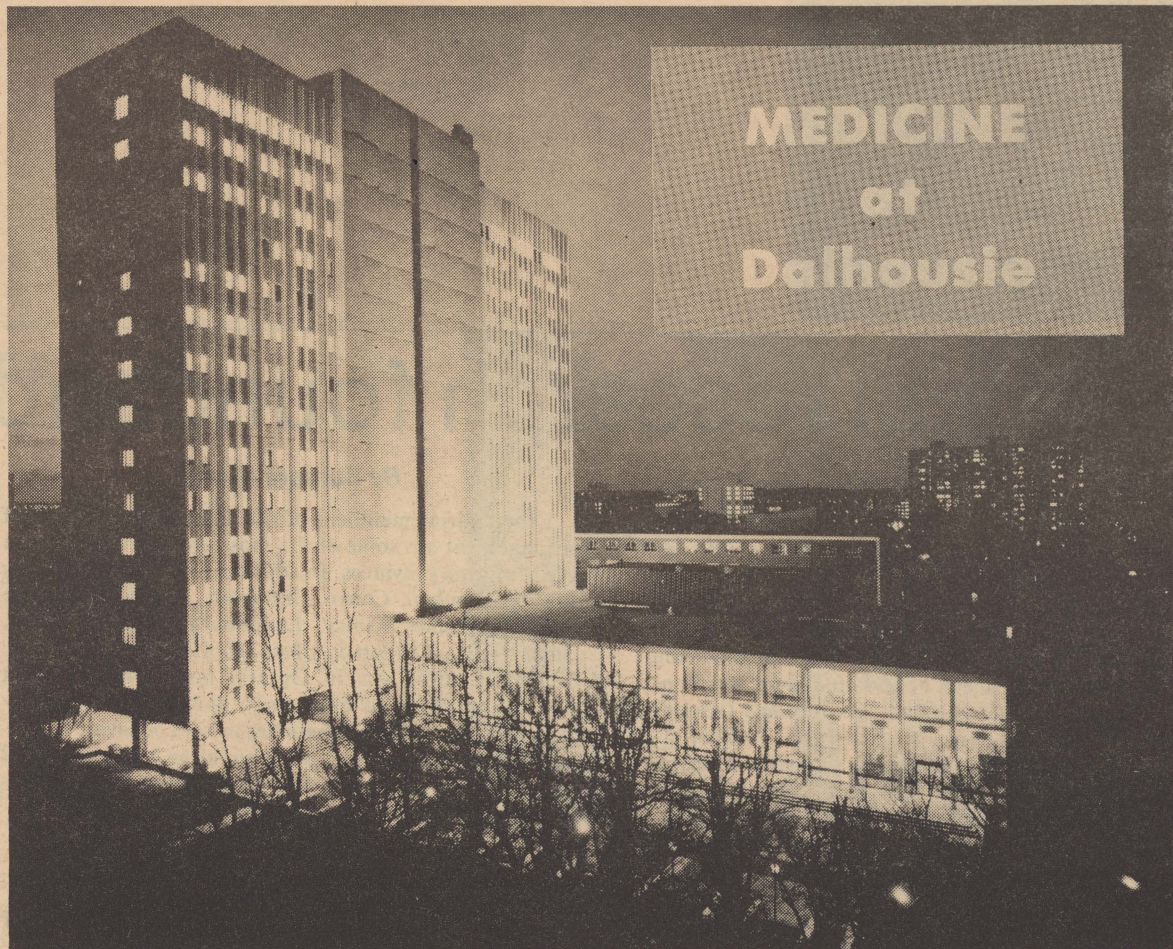
The Faculty of Medicine was organized in 1866, but medical teaching was carried out by the independent Halifax Medical College from 1875 to 1911, when the Faculty of Medicine was re-established by the university.

The school provides complete medical training leading to the degree of M.D. Preregistration clinical training and specialist medical training are provided in association with affiliated hospitals accredited by the Royal College of Physicians and Surgeons of Canada. The Division of Continuing Medical Education takes responsibility for the continuing education of practitioners of the Maritime provinces.

Research is supported principally by grants-in-aid to individual faculty members from national granting bodies and others.

The medical school mainly housed in the Sir Charles Tupper Medical Building and in the adjoining Clinical Research Centre. In close association are a number of affiliated institutions: the Victoria General Hospital, Izaak Walton Killam Hospital for Children, Grace Maternity Hospital and the Nova Scotia Rehabilitation Centre, Camp Hill Hospital, the Halifax Infirmary, and the Canadian Forces Hospital.

The Tupper building was completed in the summer of 1967. This 15 storey structure, the chief Centennial Project of the Government of Nova Scotia, is named after Doctor (Sir) Charles Tupper (1821-1915), one of the founders of the Faculty of Medicine, a Father of Confederation, and the only physician to have been Prime Minister of Canada.



## A new era

Introducing a new and, it is hoped, regular section of the monthly issue of University News: **Medicine at Dalhousie.**

The Faculty of Medicine has a long and illustrious record of achievement in its 110 years.

The academic, clinical and research work done by members of the medical school remains the highest quality.

But as times change, so do circumstances. In the last two or three years, as the result of inflation and belt-tightening by governments and other organizations, research monies from outside agencies have not kept pace with inflation or researchers' true needs, and some projects have not been able to continue.

The Board of Governors of the university was told at a recent meeting:

Dalhousie takes considerable pride in the record of the medical school and its graduates.

Yet there is one area of its interests which, in comparison with other Canadian medical schools, gives reasons for concern.

Despite the quality of research work done by members of the faculty and the steady increase in external funds to support research programs, the medical school at Dalhousie ranks about twelfth among its counterparts in Canada in the level of external funds to support research, and three of the four schools ranking lower were established only in the 1960s.

In many provinces outside the Atlantic region there is now direct provincial support of medical research, a situation which will only serve to worsen Dalhousie's comparative position.

The interdependence of research, teaching and patient care is widely accepted and continuing disparity in research support will have long-term effects on teaching and the quality of patient care in this region when compared with other parts of Canada.

Dr. J. Donald Hatcher, the Dean, then got approval in principle from the Board of Governors to launch the medical school into a new era.

The green light was given for the Dean's proposal to establish the Dalhousie University Faculty of Medicine Research and Development Foundation.

Its objective is to raise from private and, in many cases, previously untapped sources, funds to boost research in the school.

(The full report of this development appears on Page 10)

In support of the aims of the new foundation, University News will in future focus on the medical school's activities—research and otherwise—by publishing a special section each month.

Much of the material, as in the section this month, will be written by Barbara Hinds, a senior reporter with The Chronicle-Herald and The Mail-Star, who has been on loan to the medical school for almost a year now. Her reports, along with those of general interest written by members of the university's Information Office, will continue to be distributed to news media far and wide.

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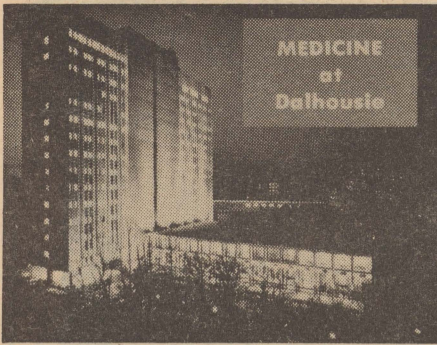
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## Medical research foundation established

By Barbara Hinds

The first medical research and development foundation to support research and other needed academic pursuits by the Faculty of Medicine at Dalhousie has been established.

The foundation was approved in principle at the September meeting of the Board of Governors. It will be known as The Dalhousie University Faculty of Medicine Research and Development Foundation, and was conceived by Dr. J. Donald Hatcher, who became Dean of the medical school less than three years ago.

Basic aim of the foundation will be to further research and other associated developments so that the Maritime population will receive the most exemplary care.

The steady injection of new funds should revitalize Dalhousie's medical research body.

A scientific advisory committee will give counsel on the disbursement of funds from the foundation's income accruing from its endowments.

An initial member of the board of the foundation is Mrs. Arthur Balders, who, together with her family, has expressed a deep interest in and support of the Dalhousie medical faculty and its research endeavors.

She said in an interview that her interest stemmed from a recent severe illness, during which she recognized the importance of the Faculty of Medicine to the excellent quality of the care she received in the Dalhousie affiliated teaching hospital.

She said she hoped that her family's support, together with that of other members of the board of management and the general public would help to maintain and develop the high level of medical care and research available in the Maritimes.

Other initial members of the foundation's board of management are some of the most prominent figures in the Maritime provinces. In addition to Mrs. Balders they are H. Reuben Cohen, Moncton; Gordon Hughes, Windsor; James Kinley, Lunenburg; William Sobey, Stellarton; and Elliott Spafford, Halifax.

Mrs. Balders was in Ontario last month to meet various members of her family and business connections, who are willing to help her in her endeavor.

Dean Hatcher foresees the foundation becoming a \$10 million fund, supporting in a flexible way programs required to meet changing trends and needs.

A scientific advisory committee will be drawn primarily from the faculty of Medicine. Where necessary, outside peer review of proposals for research and other programs will be made by international authorities. They will assure that research foundation money will be spent well on projects with the best chance of reaching their objectives.

Dean Hatcher said that an immediate priority today was to broaden the base for clinical research into the causes, treatment and prevention of diseases.

"There's a very close relationship and interdependence between the quality of research being done, patient care and medical education," said Dr. Hatcher.

"Because of this relationship, it's incumbent on us to see that existing programs are not compromised, and that new programs can be introduced with the right kind of individuals.

"By improving the base for clinical research, scientists in this medical school will become more competitive for research funds which are already available to successful

applicants through federal government agencies such as The Medical Research Council of Canada, and voluntary agencies such as the Canadian Cancer Society and the Heart Foundation.

"The foundation is a means to an end—a big, important means. This is the Maritimes' medical school, and one of the objectives is to achieve a Maritime involvement in the first instance," said Dr. Hatcher.

The foundation is believed to be the best means of achieving the best health care, for it will serve to keep good researchers and technicians in Canada and at Dalhousie.

### The background

At its meeting at the end of September, the Board of Governors was told that Dalhousie took considerable pride in the record of the medical school and its graduates.

"Yet there is one area of its interests which, in comparison with other Canadian Medical Schools, gives reason for concern. Despite the quality of research work done by members of the faculty and the steady increase in external funds to support research programmes, the medical school at Dalhousie ranks about twelfth among its counterparts in Canada in the level of external funds to support research, and three of the four schools ranking lower were established only in the 1960s.

"In many provinces outside the Atlantic region there is now direct provincial support of medical research, a situation which will only serve to worsen Dalhousie's comparative position.

"The interdependence of research, teaching and patient care in medicine is widely accepted and continuing disparity in research support will have long-term effects on teaching and the quality of patient care in this region when compared with other parts of Canada.

"After thorough consideration of this situation and considerable prior consultation with persons inside and outside the university, Dr. J. Donald Hatcher, Dean of the Faculty of Medicine, has proposed the establishment of a Dalhousie University Medicine Research and Development Foundation.

"Periodic gifts received for purposes of the medical school might be designated for the proposed foundation and direct soliciting of funds would be made by those active in the foundation and through the assistance of medical school alumni. Earnings on the funds so raised would then be used to support research and development and this in turn should enhance the capacity of medical researchers here to obtain increasing funds from the agencies which regularly support medical research.

"The general purposes of the foundations were discussed with the Dalhousie Fund Council some months ago. The council indicated that Dr. Hatcher might develop a more detailed proposal for discussion with the council later in the year, and that in the interim there should be no direct solicitation for funds that might interfere with the DALPLEX campaign."

It was stated that a number of individuals had indicated interest in the foundation's establishment and some had expressed their willingness to help with fund-raising and other activities.

"One prospective donor who is considering a substantial initial contribution has taken a significant interest and is prepared to aid in soliciting funds from sources which might not ordinarily support other campaigns at Dalhousie."

The memo went on: "Under current income tax laws which inhibit the accumulation of capital even by charitable organizations, it would seem most appropriate for the proposed foundation to be organized under the umbrella of the university rather than as a legal entity."

## \$270,000 for Anatomy equipment and research

By Barbara Hinds

Grants of more than \$270,000 have been awarded by MRC to the Anatomy Department.

The awards include funds from a major development grant of \$250,000 which will allow a department investigator to follow new lines of research, to purchase new equipment and pay his salary for five years.

More than \$87,000 will be used to pay the cost of a new scanning electron microscope, which affords a detailed examination of human and biological materials through its superior resolution.

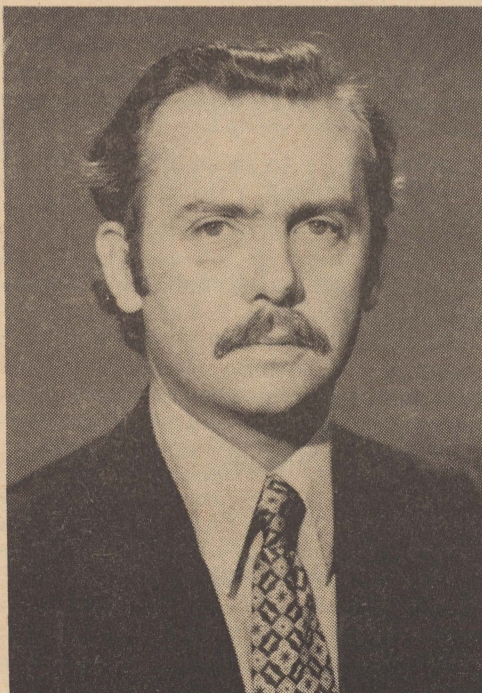
The instrument will be available for use by faculty members and graduate students and members of the Faculty of dentistry, which supported application for the MRC grant.

The electron microscope was installed during the summer.

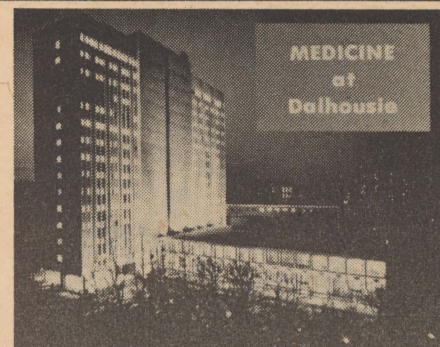
Dr. D.G. Gwyn head of the department said: "Without the grants we could not do the research we propose . . . Obviously, they will allow us to develop a first rate program . . . Without the grants the department's research activity would have come to a standstill."

Much of the scientists' work involves understanding the retina of the eye; also, understanding areas of the human brain which remain to be explored and which are associated with the control of movement.

One researcher will now be able to pursue her work into the effect of environmental pollutants such as polychlorinated biphenyls (PCBs) on the liver; and another investigator to understand better the seasonal phenomenon of moulting by lobsters. The Fisheries Research Board has also subscribed to his research program.



Dr. Gwyn: "A first-rate program."



## Co-operative effort nets \$933,127 for heart research

The Medical Research Council of Canada announced in June that it had granted almost \$1 million to the Faculty of Medicine at Dalhousie for long-term investigation of heart disease, and the news delighted the medical school.

The grant, of \$933,127, is only the second such long-term grant for cardio-vascular research made by MRC.

Dalhousie was one of six universities which applied in January for funds to explore causes, improved diagnosis and treatment of heart disease.

Several groups and individuals with the medical school have been engaged in cardio-vascular research supported by separate grants from different agencies. When MRC funds became limited, investigators in the school pooled their efforts and designed a co-operative approach.

Dr. J. Donald Hatcher, the Dean, and Dr. G. A. Klassen, professor and chairman of the Physiology and Biophysics Department, co-ordinated the application for support of the program. They and the group devoted hundreds of man-hours to planning the work and forming the request. Their success in a highly competitive field assured researchers of at least three consecutive years in which to plan ahead and work on the different research components without interruption. And one investigator in the research program will be assured of a salary for five years.

Dr. Klassen was delighted with the news of the grant. "Our purpose is to evaluate cardio-vascular forms of investigation. By doing this, we can improve diagnosis and treatment of the disease. That's our whole purpose.

"In making the application for a subject research development grant, we put aside individual ambition and put together a group endeavour."

The medical faculty investigators involved are Dr.

Co-ordinators  
Hatcher (left)  
and Klassen.



By Barbara Hinds

Klassen, who surrendered his individual \$50,000 MRC grant; Dr. Pentti Rautaharju, who is engaged in an international trial of heart disease prevention; Dr. Eldon Smith, one of the principal investigators and a physician at the Victoria General Hospital; Dr. M. Horacek and Dr. W. Eifler, who work with computer models of heart disease and will help in interpreting findings; Dr. Herman Wolf, bio-medical engineer; Dr. Alan Wong, Department of Physiology and Biophysics; Dr. James Love, veterinarian; Dr. D. Johnson, nuclear medicine; and collaborators, Dr. David Murphy, chief of cardio-vascular surgery, Victoria General Hospital; Dr. R. Martin, and Dr. J. E. Aldrich, nuclear medicine.

The four-part program involves animal models. A colony of primates will be used because they are physiologically close to man, yet will mature within three years. The effect of their diet on heart disease and hypertension will allow the researchers to evaluate diagnosis and treatment.

Investigators hope to test the theory that essential hypertension is the result of too much salt and too little magnesium during childhood and adolescence. They will use the animal models.

New types of electronic equipment used in diagnosis and the assessment of data will be developed. Computer models of disease will help to provide new insight into the process of heart attack and hardened arteries. Clinical investigation of patients with heart disease will continue at the base of the program.

Long-term goals are to provide effective strategy for the prevention and better diagnosis of coronary artery disease and hypertension.

