

## Sports Medicine an exciting development

There's a new branch of medicine in town—Sports Medicine.

It's an exciting development.

It's one in which discoveries are being made almost daily.

It's one in which improvements in techniques for prevention, protection and treatment are continuously being made.

The Sports Medicine Clinic is the first of its kind in the region.

Based in the Victoria General Hospital, with a branch in the Dartmouth General Hospital, the clinic is a dream come true for Dr. William Stanish, its co-ordinator.

Bill Stanish, twice a Climo Award winner [1965, 1967] which goes annually to the top male athlete at Dalhousie, and recipient for 1969-70 of the Malcolm Award, the top and most prestigious honor any athlete scholar can get at the university, decided when he went into Dal's medical school that he was going to specialize in sports medicine.

Now, in addition to a flourishing private practice, he has achieved his goal; but he's not finished yet. The Sports Medicine Clinic cannot help but grow. And as it does, the team of Dalhousie faculty experts now assisting Stanish, will also grow in stature and knowledge.

Why is such a clinic needed?

Because sport today is bigger business—and entertainment—than it ever was.

In Canada alone, sporting events mean a cash flow in the millions. And injuries to athletes can be costly.

University News staffer Kate Carmichael explains it all on Page 7.

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Dalhousie's United Way organizer, Earl Wambolt, wants this year's staff contributions to be a lot better than last year's.

"United Way guidelines indicate people should be able to afford \$8 a year—and if we get that much in payroll deductions here, we can far exceed last year's total Dal contribution."

The 1978 tally: \$11,098, from 126 contributors in the university. The potential: About 3,600 contributors.

[Wambolt's plea: Page 2]

## Support

# DALPLEX



Mike Ellis takes the lid off for CBC's Bill Mitchell at the kick-off of the DALPLEX campaign. Dr. Ellis, director of the School of Physical Education, was describing the new centre to Mr. Mitchell; the model's roof is removable; below it is the field house floor plan. (A/V Services)

## DALPLEX off to good start: \$700,000 in

The DALPLEX campaign is off to a fine start.

At the official launching of the campaign in support of the Physical Education, Recreation and Athletic Centre, two weeks ago, the president, Dr. Henry D. Hicks, announced that already the target of \$3,375,000 had been reduced with "a substantial lead gift" to the order of \$2,750,000.

"This has got us off to a good start."

Dr. Hicks told the assembled audience of members of the Board of Governors, Fund Council, volunteer alumni workers, officers of the university, representatives of the School of

Physical Education, community organizations and news media, that the organizers hoped to wind up the campaign in three fiscal years.

"Many of you know of the vicissitudes we've had in getting approval to go ahead with the construction, involving long, drawn-out negotiations and lawsuits involving the City of Halifax.

"I am confident myself that when the building is completed it will be acknowledged, perhaps reluctantly and after a while by some, that there was no way we could have made use of the site, surrounded as it is by residential property that would be less disruptive to the neighbourhood.

"I feel that very confidently, and I think we should bear this in mind

when we proceed with our canvassing.

"There will be only one entrance, except for emergency exits in case of fire or some calamity like that, and it will be on South Street, and access will therefore be controlled and will not constitute any additional nuisance or inconvenience to our neighbours, or noise, and we are confident that this will be the same kind of addition to the university's facilities in relation to the community that the Dalhousie Arts Centre has been, in the many activities it has brought to this community, in which not only university people but Haligonians and to a lesser extent people from all over Nova Scotia have been able to participate.

Continued on page 5

### In the next issue of UNIVERSITY NEWS

The progress of the DALPLEX campaign, and a progress report on the construction of the Physical Education, Recreation and Athletic Centre.

Drug-related problems in humans—explained by Dr. Jean Gray, of the Department of Pharmacology.

Pierre Page discusses Canada's decline in international hockey, and puts forward possible solutions.

Law professor Clare Beckton writes about the Quebec issue.

The Importance of Being Curious—by Dr. Douglas W. Russell, professor of biochemistry.

Economist Paul Huber says magnetic levitation, a new mode of ground transportation, will move us at 300 mph by the year 2000.

All about acoustics—with Professor Arthur Levin.

# UBC Dean of Women new president of Mount St. Vincent

Dr. E. Margaret Fulton will be Mount Saint Vincent University's next president.

Dr. Fulton, who will succeed Sister Mary Albertus in July next year, is Dean of Women at the University of British Columbia, a post she has held since 1974, the same year she was appointed associate professor in the faculty of education. She also teaches in the women's studies program. In addition, Dr. Fulton supervises student services.