"By becoming a group," said Dr. Klassen, "we have a security. We will not have to go looking for grants every year, and we will have sufficient time to do the different pieces of work."

"Regular interruption to look for money is one thing we have complained of constantly—writing these stacks of documents for bureaucrats in Ottawa instead of doing research.

"Time is valuable, particularly when you are trying to think in an original fashion," said Dr. Klassen.

Heart disease in Nova Scotia is described as of epidemic proportion. "We are right among the worst in the country. The province has the greatest number of life years lost due to heart disease. It's a serious problem. That's why we have to do the research.

"It's important to emphasize that this grant is given not only because we need such help, but because it is recognized we are a centre of excellence. We can build on this excellence. The best universities across Canada were competing. We won out.

"By mixing the work of different investigators, the whole will be greater than its separate parts. Much of the preliminary work which made this grant possible came from funds provided over the years by the Nova Scotia Heart Fund. Public subscription to the heart fund made it possible to take-off on something this big."

## Learning to understand the heart's vitality

The heart's vitality stems from electrical and mechanical energy. It is self-generated through biological sources which no one yet fully understands.

From womb to old age in a healthy man, the heart pumps more than 100,000 times a day, constantly responding to mood and action, though a man lives to be 100 years old.

As infectious diseases ceased to take great toll of humanity, the incidence of heart disease appeared to increase dramatically in the world's developed countries.

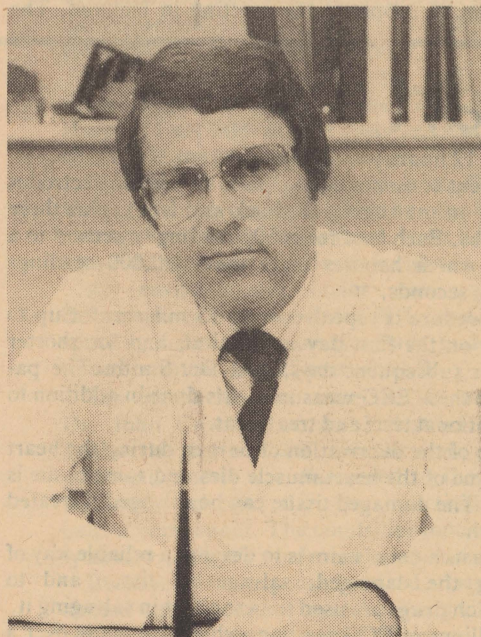
Health officials in this decade described heart disease of epidemic proportions. Men more than women appear to succumb to heart attack prior to age 60 years, thereafter the risk is about equal. The victims are more frequently overweight, cigarette-smoking, with high blood pressure and predominantly of ambitious personality. They also probably have high cholesterol levels and a family history of heart disease.

When their heart attacks occurred, the flow of oxygen supplied by the blood stream was disrupted in some parts of the heart. There then followed a course of events in which injury was inflicted on some heart cells.

The sequence of events, and now to interfere with it by proper treatment is now a hot topic of cardiac research.

This year, the Medical School received an unprecedented grant from the Medical Research Council of Canada to investigate cardiovascular disease (see above).

By Barbara Hinds



Eldon Smith

Competition for such a grant in Canada was keen, but Dalhousie's medical school has already congregated expertise and sophistication in the cardiovascular field of medical research. It has the team of scientists, the tools and a unique experience which are world class, and they sorely needed money to probe further.

International studies of heart disease have long been assisted by the research scientists at the medical computer centre of the department of physiology and biophysics.

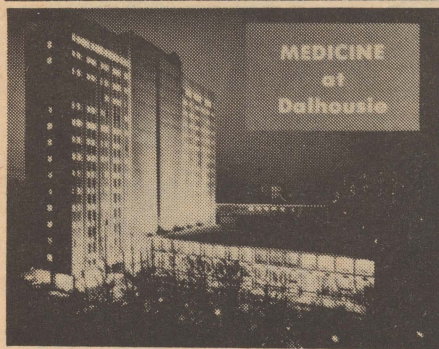
The main aim of the Dalhousie team is to develop effective tools which will measure the amount of heart tissue damaged but not destroyed by a heart attack, or, in medical parlance, myocardial infarction. By the study of millions of ECGs, they hope to be able to predict possible sudden death; and, if able to predict such catastrophe, then to find ways of preventing it.

Disruption of the heart's electrical activity during heart attacks was recognized by the mid-19th century. By 1903, ways had been devised by which the heart's electrical current could be measured through placing three electrodes on the arms and a leg, while the patient's feet were immersed in buckets of water.

The result of such measurements did little else but confirm the diagnosis which had already been made.

The number of electrodes was not increased until the

Cont'd on Page 12



## Wanted: More pliable artificial arteries

The internationally recognized work of surgeon Dr. Edwin C. Kinley and bio-medical engineer Dr. Allan Marble, of Halifax, has shown a need for development of more pliable artificial arteries which are used in cardio-vascular surgery.

With the passage of time, patients who have had synthetic grafts can suffer complications. The Halifax doctors have shown a major cause is attributable to a graft becoming rigid and failing to comply with the natural pulsations of blood flow.

Their findings were acclaimed at an international congress of cardio-vascular surgeons, at which they were invited to speak in Amsterdam, Holland.

Interviewed during late afternoon in his office at the Victoria General Hospital, shortly after his return to Halifax, Dr. Kinley was watching the clock.

At 4:30 p.m., when most businessmen are gearing down the day's routine or contemplating an evening round of golf, he was waiting to be summoned to an operating room to perform emergency heart surgery on two patients. He still had hours of delicate work ahead of him.

Dr. Kinley is a cardio-vascular surgeon, which means he installs pacemakers to regulate faltering hearts; and repairs or replaces valves, veins, or arteries which have been damaged by time, disease or the self-abuse of smoking.

The cost of his services, like that of other Canadian cardio-vascular surgeons are included in recent estimates of the economic costs and consequences of cigarette smoking released by the department of health and welfare, Ottawa—a stunning \$212 million a year for coronary heart disease alone.

Concern for the welfare of patients who have had problems with artery grafts led Dr. Kinley and Dr. Marble into their line of research.

At the Amsterdam congress, they described the changes which grafts undergo inside the body, the behavior of the grafts, the stress of a rigid graft at the junction with the normal arterial tree, and ways of minimising the complications by using surgical techniques initially.

"These ideas were new to a lot of people at the congress. Each group is ahead a little in one aspect. We're doing this research here and we're ahead in some areas here," he said.

In the past, some diseased arteries were replaced with arteries taken from animals of a suitable size, but they were unsatisfactory because of rejection by the host and degeneration of the graft.

Synthetic grafts made from Dacron and Teflon were introduced and are now used when veins cannot be taken from the patient's own body. When veins are used, they



Dr. Edward C. Kinley

are reversed so that the valves in the lumen allow the blood to flow away from the heart and toward the extremities.

Synthetic arteries are available in different diameters so that a surgeon can choose the appropriate size for each patient, according to the need. When a long graft is needed, as in a by-pass from kidney to knee to avoid amputation of a limb when the blood supply is restricted by disease, lengths of successively narrow-diameter grafts are sewn together, so they will fit snugly at the junction of by-pass and normal artery. Normal arteries taper in diameter the farther away they are from the heart.

"Synthetic grafts work well for most people, but the grafts need to be improved," said Dr. Kinley.

"Our research leads us to feel artery grafts should be elastic. They are not at the moment. Because they are not elastic, they often don't function the way normal arteries do. It's like putting in an old man's arteries. Without elasticity, the graft has no normal fluctuation in blood flow. The grafts can tear away from the host artery through turbulence.

"There have been complications which have been unavoidable because of the inelasticity. This idea was new to a lot of people at the meeting in Holland. The



Dr. Allan Marble

problems are now being recognized."

Manufacturers and designers are beginning to explore new ways of making more compliant grafts.

"Cardio-vascular surgery has been the last area of surgery to open up and develop, so the problems are only now emerging. It all happened within the past two decades. The pace will level off, the innovative phase will be over, and we will soon be entering the age of technical refinement."

Dr. Kinley added that when a by-pass graft was put in, the old artery was left in place.

"We like to operate before the patient has tissue death from arterial disease . . . I'm sure lifestyle is the real key to this problem. There are three major factors in arterial disease, smoking, diet, exercise . . . You have to be a preacher . . ."

He practises what he preaches—does not smoke, avoids fatty foods and takes exercise. "You have to reach the children in the schools. It is difficult to get adults to change ingrained habits. They will obey—after a heart attack."

— Barbara Hinds

## The vitality of the heart

Cont'd from Page 11

1930s, and today, a conventional ECG is obtained from currents recorded between three limbs and six chest electrodes.

Advent of the computer as a tool of medicine, now makes it possible to obtain a vast amount of information which can be processed quickly. Mass measurements, calculations and observations which once took months, even years, to compile and interpret, can now be done in days or hours.

Use of the computer in medicine has begun to shed brilliant light on the workings of the human body, and to explore the innermost recesses of the human heart without invading or hurting the patient.

People admitted to the coronary care unit of the Victoria General Hospital who are considered "suitable" are offered the option of taking part in the university's research program into cardiovascular disease.

Cardiologist, Eldon Smith, defines suitable patients as male, not too sick, and whose symptoms did not begin

more than 12 hours previously.

If a patient consents to take part, 117 small electrodes are placed on the chest wall, back and front, plus three on the limbs. Each lead feeds 500 readings a second to a computer which handles more than 500,000 readings every seven seconds.

The procedure is repeated every 15 minutes for up to five hours on the first day in hospital, and for shorter periods on subsequent days, said Dr. Smith. The patients have these ECG measurements done in addition to the conventional tests and treatment.

Because of the deprivation of oxygen during the heart attack, some of the heart muscle dies and some tissue is damaged. The damaged tissue can be salvaged if treated fast enough.

The research team's aim is to develop a reliable way of measuring the damaged, salvageable tissue and to decide which drugs are used to best effect in salvaging it.

The millions of ECG readings which are made over a period of several days while the patient is in the coronary care unit, are made as numbers on magnetic tape by a

computer, which is housed close to the patient's room. The tape is later conveyed and processed at the sophisticated medical computer centre of the Tupper building.

To date, information on 500 healthy people has been fed into the data bank, plus information on about 30 patients with acute myocardial infarction and who agreed to take part in the research. The patients know the research will be of no immediate benefit to themselves, but ultimately, it may be of value to their children.

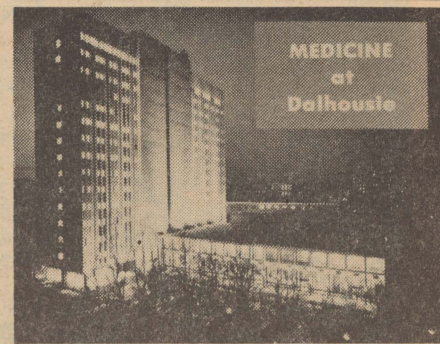
Follow-up of the patients taking part in the research is essential.

It is estimated that a few of the patients who survive the heart attack and who are discharged from hospital will die suddenly in the first year.

By studying patients over the long term, an ECG pattern may emerge which is peculiar to those few patients.

If a fatal pattern of electrical activity emerges, and can be recognized, then some deaths may be prevented.

The prospect opens new avenues of conjecture which many scientists in other parts of the world may travel.



# The Reye's Syndrome conference



Dr. Kenneth R. Rozee

Reye's syndrome is a rare, often fatal and seemingly modern disease which affects children, and engages the energy of researchers around the world.

An international conference hosted by Dalhousie and held in Halifax in the summer attracted nearly 200 physicians and scientists from Malaysia, Japan, Thailand, Argentina, Europe and North America. They bore the names of a Who's Who register of Reye's syndrome researchers.

The disease can be devastating to its young victims, and can result in mental retardation and neurological damage for those who recover from the more severe states of the syndrome.

## By Barbara Hinds

Unravelling the cause, which seems to be a combination of virus and environmental factors is time consuming and costly.

But, according to Dr. Richard Goldbloom, professor and head of the Department of Pediatrics at Dalhousie and physician-in-chief at the Izaak Walton Killam Hospital for Children, solving the mystery of Reye's syndrome may be a key to understanding other diseases of baffling origin such as multiple sclerosis or muscular dystrophy.

Of nearly 40 scientific papers read during the two-day congress, three major factors emerged:

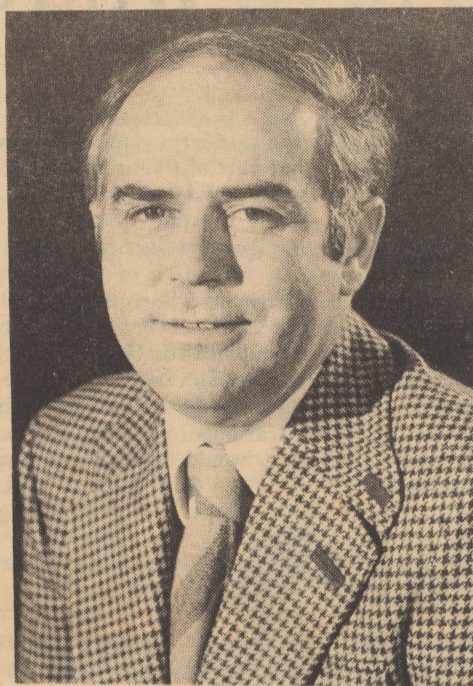
\* Thailand's Dr. Kamnuat Dhiensiri was able to give a clear picture of Reye's epidemiology because of his country's social and agricultural tradition.

\* The U.S.A.'s Dr. June Aprille, a biologist from Tuft's University, Mass., said that a factor in serum from patients with Reye's syndrome dramatically changed liver cells *in vitro* causing the mitochondria to swell and burst. The Reye's factor is small, being 400 to 500 molecular weight units. Mitochondria are the power plants of all the cells in the body. They harness energy from food and supply the cells in fine balance. In Reye's syndrome they become abnormal.

\* Dr. Kenneth R. Rozee, head of the Microbiology Department at Dalhousie, said cells cultured in the laboratory and treated with an emulsifier, Toximul, MP8, undergo changes on the cell surface, making the cells more sensitive to virus. Emulsifier does not change the virus.

Reye's syndrome can occur at any time of year, but most cases are reported during influenza epidemics, particularly following flu of virus strain B. Almost all patients, whether from Argentina or U.S.A. had a previous

Solving the mystery  
may open  
other doors



Dr. John Crocker

history of virus infection, either flu, chicken pox or upper respiratory infection.

The disease, first described by Dr. Douglas Reye (1912 - 1977) an Australian pathologist, is characterized by fever, vomiting, convulsions, coma, fatty liver, kidney and heart, and swollen brain causing severe intracranial pressure.

As in so many diseases, the earlier the diagnosis and the faster the child is taken to an intensive care unit, the better the chance of recovery. In North America, patients are usually from rural or suburban areas. They are white and between infancy and 18 years of age. Only one mature adult case was reported at the international conference.

Dr. Rozee is one of a group of Dalhousie-based researchers who have linked the emulsifier codecylbenzene sulfonate and polyoxyethylene ether polymers, which are used to spread insecticides by aerial spraying to combat spruce budworm in North America.

The research was begun after cases of Reye's syndrome began to arrive at the Izaak Walton Killam Hospital for Children, the main referral centre for sick children in the Maritime provinces.

Most Reye's cases appeared from New Brunswick, where the incidence was higher than the U.S.A. national average for their epidemic years. Nova Scotia and Prince Edward Island had a far lower incidence.

An environmental factor was considered. New Brunswick is different from N.S. and P.E.I. in that spraying forests to combat spruce budworm has continued for more than 25 years in N.B.

The insecticide was suspected. In the laboratory of Dr. John Crocker, of the Pediatrics Department at Dalhousie, up to 50,000 animals were used in one experiment, and it was discovered to the surprise of the Dalhousie scientist that the insecticide was not the culprit component. The emulsifier induced a lethal entity similar to Reye's syndrome in laboratory mice.

Because of the expense involved, tests have currently shifted to cell culture models, using liver cells. Some cells are more sensitive than others to emulsifiers and cultured cells treated with Toximul MP8 have undergone changes on the surface which change the cell recep-



Dr. Richard Goldbloom

tor sites, said Dr. Rozee.

"Cells treated with Toximul MP8 show an increased sensitivity to virus," he said.

Another cell response which is inhibited by Toximul MP8 is the association of cells with the substance interferon. This substance is a protein produced by cells, and in the human body is able to stop a virus multiplying.

Emulsifiers can change the response to interferon, so that cells support the growth of viruses instead of resisting them, he said.

People will be intermittently susceptible, depending on emulsifier exposure, if this mechanism is translatable into the live situation, he said.

The sporadic susceptibility suggested by Dr. Rozee could help to explain why some children but not others fall victim to the disease.

A vivid picture of the peculiar geographic distribution of Reye's syndrome in Thailand was recounted by Dr. Dhiensiri, Department of Pediatrics, Khon Kaen Hospital, in a north-east province of Thailand.

He said the disease was first recognized in Thailand in 1968. Autopsy findings established its existence since at least 1963.

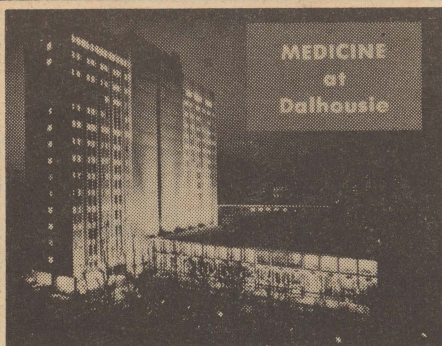
The disease is definitely rural, usually occurs in children between six months and six years of age, and peak occurrence is in the rainy season, between July and October, which coincides with the intensive use of pesticides in the rice cultivation season.

About 80 cases a year in Khon Kaen province. Peak year was 1969, when 100 cases were admitted to Dr. Dhiensiri's hospital. According to figures he obtained from the Thai ministry of agriculture and co-operatives, it was also the year when pesticide imports reached their highest peak—nearly 16 million kilograms.

Villagers in the province traditionally take their whole family to the rice paddy for the day while working. They have simple resting platforms where they shelter, keep their day's supply of food and pesticide.

Chemical pesticides and herbicides are extensively used in Khon Kaen, without adequate precaution. In other parts of the country, different methods of rice cultivation are used, pesticides are used with better precaution, and children are not taken to the rice fields. There is a low rate of Reye's in these areas.

In all cases of Reye's syndrome in N.E. Thailand, the patients have had prolonged exposure to pesticides. Dr.



Open filing cabinets protruding from a man's forehead was the illustration accompanying an article featured recently in *Fortune* magazine and entitled *That Filing System Inside Your Head*.

The item dealt with memory, an intriguing but highly elusive and

mysterious subject, and it prompted University News to seek out scientists at Dalhousie who are engaged in aspects of memory research.

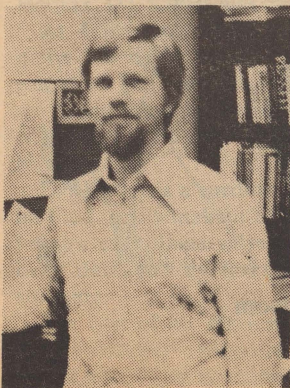
The interviews indicated that investigations under way are focusing

primarily on the effect of chemical substances released in critical areas of the brain and on brain circuitry. As for progress or a definitive statement, the response ranged from negative to encouraging.

## Memory: Where is it, what is it? It's elusive

By Roselle Green

One person who has become disenchanted with the whole question is physiologist **Douglas Rasmussen**, whose doctoral dissertation dealt with the role of acetylcholine in memory function.



**RASMUSSEN:** . . . Memory is not an object like a filing cabinet and is not located in one spot in the brain. Rather it's a complex process involving thousands of synapses that are distributed throughout the brain.

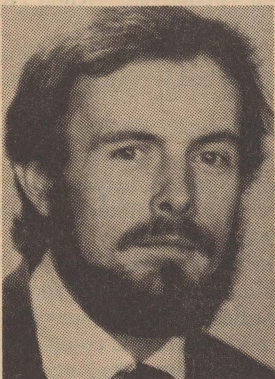
ACh is a chemical transmitter that carries nerve impulses across the synapse, the juncture where two neurons meet and considered critical in the memory process.

He came away convinced that although there is some indication that ACh may be involved in memory and that it is related somehow to inhibition of responding it seems to be a formidable exercise to test at the microscopic level.

More than that the task of relating his kind of research, which takes place at the molecular level, to observable human behaviour also seems impossible.

As result he has closed the door on this phase of research and has directed his attention elsewhere.

In a slightly more positive vein is the interest colleague **John Dudar** has in acetylcholine's function in the brain structure.



**DUDAR:** . . . can a chemical substance enhance memory?

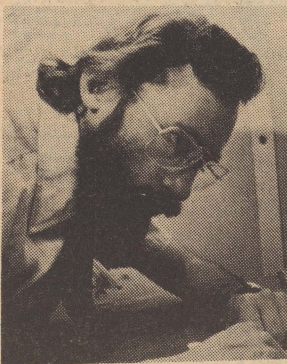
He feels that this chemical plays a part in memory but explains we still don't know the relationship. "We have to know more about the behavioural conditions that result in the liberation of ACh at the synapse and that is where my interests lie."

It's been established that by using an anticholinergic drug, such as scopolamine, there is a disruption in memory performance which manifests itself in the form of short-term amnesia or loss of attentiveness. Such drugs are known to block the action of ACh at the synapse but how that interferes with memory has not yet been determined.

In the new year, Dr. Dudar will be on sabbatical leave during which time he hopes to look at how antichol-

nergic drugs effect long-term electrical changes in the hippocampus—that part of the brain which appears to be associated with memory.

Another project is to study the effects of dietary choline on ACh release from the hippocampus. Choline is necessary for the formation of ACh by cholinergic neurons. After a period of time on a choline-free diet, rats will be given injections of choline, and hippocampal ACh levels will be monitored. If it can be shown that there is an increase in ACh release due to the increased availability of choline it suggests that it may be possible to facilitate neurotransmission through diet. How this might affect memory would be tested in rats having to learn mazes.



**GODDARD:** . . . failure-to-find in science is not evidence of absence.

A substantial grant from Canada Council valued at close to \$200,000 over a two-year period has enabled **Graham Goddard** to devote his time exclusively to a subject that has been central to his research since the early '70s—the intricacies of brain cell synapses as a means of clarifying the fundamental brain mechanisms associated with learning and memory.

He describes his work this way: when a clustering of activity in interconnected electrochemical circuits engages a synapse in a certain way, it will cause the synapse to change or be modified. He feels he has experienced some success in uncovering the rules which govern this change.

The studies have shown that the rules for short-term and long-term modification in the same synapse vary. These rules are governed by the association of different inputs which cause some circuits to be 'switched on' while others remain constant. How circuits are switched on is the question and the challenge. "We now have to come up with a revision in the theory of circuitry of the brain."

A member of Goddard's team is **Carol Barnes**, a post-doctoral research associate who has worked through a



**BARNES:** . . . there's a fill-up capacity with aging.

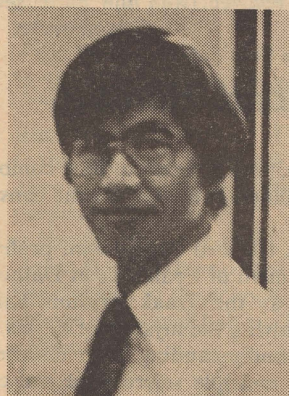
theory on the physiological changes associated with aging. Professor Goddard says it is important to any theory of memory that we relate or try to account for the change that occurs as a result of aging.

Carol Barnes gave young and old rats a spatial memory task to perform. She found that a burst of stimulation repeated daily, elevated synaptic response in the young who were able to remember how to find their way in space. No so for the older animals where memory decayed even with repeated stimulation.

The test suggests that the synapse is the site where a behavioural task is learned and where the change occurs. Barnes describes the phenomenon as a "fill-up" capacity.

Throughout life the amount of information stored in the synapse goes up and therefore the ability to absorb more information declines. It's not a memory loss but a natural human development, she says.

The most promising note came from **Shinshu Nakajima** who feels that scientists are not too far from the answers to the mystery surrounding memory.



**NAKAJIMA:** . . . it's like a treasure hidden in the sand. Why not dig it out and see what it is?

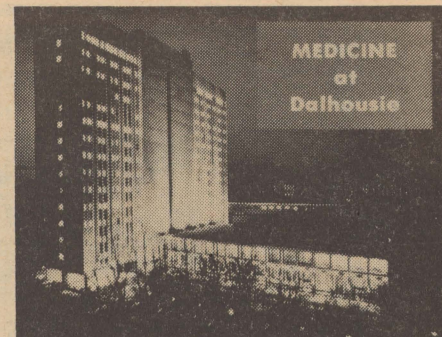
Recently he has turned up evidence that corticosteroid, a hormone secreted from the adrenal cortex, plays an important role in holding memory, particularly the kind of memory that is related to painful and stressful events.

In the lab, he gives a stressful stimulus to a mouse to initiate a chain of reactions. It goes like this: the stimulus excites the nerve cells in the hypothalamus of the brain. They release a chemical substance which acts on the pituitary gland; this gland secretes a hormone called ACTH, which activates the adrenal cortex; the adrenal cortex secretes corticosteroid, which goes back to the brain and modifies the activity of the hippocampus.

Nakajima found that, in order for the mouse to hold the memory of the stressful stimulus, this modification of the hippocampal activity is essential. He could wipe out the animal's memory by interfering with the hormonal action on the hippocampus.

Asked about his fascination with memory research, he replied: "I cannot see it or feel it, but I know that I have memory. I want to find out what it looks like."

Cont'd on Page 15



# Ethics: Her students must substantiate their decisions

By Roselle Green

Susan Sherwin plays to a packed house each week in her undergraduate class in ethics and medicine. It's one of two classes she leads in the subject; the other is a streamlined version for first-year medical students.

In the class she tries to develop an understanding of where ethical dilemmas in medicine lie and in what context they should be evaluated.

In order to do this, she first directs the student's attention to a set of values from which they must choose to help to resolve the moral predicament they face. Students, she explains, must substantiate their decisions on the basis of ethical reasons.

Her expectations of the students are high. Dr. Sherwin, a professor of philosophy, claims that regardless of what path or set of reasons a person takes as his ethical norms, she expects that person to be able to defend those values with intellectual arguments.

The subjects discussed in class are all current issues that touch people's lives. One of the topics that students will examine is the issue of consent. The question raised here is whether the judgment that a treatment will improve a person's health is ever justification for applying that treatment without his permission?

Students will also consider euthanasia and ask under what circumstances, if any, euthanasia is justifiable.

Another value issue which she says requires serious evaluation is the right of unlimited claims on health care resources.

Has society an obligation to provide care regardless of cost?

How should government funding for health care be allocated?

Who should determine what patient receives kidney dialysis treatment when there are only a limited number of machines available?

These are but a few examples. All of them are difficult questions that must be faced in the health care context.

Dr. Sherwin says that we live in an era of growing medical capacity involving medical experimentation, behaviour modification and genetic engineering. Coupled with this is a growing demand for confidentiality, a desire for informed consent, and other kinds of patient's rights. It's appropriate to raise the question of ethics.

Dr. Sherwin believes that people are responsible for their own ethical decisions. Her objective is to help them to see what is necessary in order to make moral judgments. She does this by teaching ethical theory.



Susan Sherwin's advice is to learn to appreciate a situation, reason it through and evaluate the choice and direction taken. [Cameron Photo]

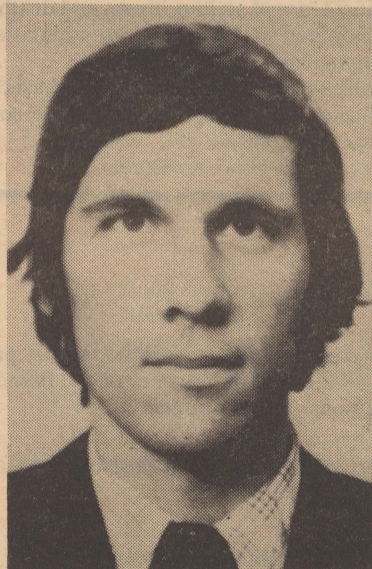
## Memory

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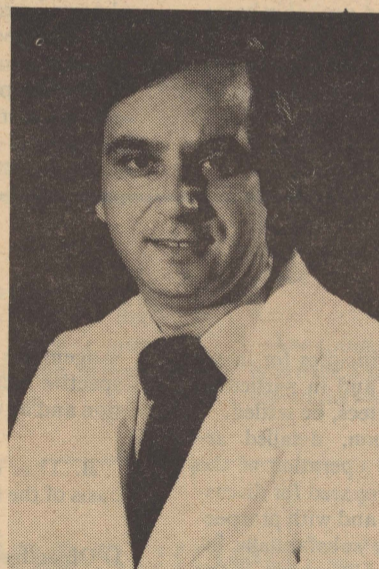
Spatial memory as a cognitive process has attracted many psychologists, among them Lynn Nadel who awaits the acceptance or rejection of his theory (formulated in collaboration with John O'Keefe in London) of how the brain handles space and how we acquire knowledge.



NADEL: . . . my work is in a 'hold' position pending reaction from my peers.



Dr. John P. Finley



Dr. Robert Bortolussi



Dr. Dorothy Barnard

## Three appointed to Pediatrics at IWK

A cardiologist, a hematologist and a microbiologist have been appointed to the Department of Pediatrics. All three will be situated at the Izaak Walton Killam Hospital for Children.

Cardiologist John P. Finley is a native of Lunenburg, and a McGill-medical graduate. His interest, which is in sudden infant death syndrome, includes investigation into the control of newborn heart rates and comparative studies between normal newborns and that of the SIDS population.

Dr. Dorothy Barnard holds a joint appointment with the Canadian Red Cross and the Department of Pediatrics.

A native of Dartmouth and a graduate of the Dalhousie Medical school, she has broad research experience in pediatric hematology.

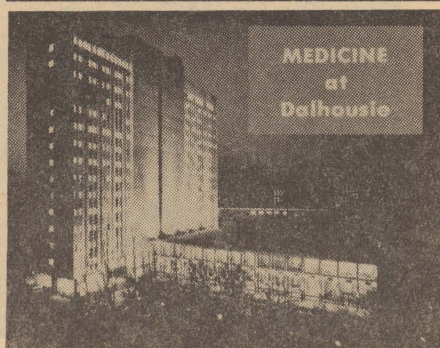
In addition to serving as deputy director of the Red Cross Blood Labs, she will carry out a series of research studies in facilities provided in the IWK Hospital for Children. Her investigations will focus on coagulation disturbances in the newborn infant. She will also observe different techniques of preserving platelets through freezing, particularly for use by adult leukemics.

Dr. Robert Bortolussi has been appointed to the departments of pediatrics and microbiology. A researcher with a background in hematology, endocrinology and bacteriology, he will direct his research efforts to the rapid detection and identification of bacterial infections in children. His studies are aimed at either preventing infection in the newborn or improving the newborn infants' ability to combat infection.

The book, fresh off the press and the result of seven years of work, describes the theory of the hippocampus as a mapping system.

It explains that there is a brain system that builds maps, permitting animals to locate themselves in space. We have attempted, he says, to find out how the brain makes these maps and derive from that how animals learn. The study attempts to link the physiological, anatomical and behavioural changes that occur.

If our thesis is recognized by the scientific community, it could be a wedge in the door . . . the first piece in the puzzle around which other pieces can be fitted.



## Time spent teaching patients to prevent disease is money —says Still

Family physicians should be paid for the time they spend on educating patients to try to prevent disease. This view was put forward by Dr. Hereford Still, when he addressed a convention of the College of Family Physicians of Canada in Charlottetown in September.

Despite great advances made in the prevention of disease; treatment and cure still played dominant roles in the practice of medicine.

The trend reflected the conservative, even out-dated, attitudes of provincial and fee-paying agencies and the tariff committees of medical societies, said Dr. Still, an associate professor in the Department of Family Medicine at Dalhousie.

In Nova Scotia, fees were still allowed for the release of tongue tie in infants and children, though the procedure was considered unnecessary and probably harmful several decades ago.

The same tariff allowed no fee to a family doctor who spent time teaching self-examination of the breast for the early detection of cancer.

As a result of the emphasis and the glamor associated with curative medicine in traditional medical schools, today's physicians, while using up to date knowledge to cure, were not using all their available knowledge to the same extent nor with the same enthusiasm in preventive medicine for health promotion and for early diagnosis and treatment.

Physicians had come to understand many of the risk factors involved in cancer of the lung, colon, cervix and breast, myocardial infarction (heart attack) and stroke.

Family physicians had the means available to prevent disease by way of patient education and health maintenance, and through anticipatory guidance and screening procedures. Yet in a survey at McMaster University, only 4 per cent of female patients in a two-year period had recorded breast examinations and only 12 per cent had been taught breast self-examination.

Much attention was given to maternal and child health, to dental and mental health, but little to sexual health.

"Sexual education implies the need for appropriate sex education from infancy to old age. In Canada and the U.S.A., there were more than 1,000,000 cases of pregnant teenage girls last year, with the highest rate of increase being in the 11 to 15 year age group.

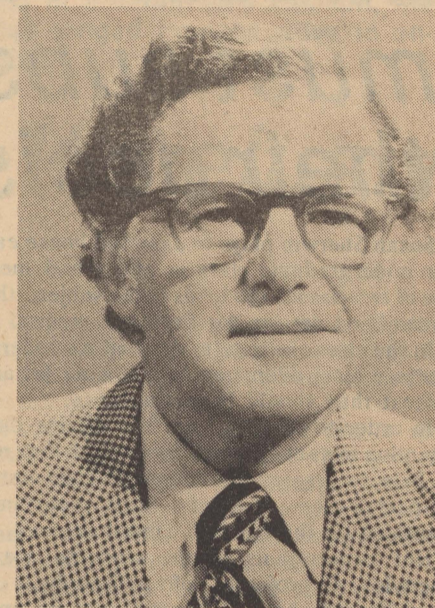
"This fact alone should convince us that although sex education in our schools at the junior high level or earlier may be controversial, to offer it makes plain good sense.

"It is time doctors exercised influence more in our communities to achieve this end."

Physicians should also be as interested in promoting "well" marriages as in treating sick marriages, and it had been suggested that marital checkups should be considered as important as physical check-ups.

"With the increasingly high rate of divorce and the known increased incidence of serious illness and death in the divorced as compared with the married population, the recommendation must be taken seriously."

Family physicians should work towards emphasis on the prevention of disease in all age groups in the com-



Dr. Hereford Still

munity; doctors should be receptive to change and show enthusiastic cooperation with other health professionals in achieving the goals of preventive medicine, and family physicians should be paid for providing preventive services such as screening, health risk appraisal and patient education.

"The traditional fee for service or for time involved may not always be appropriate. Because preventive services require professional time and money, I believe we have to think in terms of a special practice allowance for physicians, to offer the kind of screening and recall of patients needed."

Dr. Still was giving the W. Victor Johnston Oration at the 21st annual assembly of the College of Family Physicians of Canada in Charlottetown.

Barbara Hinds

## The background

Cont'd from Page 10

It was also important that basic principles for interrelation of the proposed foundation, and in particular the Board of Governors and its committees, be settled.

"If principles can be agreed upon, detailed arrangements for the organization and operation of the proposed foundation would then be prepared for discussion with the Dalhousie Fund Council and with prospective donors and others who might be substantially involved with the proposed foundation. Ultimately, if the proposal goes forward as now conceived, the Board of Governors of the university would be asked at a future meeting to approve detailed arrangements about the proposed foundation and its operations.

"In considering possible arrangements for the proposed foundation, account has been taken of arrangements already existing at Dalhousie for management of the Killam funds with separate accounting and for commitments by way of senior staff appointments to be considered and recommended by a special committee, and also of arrangements at the University of Toronto for the Banting Research Foundation, a body separately incorporated in 1925 to assist medical research at the University of Toronto or elsewhere and for which the University of Toronto acts as a trustee."

The memorandum then made the following recommendations:

A. That the Board of Governors approve in principle the establishment of a Dalhousie University Medical Research and Development Foundation, subject to ratification by the Board of Governors of detailed ar-

rangements to be presented after consideration by prospective members of a board of Trustees of the foundation and by the Dalhousie Fund Council.

B. That detailed arrangements be developed on the basis of the following principles:

1) **Objectives of the Foundation** - to assist the Faculty of Medicine in meeting its mandate in teaching, research and associated patient care in exemplary fashion through support for research and development which is not adequately supported from other regular sources of funding.

The initial fund objective might be \$10 million to be raised over the next few years.

2) **Management of the Foundation** - to be vested in a Board of Trustees appointed by the Governors of Dalhousie College and University initially from among persons prepared to act in support of the foundation, with other to be appointed on the recommendation of the trustees. The trustees should be authorized to develop their own procedures and to seek assistance from any advisors the trustees may agree upon, and in particular from a scientific advisory committee to be appointed by the trustees to recommend priorities and to consider proposals for expenditure of funds of the foundation.

3) **Interrelation of Foundation with the University** - a) The Board of Trustees should include one nominee of

the Board of Governors of the university (perhaps a member of the board's investment committee might be asked to serve); the Dean of the Faculty of Medicine and the executive secretary of the Dalhousie Fund Council should also be on the board, perhaps as non-voting members.

b) Monies raised or received by the foundations should be dealt with, as other gifts for the university's purposes, by the Dalhousie Fund Office, should be invested and reinvested by the investment committee of the Board of Governors of the university to which committee the trustees may appoint two representatives for purposes of investment of the funds of the foundation, and the funds of the foundation should be accounted for separately from other general funds of the university in the same manner as Killam funds are currently accounted for.

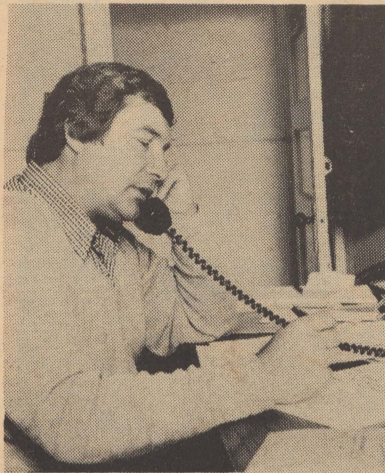
c) Before any direct appeal is initiated, plans for any appeal to solicit funds for the benefit of the foundation should be discussed with the chairman of the Dalhousie Fund Council to avoid conflict in the solicitation of funds.

d) Expenditures from funds received for purposes of the Foundation, or from income earned on such funds, would be approved by the trustees of the foundation.

C. That the Board of Governors authorize public announcement of the establishment of the foundation including the names of prospective trustees who consent to act as trustees and agree that their names be included in any public announcement.



# Remarkably consistent



Dr. Bill Shannon.

## *That's adolescent drug use in Nova Scotia*

By Eric Cameron

### Did you know that:

- *More adolescent females smoke tobacco than males in the same age group and females are almost as likely to drink alcohol as males?*
- *Nova Scotian adolescents use more cannabis than other Canadian adolescents but drink substantially less alcohol?*
- *If the present trend continues in five years more male adolescents will be smoking marijuana than tobacco?*
- *Use of esoteric drugs such as hallucinogens and glue is decreasing among Halifax adolescents?*
- *Less than one-fifth of adolescent drug users say they use drugs for the pleasant effects while four-fifths of non-users think that the effects are the main reason for using drugs?*
- *Some high schools and even some junior high schools in this province (but not in Halifax) have smoking zones set aside for students inside school buildings?*

Those are some of the things that Dr. Bill Shannon, Head of the Health Education Division of the School of Physical Education at Dalhousie University has discovered over the last few years in his studies of adolescent drug use.

Dr. Shannon has conducted or supervised five separate studies of adolescent drug use in Nova Scotia and two in New Brunswick. The Nova Scotian studies cover Halifax, Dartmouth, the South Shore, central Nova Scotia and the County of Cape Breton.

**The results show a remarkable consistency in adolescent drug use across the province, in both rural and urban settings and in areas with different economic bases.**

The four mainland Nova Scotia studies carried out in 1976 covered a population of 3891 students in grades seven through twelve, a 10 per cent random sample of the total number of students in those areas.

The incidence of alcohol use, determined by combining the results of the four studies, is 53.9 per cent, with 55.5 per cent of the males imbibing and 52.4 per cent of the females.

Tobacco is used by 42.4 per cent of the students surveyed, including 45.6 per cent of the females and only 38.9 per cent of the males.

Cannabis (marijuana, hashish and hash oil) is used by 23.3 per cent of the students in the four mainland areas surveyed, including 25.7 per cent of the males and 20.6 per cent of the females.

It is important to remember when looking at these figures that they are averaged over grades seven through twelve. In the Halifax study 46 per cent of the males and 40 per cent of the females in Grade 12 had used cannabis within six months of the time of the survey, while only 6 per cent of the Grade 7 students of either sex had used that drug.

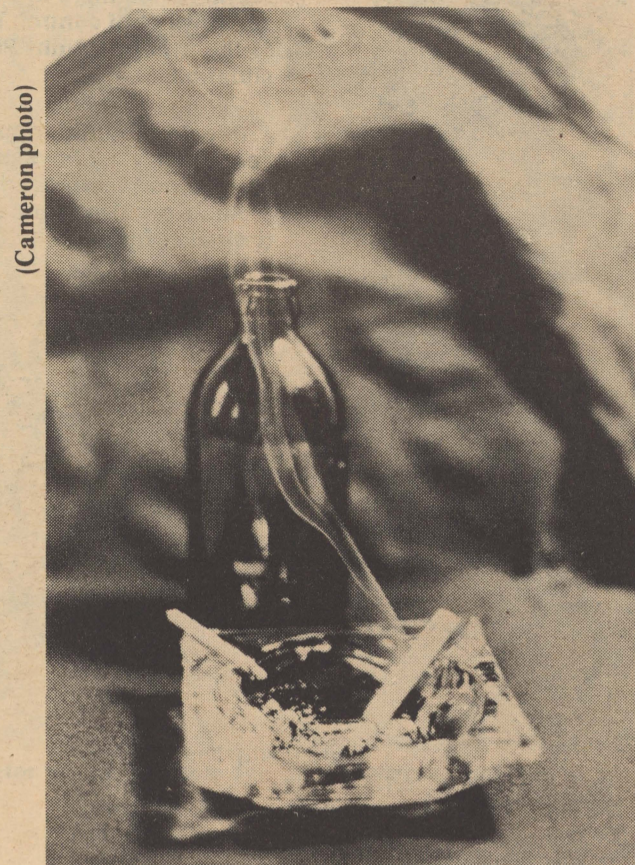
Similarly, only 30 per cent of the males and 14 per cent of the females in Grade 7 had imbibed alcohol in the six months before the survey while 80 per cent of the males and 84 per cent of the females in Grade 12 had taken a drink in that period.

The results of the drug use surveys were made public as they became available in 1976 and 1977 **but there has been little response from government or local communities**, Dr. Shannon said.

**"Look at the amount of money spent pushing cigarettes," he said. "We should probably spend at least that much money to reduce smoking to any great extent.**

**"It's possible that the provincial government can't afford to get into reduction of alcohol consumption," he added, pointing at the large capital and manpower investment in retail liquor outlets and the large tax revenue received by the province.**

Lack of information is a problem in assessing drug use trends in Nova Scotia and across the country. "We don't know for sure if the situation is getting better or worse, and if it's changing what are the modifying factors," Shannon said.



(Cameron photo)

There have been scattered studies across the country which allow some comparisons of adolescent drug use patterns. Work comparable to Shannon's has been conducted in Prince Edward Island, Toronto, rural Alberta and Vancouver.

Compared to the results of those studies, Nova Scotian adolescents use more cannabis but less alcohol than other Canadian adolescents. Cannabis use is a few percentage points higher than other parts of the country but alcohol use is substantially lower.

The consistency of results in Shannon's Nova Scotian surveys allows some comparisons with a more limited survey carried out in Halifax in 1969 and 1970 by Paul Whitehead. Based on Whitehead's figures, it looks like cannabis and alcohol use are on the increase and tobacco and esoteric drug use on the decrease.

Shannon hopes to get more accurate comparisons by repeating his survey on a province-wide basis in 1980, using a smaller percentage of the total number of students. The 1980 study using the same questionnaire as the earlier studies will provide much more accurate information on trends in drug use among Nova Scotian youth.

The thing that is really frustrating, said Bill Shannon, is to hear a parent say "Thank God my kids drink! I was scared they were using drugs."

## 175 at physics students' conference

Some 175 delegates from across Canada attended the 14th Canadian Undergraduate Physics Association Conference hosted by physics students from Dal and St. Mary's last month. It was the first time the conference was held in Atlantic Canada.

Since its inception, the conference has provided an opportunity for undergraduate physics students to present their own research papers, exchange information on research and graduate study programs within Canadian universities, and meet and hear leading contemporary research physicists.

The conference included lectures from prominent physicists from Canada and the U.S. This year's hosts

also presented a panel discussion on changing employment opportunities for graduate physics students. In addition, the delegates viewed an industrial display and toured local oceanographic laboratories where the role of physicists in ocean science was demonstrated.

Highlights of the conference were the Ernest W. Guttill Memorial Lecture, "The End of the Universe," presented by Dr. Freeman Dyson of the Institute for Advanced Study at Princeton, and Nobel Prize winner Dr. Hans Bethe's address, "My Life in Physics."

The 1979 Conference will be held at the University of Alberta.



Co-ordinator  
Roger Jollimore

The temperature in a large administrative office went sky high, apparently out of control. The office was closed down because the head of the office thought Physical Plant was too slow in remedying the situation.

People report a dripping tap that needs only a new washer as an "emergency" to Physical Plant, taking Physical Plant staff away from more important work and, possibly, real emergencies.

Such problems are all in the day's work for Physical Plant co-ordinator, Roger Jollimore, who says . . .

## We're here to help

By Eric Cameron

The average area of a single family home in Nova Scotia is 1,100 square feet.

Dalhousie's buildings occupy a total of almost 3,000,000 square feet. That works out to more than 2,700 single family homes.

The man responsible for the upkeep of all that square footage is Roger Jollimore, Co-ordinator of Physical Plant.

As his title suggests, his main duty is to co-ordinate the many and varied activities that keep the university's plant in good shape. But, as the examples at the top of the page suggest, it is a job not without problems.

No one questions the ability of the staff—the plumbers, the carpenters, engineers, electricians, painters and so on—nor the quality of their work.

But, as is almost inevitable in such a large and diverse organization as a university, the anxious department or office waiting for Physical Plant to answer a call for service, emergency or otherwise, does not realize the ground that must be covered by about 50 maintenance workers.

People are impatient, and if not impatient, expect fast, efficient service, even if their "emergency" turns out to be a minor problem.

So what it often comes down to is a communication problem between Physical Plant and the rest of the university.

Roger Jollimore agrees that there is nothing more frustrating than for someone to report a problem, have a Physical Plant representative turn up to look at it, and then see him walk out of the door without saying a word.

The solution, in part?

"We are trying to improve communications between the university community and Physical Plant staff. As a

courtesy we are asking our staff to take a minute and explain to those affected by the problem, what is going on and what action will be taken."

But the communication problem exists on the other side, too. People have phoned in to report a leak, and when a plumber has arrived has found that a dripping faucet needed only a new washer.

Mr. Jollimore, clearly, does not want to discourage people telephoning Physical Plant. In fact, it's the other way around. "We're open to suggestions, complaints, and criticism, and we need feedback from people using the facilities."

Some guidelines to follow when reporting problems:

- Report the problem as soon as possible;
- State the problem clearly, give the exact location, and give your name;
- It would be very helpful if each department or office would appoint one person to handle liaison with Physical Plant, if 10 people are calling about one problem it confuses matters more than it helps;
- Keep in mind that some problems are more important than others; a dripping faucet is not an emergency, but a breakdown in a major heating system is.

The man you will talk to if you report a problem to 3345 or 3403 during working hours is Delson Lineaux, the dispatcher. Mr. Lineaux, who is blind, records the message on his braille typewriter and passes it along to the appropriate supervisor as quickly as possible. Mr. Lineaux, the foremen, and the workers in the field are all in touch by portable radio or paging devices.

The foreman will assign a worker to take care of the problem and, if it's serious, will get to the scene himself.

After hours you should report problems to Security at 6400. They can reach the appropriate maintenance staff in emergencies.

**Much of the work done by the maintenance staff is not highly visible because it is behind the scenes and largely preventive in nature.**

Maintenance workers have regular rounds to make to inspect and service major installations across campus. As complaints come in about problems, the workers are diverted from their rounds to handle whatever has come up. The physical plant receives about 60 to 70 calls each day during the academic year reporting various kinds of problems, Mr. Jollimore said.

There are a number of misunderstandings about the role of the maintenance departments which recur frequently. One of these is the confusion of maintenance and capital work.

Maintenance is the repair and care of existing buildings and equipment and includes such things as fixing a plugged drain or faulty door lock and heating or electrical problems. Large projects such as space renovations, putting up or taking down walls, are capital projects. You can phone in a maintenance problem but capital projects require a written work order. Charlie Roberts is in charge of capital projects and reports to the Vice-President (Administration) directly.

Another common misunderstanding concerns specialized equipment which belongs to departments. If possible, the physical plant staff will assist or advise on problems with departmental equipment but most servicing must be done by the manufacturer or an authorized service representative.

Besides keeping the place working, the Co-ordinator of Physical Plant is concerned with making improvements to university installations that will be more efficient and less expensive.



Delson Lineaux is the dispatcher who takes problem reports at 3345 and 3403. (Cameron Photo)

For example, the university houses between Seymour and Henry Streets are being connected to the central heating system.

This increases the safety factor and reduces the expense compared to individual oil-fired heaters in each house. It also increases flexibility, extra valves are installed to the heating lines, and if a link is built between two houses or an addition is built on an existing house, it is very easy to connect heating equipment for the new space.

The JC/80 computer, which controls heating and cooling in the Life Sciences Centre, Killam Library, SUB, Arts Centre, Law School, Tupper Building and Central Services Building, will be completely operational within a month. The system is providing definite savings already and the results are very encouraging, said Mr. Jollimore.

If special events are being held outside regular hours in a building on the computerised system, or if the night shutdown is having an adverse effect on research materials or equipment, it is very easy to reprogram the system. For special events contact the dispatcher, Mr. Lineaux, and give him the details. In the case of an adverse effect on research materials, contact Mr. Jollimore. "The computer is an extension of your arms," he said, "but a man controls the computer."

"We're here to help people, not harass them," said Jollimore. "If there's a better way to do things, we'll try it."

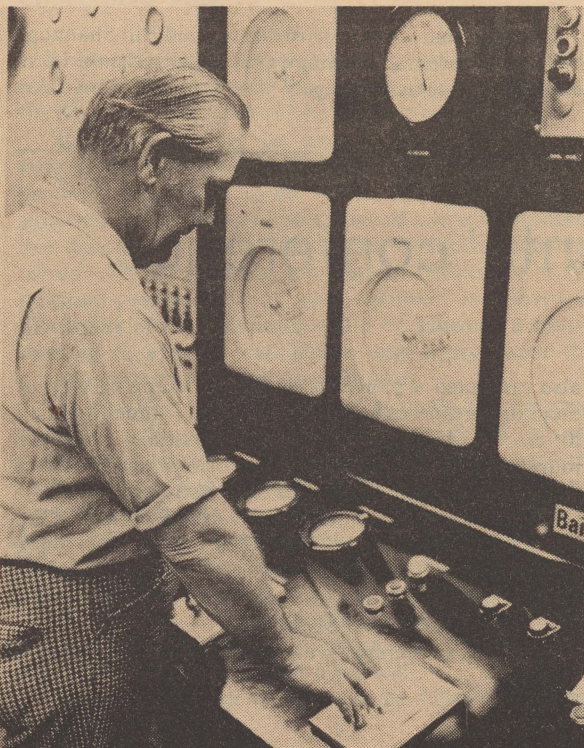
## WHO'S WHO IN PHYSICAL PLANT

Roger Jollimore is a native of Jollimore, Nova Scotia. He spent 22 years in the construction industry before joining the university in 1966 as mechanical supervisor in the Tupper Building. In 1974 he was appointed assistant mechanical supervisor for the entire campus. His present appointment was made at the beginning of 1978.

As Co-ordinator of Physical Plant, he has overall responsibility for security and traffic, office services, grounds, cleaning, physical plant budgets, and the mechanical, electrical and general maintenance departments.

The department heads who report to him are:

- Gordon Leece - cleaning (2470)
- Bernice MacDonald - office services (2246)
- A. J. O'Connell - security and traffic (6400)
- Janet Lutz - accounting and budget (2470)
- David Dowling - grounds (2470)
- Brian MacDonald - electrical (2470)
- Alfred Nielsen - mechanical (2470)
- Bill Faulkner - general maintenance and repairs (2470)



Lloyd Greenwood at the control panel for the boiler in the Central Services Building. Much of the equipment that must be serviced by maintenance workers is behind the scenes. (Cameron Photo)

# Tomorrow's resource and environment managers

Nine full-time students entered the new Master of Environmental Studies degree program at Dalhousie this fall.

The two major study streams in the inter-disciplinary program are in resource ecology and management and in environmental policy and administration.

The new degree is offered by the Institute for Resource and Environmental Studies through the Faculty of Graduate Studies.

The Institute was founded in 1973 to serve inter-disciplinary research and teaching needs with special emphasis on the Maritime region and other coastal areas.

Director of the institute is Dr. Arthur J. Hanson, who recently served as a project specialist in resources and the environment for the Ford Foundation in Indonesia, where he also taught at Bogor Agricultural University and advised various government agencies on resource and environmental issues.

Dr. Hanson holds degrees from the University of British Columbia and the University of Michigan. His research work focuses on coastal zones and aquatic resources.

Teaching staff and research directors for the Master of Environmental Studies program are drawn from a variety of departments throughout the university, including the Departments of Biology, Oceanography, Economics and Sociology, the School of Public Administration and the Faculty of Law.

"It was relatively easy to get under way this fall because of the good co-operation from the various departments," said Dr. Hanson.

The institute also has connections with Nova Scotia Technical College and Nova Scotia College of Art and Design. NSTC offers programs in urban and rural planning and environmental engineering and NSCAD offers a program in environmental design.

Job opportunities for graduates of the environmental studies program include positions with government regulatory, management and research agencies, private corporations and consulting firms, and community groups concerned with resources and development.

By  
Eric  
Cameron



Dr. Arthur Hanson, Director of the Institute for Environmental and Resource Studies. (Cameron Photo)

The resource ecology and management option of the environmental studies program will train resource managers who must reconcile human benefits with the constraints imposed by natural systems. This option includes specializations in lands and forest management and in fisheries ecology and management.

An understanding of the basis of policy and management decisions and a capacity for environmental problem-solving within technical, socio-economic and political constraints are the training objectives for the environmental policy and administration option of the program. Graduates may be expected to engage in program formulation, budget planning, environmental assessment and project evaluation.

A thesis is required from all students in environmental studies. Groups of students may write individual theses on different aspects of one project in areas such as rural energy use or Bay of Fundy tidal power.

Future plans for the environmental studies program include developing more courses specifically designed for the program and encouraging departments to develop related courses, said Dr. Hanson.

Long-term growth will depend on demand from students. More than 40 people applied for admission this first year of the degree program.

Hanson would like to develop an international studies option for Third World students and Canadians who want to work abroad.

"There is an unprecedented need on the part of development agencies for people who can tackle problems in tropical countries," he said.

The institute wants to make the program attractive to people in industry, government and other organizations as well as recent university graduates, Dr. Hanson said. Part-time enrolment is possible (and one part-time student started the program) this fall with the nine full-time people. Several other students are doing qualifying years to enter the program.

The institute is involved in a number of other activities related to the degree program. Outside speakers will participate in a seminar series sponsored by the institute for students and the public.

Dr. Andrew Vayda, an expert on human ecology from Rutgers University, and Dr. Grant Ingram, a physical oceanographer interested in coastal zone management from McGill, will be research associates at the institute this year.

The institute, the Faculty of Law, and the federal Department of Fisheries and the Environment are organizing a workshop for practising lawyers on environmental issues to be held late this year.

Dr. Hanson is working on a contract from the Canadian International Development Agency to examine how environmental and resource issues are integrated into their program planning.

## Assessing Canada's fish export opportunities around the world

The summer of 1978 saw 12 business students from Dalhousie and Memorial Universities posted to Canadian government offices outside the country—their assignment: to assess the market for Canadian fishery exports in Europe and the United States.

Working closely with consulate and embassy personnel and under the guidance of the Department of Industry, Trade and Commerce in Ottawa, the students prepared detailed reports on seven European countries and eight market areas in the U.S.

The summer fishery program was organized by Dalhousie's Centre for International Business Studies in co-operation with the School of Business at Memorial and was made possible through the support of the fisheries division of Industry, Trade and Commerce and the Nova Scotia Department of Development. In addition three Newfoundland and five Nova Scotian fishery companies provided on-the-job training for each of the summer interns prior to their postings.

Dr. Donald Patton, director of the Dalhousie centre, said that the close co-operation among business, government, students and faculty made the internship program not only a rewarding one but provided valuable insights into how to better develop Canada's fishery products export markets.

American postings were in Washington, Boston, New York, Los Angeles-San Francisco, Detroit-Chicago, and Cleveland.

European sites selected included Hamburg (Düsseldorf/Bonn), Paris, London-Glasgow, Brussels-The Hague, Copenhagen-Stockholm.

Dalhousie students who served as summer interns included Stephen Greene, John Power, David Conn, Pierre Gauthier, Alison Quinn, Janet Forrest, Sara Filbee, Anne Empke and Rosalie Polan.

Ross Mullins, Gerry Beresford and Charlie Pope represented Memorial.

### Nurse practitioner program may end

The only program in Ontario for training nurse practitioners, the nine-month McMaster University course, will likely close in September, 1979 because of lack of funding. The Ministry of Colleges and Universities has funded the program since 1975, but will probably withdraw its support next year. Started in 1971, the program has a capacity to train up to 30 nurses per year. The enrolment has dropped from more than 20 per year to an expected 12 in 1978.

### Financial cures outlined

A recent discussion paper published by the Ontario Council on University Affairs (OCUA) has outlined ways in which Ontario universities could deal with fiscal problems likely to plague the system in the future. OCUA suggests several curative measures: closing or modifying the roles of satellite campuses; merging arts and science faculties of adjacent universities; linking undergraduate professional enrolment to employment opportunities; continually evaluating graduate programs; and developing innovative research stimuli in conjunction with monitoring government research initiatives.

To match a predicted shortfall of \$104 million in government grants by 1981-82, OCUA estimates that a total of 1,342 faculty positions would have to be eliminated. This is one of several cost-cutting measures suggested for maintaining salaries and services with reduced funding levels.

The paper does not suggest changing the funding formula, currently linked to enrolment. Ontario universities received a 5.8% increase in funding this year, and little improvement in the level of increase is expected in the near future. Entitled **The Ontario system: a statement of issues**, the paper will be discussed when the universities present their annual briefs at OCUA hearings next spring.



## Sixteen years ago . . .

... Dalhousie got its first computer.

Here, at the entrance to the basement of the Sir James Dunn Science Building, a crate containing some of the computer equipment is unloaded.

Giving a helping hand (in the dark suit) is Professor A.F. Chisholm, then University Engineer, now associate director of staff relations.

The Dunn was the computer's first home. Since then, as the equipment has been augmented, the Computer Centre has been in the Arts and Administration Building, a house, the Old Law Building and, today, in the basement of the Killam Memorial Library.

## Fourteen years ago . .

"Dalhousie's computing centre, already too small after one year's operation, this morning was moved from the penthouse of the Sir James Dunn Science Building to a former common room in the basement of the Arts and Administration Building.

"The move meant that two large pieces of equipment, each weighing nearly 1,300 lbs., had to be lifted from the roof of the Science Building. They are too large to pass through the stairways.

"This morning a crane drove up to the south end of the building to do the chore.

"The change of location was necessary as the computer's memory was being doubled in capacity, which made it too large for the penthouse. Instead of the present 20,000 memory spots, the new units will have 40,000.

"As the memory is being enlarged, the whole installation will be brought up to the latest standards of computer technique.

"The cost of the original computer was \$85,000. The enlargements bring its value well over \$100,000."

—Press release from the university, spring, 1964.

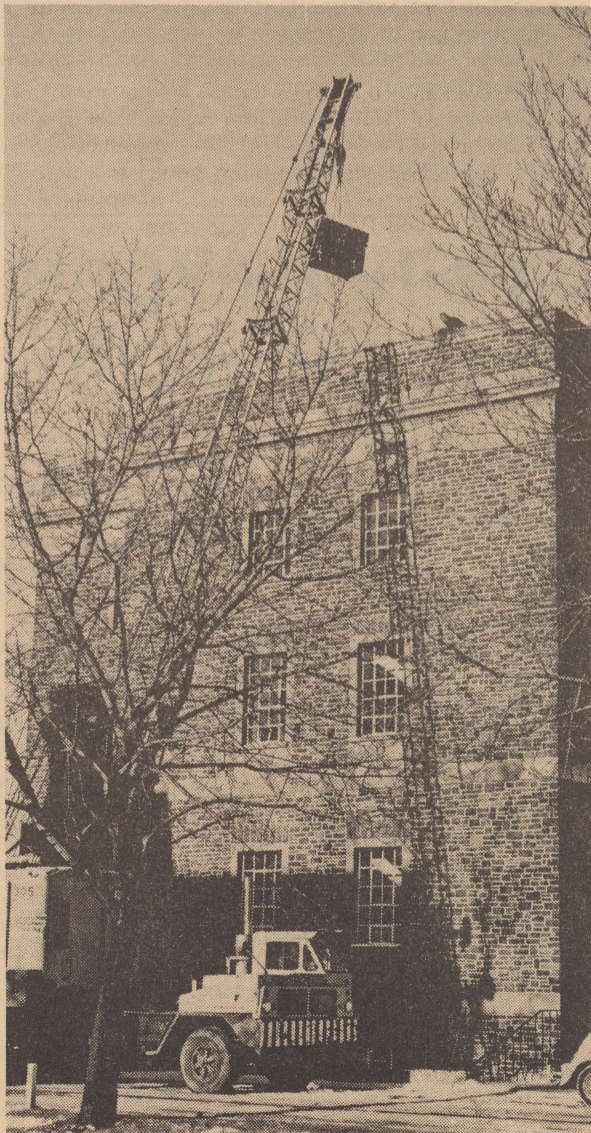
# THE 16 YEAR HISTORY OF AT DALHOUSIE

Dr. Rodger told Senate that a good deal of money which should be recouped by the university from research grants to cover computing costs was not so recouped.

Sometimes this was because individuals had not applied for enough money, sometimes because grants received were insufficient, and sometimes because although the grants requested were received, the recipients were reluctant to spend them on computing costs.

A condensed version of Dr. Rodger's report on computing follows:

It cannot be overemphasized how much change there has been in the realm of computing over the last thirty years. This has occurred in the engineering of such machines (the "hardware") as well as in the types of programming languages and programs (the "software") it is possible to use.



Four motions aimed at remedying problems in recovery of the full costs of computing done by researchers are under consideration by Senate.

The motions developed out of a report on computing at Dalhousie by Dr. R. S. Rodger of the Psychology Department.

Briefly stated, they are:

- (1) Academic and research staff should request the true costs of computing for their research work when seeking grants or contracts from external agencies.
- (2) Applications for continuing work should have attached a statement of the actual computing costs of work done the previous year.

There is hardly an academic discipline which has not been affected by the developments in digital computation. Not only do these machines carry out incredibly tedious and complicated numerical calculations ("number crunching") at high speed for research workers in the natural, biological and social sciences, they can also search, sort and parse textual material in language studies, and they can draw graphs and maps in a variety of colours and in perspective. They can generate new sentences and music, and solve new problems in pure logic.

Of course, all of this talent resides in the programs people have written to do this work; so if your salary cheque or charge account has an error, the probability is greater than .999 that this error arose from a human failure rather than a machine fault.

Dalhousie's first computer was an IBM 1620 which was installed in the Sir James Dunn Science Building in 1962.

In November, 1965, a committee set up the previous month by President Hicks recommended the formation of a computer centre with a full-time director and Mr. H.S. Heaps was appointed to that post in July, 1966.

In August, 1966, Mr. Heaps recommended that a CDC 3300 computer be acquired because of its capacity for remote communication through computer terminals, but the President's advisory committee recommended in November, 1966, that an IBM 360/50 be acquired instead (with the prospect of its replacement in 1970 by an IBM 360/67).

Mr. Heaps resigned and was replaced by Dr. J. Lions in September, 1967. An IBM 360/50 was installed in the basement of the Old Law Building in December, 1967. By 1970 it was obvious that the 360/50 would soon be overloaded, so tenders to replace or upgrade it were called in August, 1970.

At the instigation of Dr. R.F. Shaw (then on the staff of the Department of Preventive Medicine) a users' group (DUCUG) was formed in February, 1970. President R.S. Rodger and secretary R.F. Shaw were appointed by the executive committee to serve on the University Committee on Computers and Communications Services under the chairmanship of Professor L.G. Vagianos (then Director of Communications Services).

The University Committee on Computers and Communications Services is now under the chairmanship of Vice-President Vagianos and has the other vice-presidents as members as well as the Director of the Computer Centre, the Director of the Audio-Visual Centre in the Tupper Building, a representative of the Faculty of Medicine and two representatives appointed by DUCUG.

When Dr. Lions resigned as Director of the Computer Centre in 1969, Professor Vagianos took over as acting director and was replaced in that capacity by Mrs. Elizabeth Payne in July, 1970. When she resigned in

(3) Administrative officers who must countersign or authorize applications for grants or contracts should check to see that funds for the full cost of computing are sought.

(4) The University should inform the three major national granting agencies of these changes.

The motions were tabled at the October meeting of Senate pending discussion of certain problems of cost determination. The report was first presented to Senate at the September meeting.

A condensed version of Dr. Rodger's report appears below.

## COMPUTERS

1972, her place was taken by the present director Mr. Intab Ali.

The tenders all appeared to meet Dalhousie's requirements, but the system proposed by CDC, though more expensive than the others, showed much greater actual power and potential for development, so DUCUG recommended that system to the University Committee and Dr. Hicks.

Professor Vagianos, Mrs. Payne and DUCUG all agreed on the wisdom of trying to obtain a CDC 6400, but because of financial constraints recommended by the provincial government, that machine was not acquired until late June, 1971.

Since its installation the CDC 6400 has been upgraded and modified on a number of occasions to meet increasing demand. A large part of the increase has been through remote computer terminals. An average of more than 50,000 jobs were processed each month in 1977-78.

Terminal use began with the CDC 6400 in mid-1971 using the Scope operating system. The terminal facilities of that system soon became saturated and an improved system (Kronos) was installed in mid-1974.

In January, 1976 an agreement between the universities and some other institutions of higher education and the Maritime Provinces Higher Education Commission to establish a Nova Scotia Educational Computer Network became effective. A new operating system (Nos) was installed on May 1, 1976.

Work done by Dalhousie University's main computer has increased tenfold in the last 10 years. This has required constant adaptation of the system to user needs. In the last five years the most pressing needs have been to provide more back-up storage (disk space), to improve the flow of information between the heart of the computer and that back-up storage, and to provide even more "ports" into the machine through which users can dial in by telephone.

All of this costs money, but the university was able (thanks to the efforts of Professor Vagianos) to negotiate a new contract with CDC for mid-1975 which provided more computing facilities for less money. The Director, Mr. Ali, is constantly looking for new business from outside sources which will bring money into Dalhousie University to help to pay for the system.

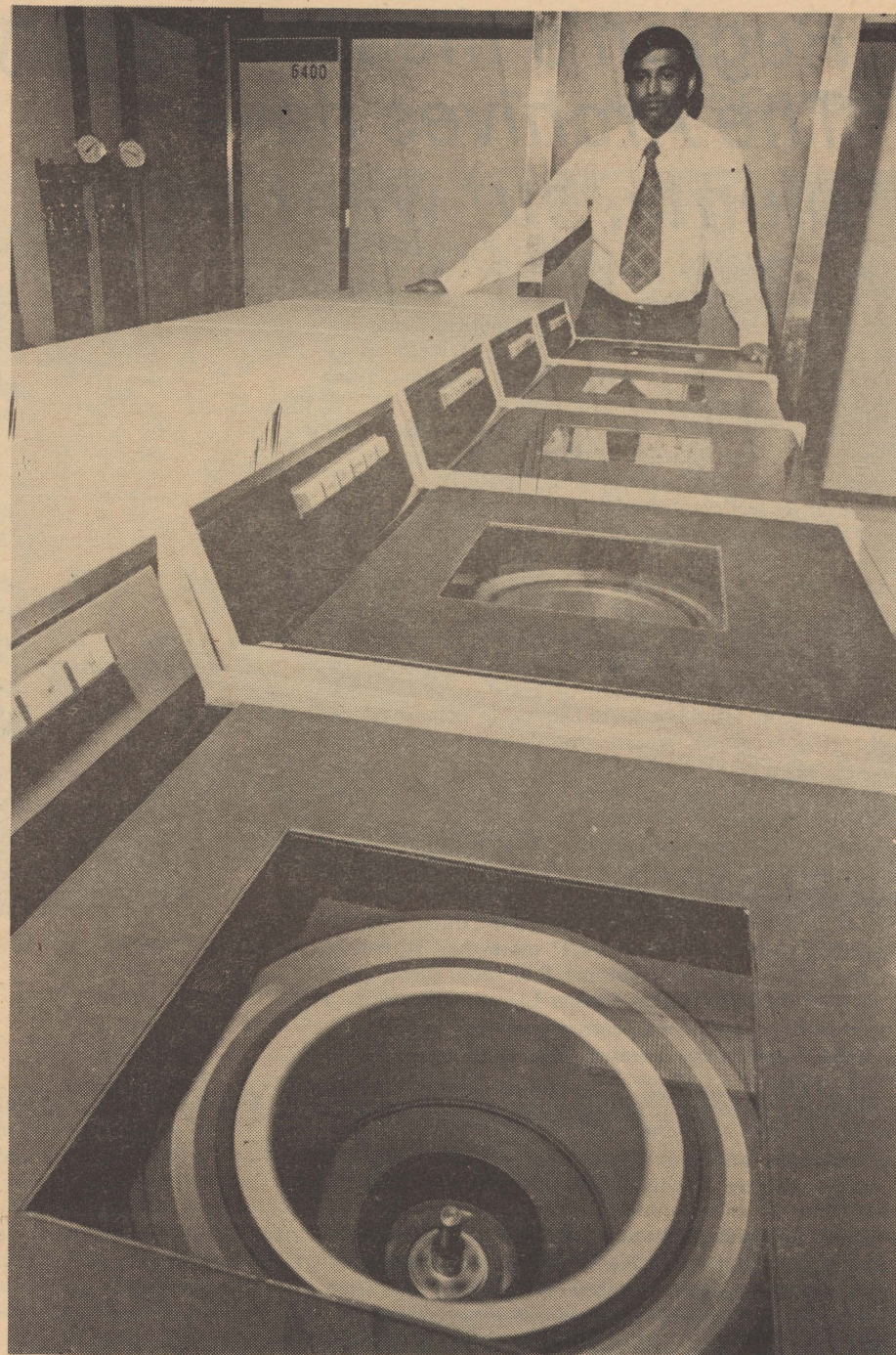
Much work has been done for federal government agencies in the region, but several of these users have acquired their own machines recently. It would comfort us if we were sure someone in Ottawa kept a sharp eye on all the facilities available here before approving the acquisition of new computer hardware. It should be noted that Dalhousie University cannot set rates and charges for computing without taking into account the fact that there are private companies in the same business, and that these would not tolerate "unfair" competition from government-subsidised agencies such as the universities.

Before the CDC 6400 was acquired, the research users in Dalhousie University gave an undertaking (through DUCUG) to pay for their research computing up to the

**"Work done by the . . . computer has increased tenfold in the last decade . . . This has required constant adaptation of the system to user needs. . ."**

**Computer Centre Director Intab Ali surveys his equipment and, as always, is on the lookout for new business.**

(A/V Services Photo)



limit of the funds they could acquire from grant agencies for that purpose. In 1977-78 these users expended at least \$71,000 but paid only \$26,000. The National Research Council stopped providing block grants to university computer centres in 1969. Some faculty members are reluctant to request the full amount of funding required to pay for computer use when they submit grant applications, and the NRC did not earmark funds for specific items in operating budgets when they issued grants.

Research workers funded by NRC greatly appreciate the flexibility they have in spending whatever monies are given them, but it should be no great hardship if funds for computing were earmarked and grantees allowed to spend only the allocated amounts plus or minus 10 per cent. In spite of the obvious advantage such earmarking would have for universities, it will probably be very difficult to persuade the new Natural Sciences and Engineering Research Council of Canada (which replaces NRC) to adopt a new policy on this specific item.

The users of Dalhousie University's computer have always taken the view that they know best what computing facilities are required and what rules should be adopted to control usage. Professor Vagianos has taken the view that computing facilities should be treated like library facilities (i.e. available to all staff and students who need them) and DUCUG has supported that view. But users should request from grant sources all monies required to pay for the computing they need in their research and use the monies they receive for computing to pay their computing bills. This rule should be university policy and should apply not only to research grants from NRC, the new NSERC, Medical Research Council, Canada Council, and Social Sciences and Humanities Research Council, but also to all other grants and contracts from whatever sources.

The only difficulty with this rule is the fear some faculty members have that large requests for computing funds, though needed, would prejudice their research grant applications in the minds of reviewers.

Recently DUCUG proposed that research users pay a minimum of \$300 from their grant funds in order to obtain a research user-number for a year and that sum would allow them to compute up to \$5,000 worth plus their paid amount. Computing beyond this would require full payment, unless such users could show that they had tried but failed to obtain research-grant monies for all the computing they need.

This proposal was adopted by the University Committee on Computers and Communication Services in 1977 for a trial period of six months (April 1, 1978 to Sept. 31, 1978). A Peer Review Committee was set up to consider requests for free computing beyond the \$5,000 limit. This committee consists of D.H. Elliott, G.F.O. Langstroth, G.R. MacLean, S.T. Norvell and R.S. Rodger (Chairman). It has considered two applications so far, one from a faculty member and one from a graduate student.

Unfortunately there still appears to be considerable confusion about what faculty members should do to fund their computing. The policy of the university is that users should attempt to pay for all their research computing from external grant and contract funds.

There is also some lack of clarity about how applications for research grants and contracts should be vetted to ensure they request adequate computing funds. A clear statement is needed about who is responsible for vetting applications, what authority and responsibility they have, and what information must be supplied to them.

## Region's theatre history? The Archives have plenty, but want more

The first English theatre production in Canada was presented in Halifax in 1768 by the American Company of Comedians. The Nova Scotia Theatre Archives at Dalhousie University Library don't have anything quite that old, but they are working on it.

The Theatre Archives started eight years ago when Neptune Theatre signed a legal agreement unique in the country at that time and began to deposit its records in the archives section of the university library.

Theatre material is one of four types of records collected by Dalhousie Archivist Dr. Charles Armour. The other areas of concentration are university records, private manuscripts (including the papers of Nova Scotia writers Thomas Raddall, Charles Bruce, Archibald MacMechan and Frank Parker Day) and business records from local companies.

Neptune material housed at Dalhousie includes prompt copies, programs, posters, press clipping scrapbooks, construction plans, set and costume designs, set models, costumes and props, and more than 4,000 photographs of Neptune productions.

A display of Neptune material is an annual event at the university library.

Other major acquisitions at the theatre archives include records of the regional Dominion Drama Festival covering the years 1965 to 1971; more than 10 feet of records from Halifax's defunct Pier One Theatre; records of the Nova Scotia Drama League since 1966; a collection of programs, correspondence, and photographs documenting Theatre Arts Guild activity from 1931 to 1960.

Donald Wetmore recently donated a substantial collection of papers to the archives including 145 photographs and four scrapbooks of press clippings covering theatre activity in the province from 1933 to 1967.

The Theatre Archives also maintains a file of theatre and music programs, already 20 feet long, mainly of Nova Scotian performances but including material from

elsewhere in Canada, the United States and Europe.

The oldest programs in the file are for musical events at the Orpheus Club and the Academy of Music in the last two decades of the 19th century. An interesting curiosity is the souvenir program for the opening of the Capitol Theatre, torn down to make way for the new Maritime Tel & Tel building at the bottom of Spring Garden Road.

Amateur groups represented in the program file include the Acadia Drama Workshop, Le Cercle Dramatique Francais d'Amherst (1912), the Greenwood Players, Grassroots Theatre and the Sou'West Players.

Dr. Armour is constantly searching for new old material for the theatre archives. Suggestions on the location of relevant material or donations to the program file are welcomed.

By  
Eric  
Cameron



Archives assistant John Bell in the Theatre Archives stacks at Dalhousie's Killam Library carrying one of the horse heads from the Neptune Theatre production of Peter Schaffer's *Equus*. [Cameron Photo]

## Cambridge Military Library faces two problems

By Eric Cameron

An institution started from the same source of funds as Dalhousie University has fallen on hard times.

The Cambridge Military Library in Royal Artillery Park was set up with 1,000 British pounds from the Castine Fund. The balance of the 10,750 pound fund was used to establish Dalhousie University.

The Castine Fund was the proceeds of customs duties levied by British forces occupying part of the State of Maine during the War of 1812.

In 1817 the Earl of Dalhousie, Lieutenant Governor of Nova Scotia, recommended that the bulk of the money be used to found a liberal non-sectarian college based on the example of Edinburgh Academy, but he put aside part of the money to aid the garrison library which had just been established.

That library, after several moves, found its present

home in Royal Artillery Park during the 1880s. It received its name in 1902 when the officers of the garrison received permission to name it after His Royal Highness the Duke of Cambridge, commander-in-chief of the British Army for more than 40 years.

At the moment the Cambridge Military Library is suffering from two problems, said Captain U. Kopstals, secretary of the library executive. The first problem is the care of a collection of about 3,000 volumes known as the Corfu collection, and the second problem is servicing the current collection of the library.

The Corfu collection, which consists mostly of 19th century literature and long runs of literary periodicals, includes a large number of items transferred to Halifax in 1864 from the British garrison library in a wing of the palace on the Greek Island of Corfu.



The collection is in very poor condition, said Capt. Kopstals. The building was not suited for the storage of rare books with leather bindings, and there were problems with temperature, humidity and ultra-violet sunlight.

The Public Archives of Nova Scotia have assumed responsibility for the Corfu collection for a period of two years. The books were cleaned and boxed, said PANS staffer Brian Cuthbertson, and placed in storage in a federal government records storage centre in Burnside.

A number of manuscripts from the library relating to Nova Scotia were turned over to the Public Archives, said Mr. Cuthbertson, but the books are only being stored while the Cambridge Military Library sorts out its future plans.

The library is being kept open by volunteers, said Capt. Kopstals, and the current collection is still available for use by military personnel. Former serviceman Sgt. Bill Hunt cared for the library over a period of 28 years, but he retired two years ago.

"We can't afford a full-time person to keep the library open," said Capt. Kopstals, and the federal government has not formally established a permanent position at the library.

Library president Colonel Frank Hofflin and his executive are seeking funds to keep the library going and get it back on a firm footing.



Lack of care,  
lack of cash

# Clothes maketh the man

By Eric Cameron

If you look at the foreign trade statistics for the last decade you may notice a curious anomaly. In 1970 more than 100 gross of whalebone strips were imported to Nova Scotia.

The man responsible for that particular contribution to the balance of trade—or imbalance, depending on how you look at it—was Robert Doyle, director of the costume studies program at Dalhousie.

Doyle, once a ballet dancer and for many years now a set designer, has been working at Dalhousie since 1975 to establish the only comprehensive costume studies program in Canada.

Fashion, he says, is an integral part of culture. The warlike Babylonians developed clothing made of skin and hide for its toughness while the peace-loving Phoenician traders developed richly colored textiles.

"I want to train thinking, creative human beings who at this point in their lives plan to work in the theatrical and fashion fields," says Doyle.

Doyle's students start off tracing the history of costume and textiles, learning pattern drafting, the use of designer's media, practical costume construction and sewing techniques.

They learn to analyse why certain garments are worn by certain members of a society. "The most feared animal becomes the pelt that is used to decorate the leader of the society."

Textiles are one of the most important commodities that the world produces, although we tend to forget that fact in this century of mass-production. "Five hundred years ago buying sufficient fabric to make a suit of clothing was a major event."



Robert Doyle and students. [Cameron Photo]

## and Robert Doyle's students learn to make the clothes

Doyle uses his private collection of textiles dating back to the 13th century and lace dating back to the 16th century to demonstrate fabrics to the costume students.

The second year of the program includes classes in accessories, millinery, decoration techniques, the wearing of costume, and advanced pattern drafting. Students are responsible for the creation of costumes for Theatre Department productions.

Completion of the two year program earns students a certificate in costume studies. A small group of selected students can stay on for a third year to earn a diploma. The third year people work as apprentices in departmental productions and in one production with a regional professional theatre company.

The first students to receive their certificates graduated last spring. People from that class are now

working at St. Lawrence Centre in Toronto, the CBC costume department in St. John's, the National Arts Centre in Ottawa, Theatre London, and the historical reconstruction at Sherbrooke Village in Nova Scotia.

Four students from that class returned for their diploma. One of them, Lynda Chapman, worked on the Neptune Theatre production of Othello this fall.

There are 14 students in this year's class and 10 in the second year of the program.

Dalhousie has the only comprehensive costume program in the country. York University and the National Theatre School in Montreal teach costume design as part of a stage design course, but it forms only a fraction of the content.

The costume studies program is completely self-contained and independent from the academic program

of the Theatre Department. This was praised by the Canada Council Committee of Inquiry into Theatre Training last year.

"Dalhousie University has shown great imagination in endorsing a comprehensive costume-building course which exists independently within the university. This program does not attempt to legislate any academic criteria, a practice which the committee applauds in this specific area," said the committee report.

Most of the teaching in the costume studies program is done by Bob Doyle. He is assisted with workshops and some classes by Lynn Sorge and June Nunn of the Theatre Department and when possible brings in visiting designers.

A native of Edinburgh, Doyle moved to the Canadian Prairies at the age of 10.

He trained as a dancer with Balanchine in New York and after dancing in that city for three years returned to Canada to join the Royal Winnipeg Ballet.

He started to study design while he was a dancer, and after an accident in which he broke the cartilage in his knee, Doyle made the switch to designing full-time.

Doyle has worked for number of Canadian theatres and for both the Royal Winnipeg and the National Ballet of Canada. He has a long-standing association with Neptune Theatre. This year he designed the summer production Tonight at 8:30 and this fall's production of Othello. He is now working on the designs for the March production of Chekov's The Seagull.

The whalebone story?

It goes like this. In 1969 Bob Doyle was commissioned by the Department of Indian Affairs and Northern Development to research early 18th century French costume for the restoration at Fortress Louisbourg. He then directed the manufacture of a huge wardrobe for the staff at Louisbourg to wear.

In the 18th century ladies' corsets were constructed from whalebone, which is not really bone at all but an elastic horny substance growing in the upper jaw of some types of whales.

The whalebone used for corsets comes from bluefin whales. An embargo was placed on the slaughter of bluefins in the early sixties so whalebone is hard to come by.

Doyle finally located a supply of whalebone in London at a company called McCulloch and Wallace. He bought all they had in stock and had it shipped to Louisbourg. The corset patterns came from no less authoritative a source than Diderot's encyclopedia.



Third-year costume student Lynda Chapman, at work in the costume department of Neptune Theatre, makes alterations to Iago's robe for the production of Othello which opens on Nov. 10 (Cameron Photo)

## The structural importance of small business

**Structural Aspects of Small Business in the Canadian Economy;** Technical Innovation Studies Program, Department of Industry, Trade and Commerce, Report No. 53, Ottawa, 1978, 95 pp.

By Dr. Christian Marfels, Department of Economics, Dalhousie University.

In its policy towards greater decentralization, the federal government has indicated its firm support for a small firm development strategy to pursue and enlarge the role of small business.

Fundamental to an understanding of this role is an assessment of the structure of industries in inter-industry and inter-temporal analysis.

To this end Dr. Marfel's study gives an operational overview of the structural importance of small business in the Canadian economy from 1965 to 1974.

From the approximately 614,000 businesses in Canada in 1974, 85 per cent had sales of less than 250,000, and they accounted for less than 10 per cent of all sales. When splitting the business population by type of legal organization, one finds that 97 per cent of the **unincorporated** businesses were in this size group and held 75 per cent of sales of all unincorporated businesses. This indicates that small business has its domain in the legal form of individual ownerships, partnerships, and co-operatives.

An analysis of the anatomy of Canadian business by industrial division reveals the following array in order of declining importance of small firms by division: Agriculture/forestry/fishing, services, construction, trade, manufacturing, mining, finance, and utilities. With the exception of agriculture/forestry/fishing, a similar pattern prevails: small firms, although vast in number, control a more or less insignificant and ever-declining fraction of business activity.

In order to determine the space left to small firms in manufacturing industries, "anti-concentration ratios" (ACR) for enterprises outside the top four and the top 20 have been calculated. It can be safely assumed that the higher the ACR the greater are the chances for survival and/or increased participation of small business from a structural point of view.

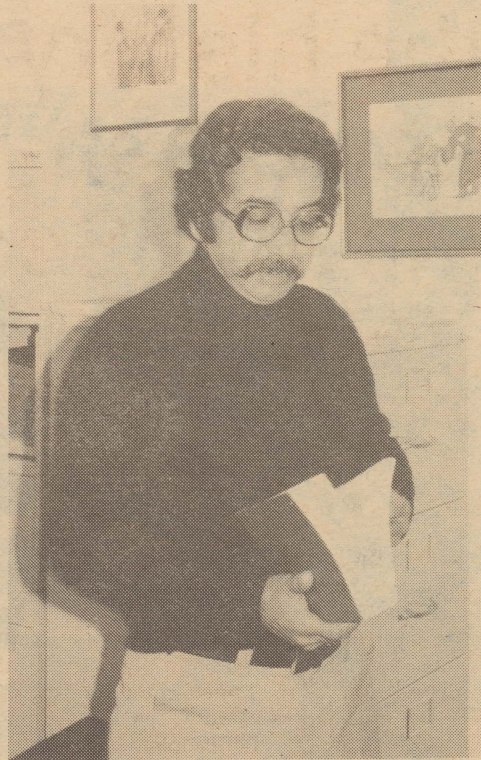
The concept of divergence between enterprise concentration and establishment concentration is employed in order to show the excess of ownership concentration (enterprises) over technology concentration (establishments) in manufacturing industries. An increasing spread between enterprise concentration and establishment concentration may be viewed as an indicator of the squeeze on small business being forced by the oligopoly nucleus of dominant firms in an industry to its competitive fringe. Thus, divergence may serve as a policy device to determine in which industries enterprise concentration levels could be reduced without harm to technological efficiency.

The structural analysis of small business in manufacturing industries is supplemented with estimates of labour productivity of small versus large establishments. Labour productivity is measured in terms of net output for the years 1965 and 1969, and in terms of gross output for the years 1965, 1969, and 1974. Contrary to popular belief, small establishments had a higher than average productivity in 45 of the 147 industries and even significantly outperformed large establishments in seven industries (as of 1969).

Combining the three indicators, viz., "anti-concentration ratios", divergence, and labour productivity, business conditions seem to be good to excellent for small business in 27 industries. On the other hand, a "hostile" environment was found to exist in 21 industries.

## Few texts on taxation, so Krishna and colleagues produced one

By Gina Wilkins Slopek



Prof. Krishna: *Essays on Canadian Taxation*. (Wilkins Slopek photo)

"There are very few books on Canadian taxation," said Professor Vern Krishna of the Dal Law School when the publication of his first book, *Essays on Canadian Taxation*, was announced late in September. Prof. Krishna, together with two former Dal Law teachers, Brian G. Hansen and James A. Rendall, edited the collection of essays which will be used in law schools across the country this year.

Plans for the book were first laid during a meeting of the tax section of the Canadian Association of Law Teachers at the 1976 Canadian Tax Foundation conference in Vancouver. There the editors realized that a volume of readings which the tax teacher could use as a companion to Grover and Iacobucci's *Materials on Canadian Income Tax*, was needed. To that end, the book was designed to parallel the Grover-Iacobucci casebook as closely as possible.

The text is geared mainly towards the student reader. About half the chapters are deliberately designed to be introductory in nature, providing an overview and offering a philosophic and conceptual context for the equivalent material in the casebook. Of the remaining chapters, some offer a more comprehensive or more sophisticated treatment than that in the casebook while others focus on specific matters of detail for which the casebook had no room. At least one chapter is designed to bring the reader up to date in an important area of tax law which is undergoing rapid change.

Of the 18 contributors to the collection, two are from Dalhousie. Faye Woodman of the Faculty of Law contributed a chapter on the taxation unit, while Vern Krishna wrote two chapters, one on perspectives on tax policy, and another (done jointly with James Rendall) on basic accounting concepts. Other chapters in the book deal with such topics as the taxation of employees, the principles underlying the deduction of business expenses, and selected aspects of capital gains.

Prof. Krishna graduated from Manchester University in 1963 with a BComm. He was employed in industry and public practice as a financial analyst and accountant for five years. In 1969 he obtained his MBA from the University of Alberta and then joined the Alberta Faculty of Business Administration as a professor of accounting and finance. In 1974 he obtained his LLB from the University of Alberta and in 1975 Harvard awarded him his LLM. Prof. Krishna joined the Dal Law School in 1975.

*Essays on Canadian Taxation* will be used in the taxation courses at the Dal Law School this year. The soft cover version retails for \$30, and is available from Mrs. McQuinn at the Law House, 1381 Henry St.

## 15,000 + volumes in IPA library

Dal has a fifth library. The Institute of Public Affairs Library, in the basement of the institute's building at 1329 LeMarchant St., boasts a specialized collection of some 15,000 books, journals, and government documents, many of which are not available in any other library in the Atlantic region.

In keeping with the institute's scope, the library, established in 1964, caters to specific areas of concentration including management, labour-management relations, local government, municipal planning and development, public administration, regional and urban affairs, and community and social issues. The collection also includes topics of current interest such as women, alternate energy, housing, collective bargaining, and community planning. Bibliographies in a wide variety of other areas are available as well.

A card catalogue of the library's holdings may be found in the Killam. In addition, the union catalogue at the Nova Scotia Provincial Library maintains a current record of what's in the collection.

The library is staffed by a librarian, Mrs. Faustina Chen, a clerk, and a library school student. It is open to all students, faculty and staff at Dalhousie, as well as to the general public, from 9 a.m. to 4:30 p.m., Monday to Friday. Further information may be obtained by calling 424-2526.

## IPA environmental management book published

Swimming pools, microwave ovens, samples for lab testing, and sewage disposal are some of the subjects discussed in the Institute of Public Affairs publication, *Environmental Management for the Public Health Inspector*.

The booklet contains excerpts from lectures on environmental management offered by the Institute at the request of the Atlantic branch of the Canadian Institute of Public Health Inspectors. The course was offered Sept. 12 - 16, 1977 under the auspices of the Departments of Health of Nova Scotia, New Brunswick, P.E.I., and Newfoundland, and in co-operation with Dal's Faculty of Medicine.

The publication is available at the Institute of Public Affairs library, ground floor, 1329 LeMarchant Street.

## Harvey paper on time budget analysis published

Andrew Harvey has published his most recent occasional paper dealing with time budget analysis. The paper was presented at a meeting of the Ad Hoc Group on time budgets and social activities of the International Sociological Association in Uppsala, Sweden in August of this year. A draft version was delivered earlier at a seminar before the Research Group of Leisure, Cultural Development and Human Potentiality, University of Waterloo.

The paper is intended to stimulate further interest in analytical methodologies related to time budget research. Dr. Harvey's interest stems from a 1971 survey conducted in the Halifax-Dartmouth area with funding from the Canada Council and the Metropolitan Area Planning Committee.





Toni Laidlaw: Excited. (Wilkins Slopek Photos)

A letter to a loved one, a grocery list, a poem written to unburden the mind—who in 1794 would have thought their hasty scribbles would be of interest to university women almost 200 years later?

Apparently some people did, because Dr. Toni Laidlaw (Education), Barbara James (Learning Resource Centre) and Georgina Chambers (a former Dal student) have had relatively good success in accumulating the writings of Nova Scotia women from 1794 to 1945 for their book on the subject.

Although Nova Scotia was settled and populated by women as well as by men, the traditional approach of history has always been to focus on famous people in government and war, most of whom were men, the researchers point out.

"Our purpose is to try to recover the history of women in Nova Scotia and in some small way compensate for the deficiency in history. Women's experiences are essential in gaining a more comprehensive understanding of our heritage," said Dr. Laidlaw.

Working through the Nova Scotia, Dalhousie and provincial legislative archives, area libraries and letters received in response to media advertisements ("We sent letters to every newspaper, radio and TV station in Nova Scotia"), the trio has collected enough material to put together a quality book.

Most of their information comes from women's diaries. "Because women have been largely neglected in traditional historical sources and since they seldom

# Recovering the history of women in Nova Scotia

By Gina Wilkins Slopek

wrote for publication, it becomes necessary to turn to their personal writings for an accurate reflection of their feelings and experiences," the researchers explain.

Day-to-day accounts have given them insight into the hardships, joys, thoughts and experiences of "our sisters in the past."

The team has discovered that women frequently accompanied their husbands on sea voyages. While the men were busy keeping a ship's log, the women recorded their impressions of sea life. The result is a record of how women viewed themselves and those around them. One woman's diary, for example, describes the behavior of whales. The lady was surprised to discover that the mammals were afraid of people. Only briefly in passing did the same woman refer to the baby she had during the voyage.

"They really did work hard," says Dr. Laidlaw. "That tends to be lost to children and women today. In a normal day women would care for sick children, till the fields, sew, launder, clean, bake, make preserves, cook meals, all without the benefit of modern appliances."

Because of the lack of transportation, when a girl married and moved from home, it was frequently the last she saw of her family. The mail system was very efficient, though. One letter the researchers received was mailed in a town in New Brunswick and arrived in Bridgewater only two days later. So when time allowed letters were written.

Religion made up a large part of the early Nova Scotian woman's consciousness.

"Diaries often opened with such statements as 'God gave us a sunny day today,'" Barbara James explains. They were also closely in touch with nature, as the descriptions of the weather indicated, but they did not appear to be overly concerned with the economy.

Many women wrote poetry "of varying quality." "Remember, they wrote for themselves only." There is also evidence that they wrote for newspapers, and in fact ran some of their own publications, but Dr. Laidlaw points out that they unfortunately did not sign their names. Of the writings uncovered to date, the fewest examples are of fiction. Examples from girls as young as



11 or 12, and from women as old as 80 have been uncovered.

The book will not only cover women's writings, but women's work as well. The team has planned part of the book as a series of pictures of women and illustrations of their samplers, quilts and other crafts. "We not only want it to be an historical book, but a beautiful book as well," says Dr. Laidlaw.

The researchers purpose to study the areas of childhood, courtship, marriage and family work, religion, suffrage, recreation and travel, and old age.

"This is, in fact, a women's project," Dr. Laidlaw, president of the Dalhousie Women Faculty Organization, points out. The team already has an interested publisher—Women's Press in Toronto—and some women from Reel Life, a women's film co-operative, will be helping with the photography and layout.

The trio hopes to publish the work by fall 1979. But they're also thinking about expanding the project to include all the Atlantic provinces, an endeavour that would set the publication date back a bit.

"We're very excited about it," says Dr. Laidlaw. "It will be the only collection of writings by Nova Scotia women."

Toni Laidlaw teaches women's studies, child development, and adolescence in the education department. She holds BA and MEd degrees from the University of Calgary and a PhD from the University of Alberta. She is currently president of the Dalhousie Women Faculty Organization and is active in the area of women's studies throughout the university.

## Libraries paper dedicated to Guy Henson

"Libraries and Popular Education", the proceedings of a one-day symposium held on March 31, this year, have now been edited by Dr. Boris Raymond, School of Library Service and published as Occasional Paper Number 20 in the series issued by Dalhousie University Libraries and the School of Library Service.

The workshop was organized by the school and the Nova Scotia Library Association. Copies are available from Dr. Norman Horrocks, the series editor, School of Library Service, at a price of \$3 (plus 50¢ handling charge for mail orders.)

The proceedings are dedicated to the memory of the late Dr. Guy Henson, former Director of the Institute of Public Affairs, Dalhousie University and also former director of the Adult Education Division of the province of Nova Scotia. Dr. Henson was a great believer in libraries and adult education and made many significant contributions to the introduction and development of regional libraries in Nova Scotia. Shortly before his death in May, he completed the paper "Can Tompkin's objectives for the Nova Scotia regional library system be realized?" which appears in these proceedings.

Dr. Patrick Keane, of the Education Department, contributes an essay on "Mechanics' Libraries and Popular Adult Education" and Dr. Boris Raymond, School of Library Service, examines "The Popular Educational Functions of Public Libraries." Three

panelists reported on their experiences - Robert H. Nichols, Director of Continuing Education for the City of Dartmouth on "Libraries and the Community Education Efforts," Joan Brown-Hicks, Community Services Co-ordinator, Halifax City Regional Library on "Libraries and the Educationally Deprived" and Lynn Murphy, Community Services Librarian, Dartmouth Regional Library on "Library Programming as a Part of Adult Education."

## Academic exchange directory published

The Canadian Federation for the Humanities has published a directory of international academic exchanges intended for the use of university professors, although some programs mentioned are open to students as well.

The guide provides a comprehensive listing of exchange opportunities in all fields and includes a number of granting agencies in Canada and abroad. Listings give general information about the programs and include certain domestic programs that also provide funds for international travel.

The first issue, published in English only, has been distributed on a limited basis. If the response is favorable, revised issues will appear regularly in both English and French. For further information, contact the Canadian Federation for the Humanities, 151 Slater Street, Ottawa K1P 5H3.

## Less vocal but women's issues group active

The more vocal aspects of the women's movement have subsided but the movement continues to flourish in a variety of forms.

One such structure has evolved in the university's School of Social Work where an active women's faculty and student organization exists to promote and maintain their interest in women's issues.

Its most visible manifestation is a half-credit course entitled Women in Social Change. It represents a collective effort by several members of staff from the school.

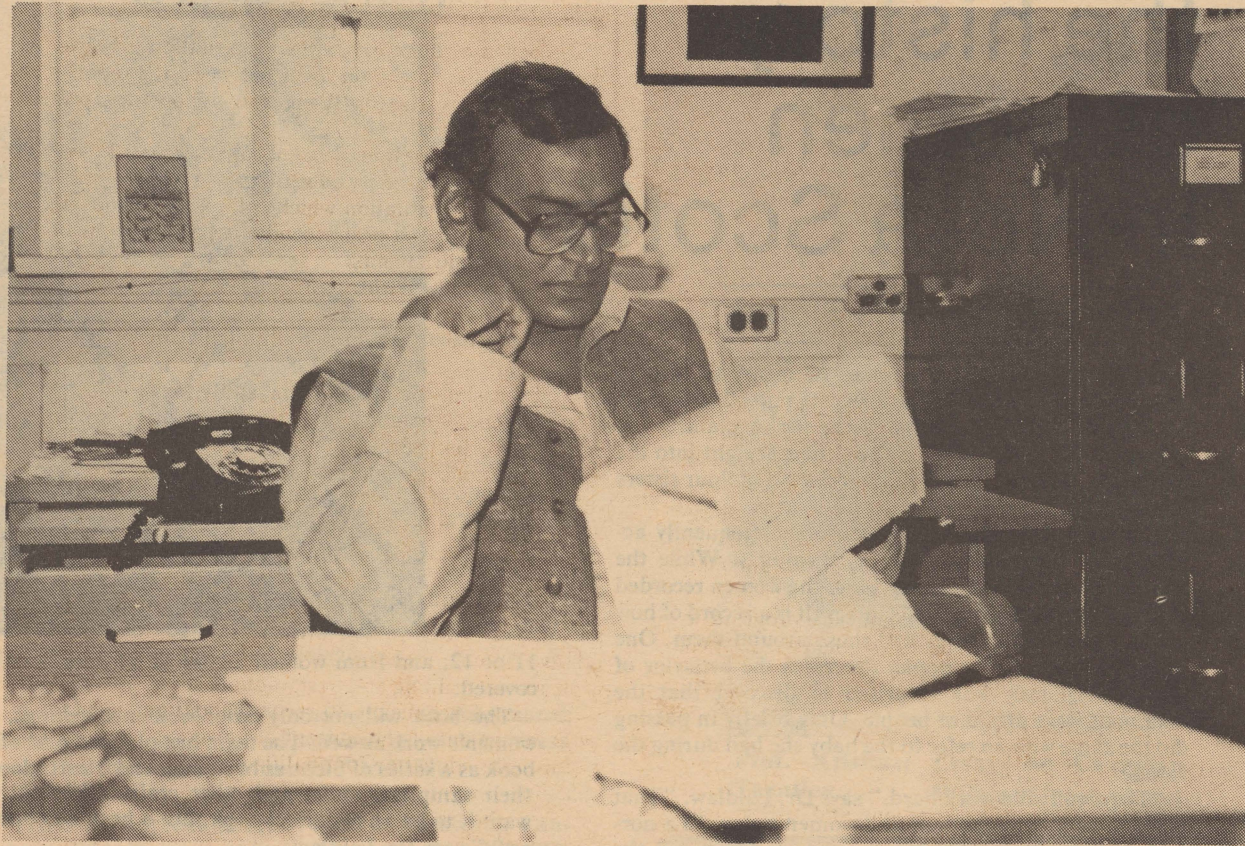
Co-ordinator Joan Cummings says the course serves as a real expression of shared experiences and levels of awareness. Topics cover a broad spectrum of issues, among them women and sexuality, in therapy, politics, education, work, and Canadian literature.

Faculty and students take responsibility for presenting materials in seminar fashion. One of the goals is to produce as a product of the course, an annotated bibliography. Academically, the course should produce a more informed social worker, since most people seeking social service help are women.

A number of women's learning committees have been established in conjunction with the course. These, too, are expressions of interest in women and social work, education and service, women as clients. The committees are led by Dorothy Moore and Joan Cummings.

# THRESHOLD: Foundation for the Future

By Gina Wilkins Slopek



Dr. Ravi Ravindra, on sabbatical from the departments of Physics and religion. (Wilkins Slopek Photo)

## The Kyoto Declaration

Dalhousie professor of physics and religion, Dr. Ravi Ravindra, recently attended the First International Conference of Scientists and Religious Leaders on Shaping the Future of Mankind in Kyoto, Japan. The conference was attended by over 100 participants, including scientists and committed members of the world's religions from 15 different countries.

"We came here," says the Kyoto Declaration which was prepared by the conference participants, "close to the place where the first atomic bomb was dropped, aware of the death and destruction caused by the use of nuclear and other weapons, and conscious of our own failures in preventing them. Convinced that the future of humanity can be safeguarded only if we learn to live together with mutual respect in one global community, we examined means to bring about such a community."

To this end, the Kyoto Declaration puts forward 10 proposals. The participants urge mutual understanding among people of different religions and support inter-religious dialogues to promote understanding and encourage co-operation between religious communities and "to emphasize the spiritual dimension of community life."

The group's third point is that developments in science should serve solely to enhance the quality of life for all inhabitants of the globe. Fourth, it advocates a system of education based on true values that emphasize the dignity and quality of human beings, reverence for life and nature, and the interdependence of all things.

As the fifth proposition, the delegates call for simpler ways of living that will ensure a just distribution of resources and a minimum of environmental pollution. Sixth, aware of the dangers of nuclear energy, they advocate alternative and peaceful sources of energy such as solar, wind, and tidal be more fully developed and used.

The declaration also asks that the governments of the world adhere to the policy of peace and solve their problems through negotiation. It calls for a ban on the development, production, and use of nuclear weapons, suggesting that the existing stock-pile be dismantled. Money used on the arms race should be used to improve the conditions of mankind in less developed nations.

Recognizing that the UN and its agencies and many other organizations are engaged in efforts along the lines of the Kyoto delegates, they urge all people to assist such organizations in fulfilling their tasks appropriately and more effectively.

The ninth recommendation is that efforts be made to develop social structures that practice the principles of freedom, autonomy, and participation of people at local, national and global levels.

Finally, it hopes for an understanding which emphasizes that all people are inseparably related to each other and share a common destiny.

Delegates from the Kyoto conference hope that the Declaration will serve as a starting point for other people throughout the world who are struggling against war and violations of human rights, and that other similar conferences will be held in different countries.

Dr. Ravindra is currently on leave of absence from Dalhousie to organize the Threshold Award program. Threshold is a new global foundation initiated this summer with aspirations and intentions similar to those expressed by the Kyoto conference delegates.

## Dal's Ravindra helps in search for a new order

They met on one of the Seychelles islands in the Indian Ocean—15 or 16 prominent intellectuals on a retreat conference gathered together to discuss a new order, a coming together and mutual questioning of Western science, technology and philosophy and of traditional or "Eastern, oriental" thought.

They came in answer to an invitation from Prince Chahram Pahlavi-Nia of Iran, whose success in the oil industry gave him the resources to support his interest in raising the world's consciousness and encouraging a new holistic style of thinking.

The result: the establishment of the Threshold Foundation.

\* \* \* \* \*

Holistic thought - the Threshold Foundation sees it as a knowledge of our inter-relationships with the living world and an understanding of the indivisible nature of the universe around us. The foundation has several objectives related to this concept: "to increase awareness of humanity's roots in the earth, reawakening an acceptance of responsibility for the future, in communion with all life on this planet; to foster a new model of the universe in which art, religion, philosophy and science converge in a new consciousness; to promote the understanding that humanity exists in a cosmos where the physical reality of sense perception is only one of many which integrate into a single whole; to encourage research and development of methods suitable for the study of other levels of reality as rigorous and precise as those in use today for the physical sciences; and to link individuals and groups from all cultures wishing to coordinate their efforts and deepen their understanding so that they may face the future with both realism and confidence.

In keeping with this philosophy of the inter-relationship of all things, Threshold Foundation has set up several projects in fields of interest throughout the world.

A whale project is being organized by Dr. Lyall Watson, noted researcher on the mammal's behavior and language. It is a many-pronged campaign in an effort to persuade all nations to cease whaling.

The Threshold Health Unit, another foundation project, is conducting a feasibility study to identify a system of clinical record-keeping that builds a common database for orthodox and therapeutic systems. The Hon. Suzan King-Hall is preparing the report.

The Threshold Award, being co-ordinated by Dal-

housie's Dr. Ravi Ravindra, professor of religion and physics, will administer an annual award of \$50,001 for outstanding achievement in relation to the foundation's objectives.

The foundation is also in discussion with Rev. James Morton, Dean of the Cathedral Church of St. John the Divine, about collaborating with the Church on a program for centralizing data on solar energy from the perspective of the vertical (or spiritual) axis rather than the current horizontal (or materialistic) approach.

In a funding project, a grant was given to McGill University to produce colour prints of the recent and important find of Mameluke documents, "the greatest single collection of original writings from the Mameluke period that has ever been uncovered."

Two publishing projects have also been proposed. One is a co-operative effort with the Far East Institute to publish an English version of V.I. Vernadsky's "The Biosphere," and the other is a book in which a selection of contributors present their personal concepts of reality arising from their professional data and experience. These concepts are intended by the foundation to explore humanity's growth towards a reality which integrates our several levels into one whole.

The final projects announced are two films. The first is a film on the dowsing faculty, its application in practice, and reactions to it. Dr. Kit Pedler is writing the treatment for this. The second is a 13-part film series by American film producer, director and writer Susan Garfield, "to communicate the intimate relationship of the spiritual quest and the scientific vision in terms of the search for values, for what is to be human."

Dr. Ravindra was one of those 15 or 16 intellectuals who sat down and sorted out the international foundation's objectives and beliefs. Now director of the Threshold Award, perhaps the most publicly visible aspect of the foundation, he and others on his selection committee will choose the one person who has done the most in the field of holistic thought.

In discussing the idea of integrative knowledge and the confluence of Eastern and Western philosophy and technology, Ravindra states: "We have not even begun to understand how this is going to change us psychologically, philosophically, metaphysically." He ponders that the world could change drastically as a result of the more thorough understanding and integration being advocated by the foundation. "We just don't know the effect it will have on our psyche."

## AUCC Notes

### GM's \$300,000

General Motors has established three major international prizes for cancer research. Valued at \$100,000 each, the Sloan medal is for research into the cause of cancer, the Kettering medal is for discoveries in diagnosis or treatment, and the Mott medal is for contributions to the prevention of cancer. The awards will be administered by the new General Motors Cancer Research Foundation. The first winners will be announced in March, 1979.

### Can-Am Institute

The Canadian-American Institute at the University of Windsor is an expansion of the Canadian-American Seminar which was started in the 1950s. In addition to providing a forum for the discussion of North American issues through the seminar, the institute offers graduate scholarships for research on Canadian-American affairs and plans to publish five major reports each year.

### New research centre

Université de Montréal recently opened the Centre de Recherches Cliniques. The eight laboratories in the new facility will be used for research on: the effects of alcohol and drugs on the liver and other organs; vitamin D; endocrinology; biopharmacology; blood circulation in the liver; biochemistry; microbiology; and immunology.

### Drug analyses

The Pharmaceutical Research and Analysis Laboratory, located at the University of Saskatchewan, will do drug analyses for the Saskatchewan Prescription Drug Plan, the university and the general public. When fully operational, PRAL will be a self-financing operation serving agencies and governments throughout Western Canada.

### Gardening aid

The University of Guelph's department of environmental biology will offer professional services to domestic and commercial growers. The department will respond to queries about the identification and control of pests, weeds and plant diseases.

### DNA research lab

The University of Alberta expects to have a second special containment laboratory for recombinant DNA research by January, 1979. At a cost of \$115,000, three rooms in the Biological Sciences Centre will be converted for this purpose.

### TYPs reprieved

The transitional year programs offered at Toronto, Carleton, Ottawa, Windsor and Brock will receive funding for 1979-80, contrary to expectations that funding would be withdrawn starting next year.

After a cabinet shuffle in August, Bette Stephenson, the new minister of education and of colleges and universities, announced the reprieve for the transitional programs. The minister also stopped expected changes for grade 13 programs pending a complete review of the university transition situation and the recommendations of the Ontario Interface Study published in 1976. That report recommended tests in grade 13 mathematics and English or French (depending on the language of instruction) to standardize student qualifications for university entrance.

### Lacoste elected president

Paul Lacoste, Rector of the University of Montreal, was elected president of the Association of Universities and Colleges of Canada at the association's annual meeting held in Ottawa in June. Dr. Lacoste succeeds M.O. Morgan, president of Memorial University. Dr. Morgan continues to serve on the board of directors as past-president. The newly-elected vice-president is Alan Earp, president of Brock University.

University presidents newly elected to the board of directors for three years are: J.C. Callaghan, president, Nova Scotia Technical College; Ralph Campbell, president, University of Manitoba; and H. Ian Macdonald, president, York University.

New directors elected for three years are: Charles Beaulieu, University of Québec; Roger Bernier, University of Sherbrooke; Michael P. Kubara, University of Lethbridge; and Ross Stanway, Mount Allison.

## Language minorities study published

Data presented in a new research study by Richard Joy, of the C.D. Howe Research Institute in Montreal, reveals a strong trend towards geographical concentration of the French-speaking and English-speaking populations of Canada. The study, entitled **Canada's Official Language Minorities**, is based on data collected before Quebec legislated French as the official language of work and education for most residents of the province. According to the study, the bilingual population of Canada is concentrated in a narrow belt extending from northern New Brunswick through southern and western Quebec and northern and eastern Ontario. The data shows a trend toward almost exclusive use of French in northeastern Quebec, and of English in the rest of the country.

Two English-speaking universities are recognizing the importance of French for their graduates. The University of New Brunswick is now offering a program leading to a certificate of proficiency in French. It will include four required full-year courses offered in the regular session and in extension classes. The University of Western Ontario is offering a new program leading to a diploma in practical French which includes core language courses, optional interest courses and a required period of study or work in a French milieu. The program is open to anyone interested including students registered in degree and professional programs.

## Lay advisers for Commerce at UBC

Thirty-eight senior business, labour and government leaders have been named to an advisory council to the faculty of commerce at The University of British Columbia. The council includes representatives of the Teamsters Union and International Woodworkers of America, deputy minister of transport, Sylvain Cloutier and presidents and senior administrators of industry from across the country. Meeting twice a year, the council is expected to provide the commerce faculty with support, advice and criticism about its programs and courses.

## IDO director

Dr. Michael Oliver, president of Carleton University, has been appointed director of the International Development Office being established by the Association of Universities and Colleges of Canada.

Dr. Oliver, a past-president of AUCC, assumed his new duties on a half-time basis in September, and will devote his full time to the new office early in 1979.

The International Development Office is being created as an integral part of the AUCC Secretariat to enhance the role of Canadian universities in international development. The IDO will be funded by the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC) for a three-year period at the end of which a review of its activities will be conducted and a decision taken on its future.

At the outset, it will serve mainly as an information clearing house between the universities and Canadian and foreign agencies involved in the international development field. Its major role will be to make the universities aware of the opportunities that exist for their being involved more in the international development field. It will also encourage the universities to develop institutional policies in this area.

## CAUBO head new finance director

Kenneth Clements has been appointed Director of Finance.

Mr. Clements, of the Association of Universities and Colleges of Canada, executive director of the Canadian Association of University Business Officers (CAUBO), an associate member of the AUCC, will continue to hold that position in addition to his duties with AUCC.

The cross-appointment should benefit both organizations through shared services, improved communication and more effective use of the combined expertise represented by each association, said Dr. Claude Thibault, executive director of AUCC.

Mr. Clements has been executive director of CAUBO since the national office was established in 1973. Prior to that he was assistant vice-president and comptroller of York University and lecturer in the school of business.

## Task force report on university purpose released

The board of directors of the Association of Universities and Colleges of Canada has released the report of its task force investigating the nature and purpose of the university.

The study takes into account three issues in contemporary post-secondary education:

The economic situation which calls into question the value of the high cost post-secondary system with its uncertain economic benefits;

The changed nature of the secondary school curriculum; and

The decline in the traditional university-age population.

In discussing these issues, the study focuses on four aspects of post-secondary education:

Admission policies;

The relationship between university programs and career opportunities;

Continuing education; and

The relative roles of universities and community colleges.

Acknowledging the criticism leveled at universities in recent years, the report presents an analysis of the relative value of general arts and science programs, professional training and postgraduate studies.

The task force makes 30 recommendations including an endorsement of the concept of universal accessibility to university education for qualified persons. As a means of acting on many of its recommendations, the group suggests the establishment of a national institute of higher education that would be separated from political concerns. The institute would advise the Council of Ministers of Education, Canada on policy issues. The report suggests that an agency is needed to provide an overall view, do research, define problems at the national level, identify policy vacuums, and provide the CMEC with the necessary information to make recommendations to their respective provincial governments.

To encourage greater student mobility, the task force suggests that a system of international restrictions that increased student mobility would foster a sense of national unity.

## Reye's Syndrome

Cont'd from Page 13

Dhiansiri showed pictures of families at the shelters with food and insecticides in close proximity and young children nibbling on pesticide dusted cucumbers. It is the practice now to spray the cucumber and bean crops, and a long standing tradition to give infants over the age of six months cucumbers on which to gnaw after teething begins.

"I would like to emphasize that our cases of Reye's syndrome do not occur in infants under the age of six months."

Domestic water is obtained by the rice farmers from shallow holes to which the frequent rain is channelled from fields and terraces. If pesticides are used, the water is certainly contaminated.

Dr. Dhiansiri offered an explanation for the seeming cut off age of six years at which Reye's occurs in Khon Kaen province.

All children are required by law to go to school at seven years of age. Schools open at the start of the rice-growing season. This makes the children stay out of the rice paddies, consequently they get less, or no exposure to pesticides.

"The occurrence of Reye's diminished after seven years of age."

He compared the Khon Kaen province and Bangkok city experiences. The province with a population of 1.2 million people averages 80 cases a year; the city with a population of 4.8 million, averages 50 or fewer cases a year, because of the greater awareness among Bangkok's pediatricians, cases are less likely to pass unrecognized.

As a result of the international conference, more information will be exchanged between the groups pursuing different lines of investigation.

A tissue and data bank was discussed, but its establishment was deferred until its location and financing can be decided on, and safe transport and storage of specimens assured. Collaborative study by different research groups should be stabilized and working before funding could be considered by any federal agency.



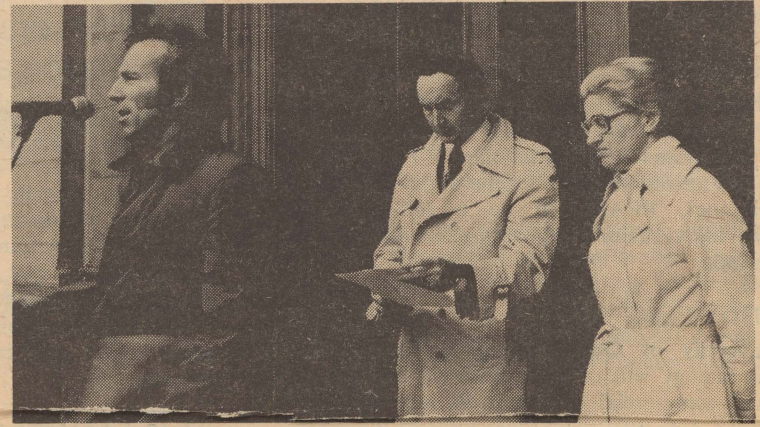
A snatch of history: Dr. Mairi Macdonald, sister of Dean Ronald St. J. Macdonald of Law, chats with the wives of the four past Deans of Law at the 95th anniversary reception in September. From left to right are Dr. Macdonald, Mrs. Horace E. Read, Mrs. Vincent C. MacDonald, Mrs. R.T. Donald, and Mrs. W. Andrew MacKay. (Wilkins Slopek photo)



Prof. A.E. Anton, the Horace E. Read Memorial Lecturer for 1978, attended the reception celebrating the 95th anniversary of the Law School, held at the Lord Nelson. [Wilkins Slopek photo]



Dr. Frances Halpenny [left] discusses a point with Doreen Fraser of the School of Library Service after presenting a lecture on the Dictionary of Canadian Biography. [Cameron Photo]



Theatre Department chairman Lionel Lawrence [left] at the Arts Day demonstration outside Halifax City Hall. Dr. Owen Carrigan [centre], president of St. Mary's University, read a statement from the 1812 Committee to deputy mayor Brenda Shannon and the assembled protestors. [Cameron Photo]

PRIZE CROSSWORD

The prize crossword puzzle appears in each issue of the monthly UNIVERSITY NEWS.

\$10 will be awarded for the first correct entry opened; this does not necessarily mean the first correct entry received in the Information Office.

All members of the university community—faculty, staff, students and members of affiliated universities and Dalhousie alumni—are eligible. Those involved in the production of UNIVERSITY NEWS are not eligible.

Entries for the monthly puzzle must be received no later than two weeks from the date of the puzzle's publication, and they should be sent to **CROSSWORD**, University News, Information Office, Old Law Building, Studley Campus.

The winner of the September - October monthly crossword (No. 2777) was **Mr. Laurence Harris** (Psychology).

SOLUTION TO  
NO. 2777

CROSSWORD No. 2777  
Across: 1. Roadmaps; 5. Metier; 9. Treasure; 10. Barnum; 12. Abuse; 13. Inundated; 14. Second nature; 18. Interminable; 21. Overwound; 23. Grime; 24. Cerise; 25. Shutters; 26. Sidney; 27. Cypriots.

Down: 1. Rattan; 2. Avenue; 3. Musketeer; 4. Parsimonious; 6. Eland; 7. Ignatius; 8. Remedies; 11. Curds and whey; 15. Alligator; 16. Divorces; 17. Ethelred; 19. Pinero; 20. Feasts; 22. Waste.

CROSSWORD

ACROSS No. 2778

- 1 Garage worker who confounds the radio quiz residents? (5-6)
- 10 Very hard to find in Wales. (5)
- 11 One example of flower power? (9)
- 12 It can easily be persuasive in a manner of speaking. (9)
- 13 Man takes a great deal from a slave. (5)
- 14 Old soldier and countryman? (6)
- 16 Match-box may set a precedent for the future! (4-4)
- 18 Dislike a translation. (8)
- 20 Leaves supporter in subordinate division? (6)
- 23 Old poet really scores in America. (5)
- 24 It measures in feet, presumably. (9)
- 26 Past theatrical performances cause upsets. (9)
- 27 Kitchen compass? (5)
- 28 Flirt could be Ralph, er ... Enid, er ... anyone! (11)

DOWN

- 2 Foreign friend gets signal to proceed to another foreign friend. (5)
- 3 Seen jumping around wrecked hut, all of a bubble! (7)

- 4 Inclining to be like a violinist (6) . . .
- 5 . . . making Ted learn—but with horns? (8)
- 6 Someone talking about you—within listening distance? (7)
- 7 In a way, following the 'atest trend. (5, 1, 7)
- 8 Ball collapses in water or in impressive farm building. (4, 4)
- 9 The mounts to put your shirt on? (7-6)
- 15 Team race—kind of Devon speciality. (5, 3)
- 17 One of the soldiers of a body. (8)
- 19 Withdraw from the competition, having no handicap. (7)
- 21 Engineer gets the signal with compunction. (7)
- 22 Inventor with no pretensions at all if you look at it one way. (6)
- 25 Stretched for time? (5)