## United Way: Please pledge generously

Fellow Employees:

It gives me great pleasure that President Hicks has asked that I serve as "Loaned Executive" to the United Way campaign for a second year.

The United Way is a united campaign to provide financing for 36 agencies offering over 250 different services in the Halifax-Dartmouth area. The 1977 goal of this campaign is \$1,144,093 to provide operating money for our agencies for 1978. This goal represents a 10% increase over the 1976 goal and must be attained to ensure our agencies meet their 1978 commitment to the community.

With a United campaign we reduce campaign and administrative expenses to ensure a greater portion of your pledged dollars reach the charitable agencies of the community. Of the monies collected, 87% is turned over to the individual agencies, 5% covers campaign expenses and 8% covers the United Way administrative expenses.

The Employees' Payroll Deduction Division of the United Way campaign constitutes 20% of the total United Way goal for 1977, and therefore relies on your individual pledges to ensure a successful campaign.

For this Division of the United Way campaign, we prefer pledges for payroll deduction, but are prepared to accept lump-sum donations by cash, cheque or post-dated cheque, and if preferred, your donation can be labeled for any of the individual agencies under the United Way.

Please complete the enclosed pledge generously and return (in confidence)

A native of Birtle, Man., Dr. Fulton received her doctorate from the University of Toronto, a Master of Arts from the University of British Columbia and a Bachelor of Arts degree from the University of Manitoba. She has been a member of the faculty at UBC, Wilfrid Laurier University, the University of Toronto and York University. In the early 1960s she was head of the English department of the Collegiate Institute at Thunder Bay. Her experience also includes teaching in public and secondary schools in Manitoba and Ontario.

At UBC, Dr. Fulton has been instrumental in forming a women's academic association and in organizing a number of programs to improve the position of women at the university. She has worked in the area of applied science to interest more women in engineering and to change the image of the engineering students. As Dean of Women, she has been closely involved with student undergraduate associations and has assisted women students to form a strong student women's committee.

She is a member of several national academic and administrative university associations and last year helped to organize a world youth conference (paralleling the Habitat conference) at UBC. Her academic expertise lies in Victorian and Canadian literature and women's studies courses focusing on women in literature.

to the undersigned, either directly or through your departmental secretary. Remember, a pledge through payroll deduction would hardly be noticed on your pay cheque, but any pledge of any size will help the United Way meet its 1977 goal and 1978 commitments to the charitable agencies.

Sincerely yours,

Earl J. Wambolt  
Assistant to the Controller

P.S. After attending some of the agency visits arranged for the volunteer workers, I have no hesitation in repeating my last year's pledge of \$10 per month to the United Way campaign.



Lord Hailsham, former British cabinet minister and Lord Chancellor, eminent legal light and public servant, as he appeared before an overflow audience at the Law School earlier this month. The west, he said, was halted between two inconsistent theories about what democracy is. Both claimed to be democratic; both offered universal suffrage; both had prophecies which were incompatible. "It's a problem of freedom and a problem of justice, and how to reconcile these."

[Photos by Roger Langille]



A bursary of \$1,500 was awarded last month to Jean Hughes of the School of Nursing by Great West Life Insurance Co. Mrs. Hughes returned this year to teach 4th year nursing students after 12 months of study at Boston University, where she received her MSc with emphasis on community mental health and psychiatry nursing. The faculty of the School of Nursing voted unanimously for Mrs. Hughes to receive the award. [A/V Services]

## IPA local government guide published

A two-year project involving intensive consultation with almost every municipal council in Nova Scotia has resulted in the publication by the Institute of Public Affairs of the handbook, **A Guide to Local Government in Nova Scotia**.

The first copy off the press was presented to Ira S. Settle, president of the Union of Nova Scotia Municipalities, by the Institute director, Kell Antoft.

Warden Settle said that the manner in which the Institute approached the task was a good example of participatory democracy.

The Canadian Council of Urban and Regional Research funded half of the project, while a group which included the Nova Scotia Chapter of the Municipal Finance Officers Association, the Association of Municipal Administrators of Nova Scotia, the Union of Nova Scotia Municipalities and the Nova Scotia Department of Municipal Affairs supported the other half.

Such topics as municipal finance, community planning, public participation, elections, public education and labour relations are covered by the contributors who are drawn from the academic, business and local government communities.

They include Kell Antoft, David M. Cameron, John R. Cameron, A. William Cox, Hans J. Foerstel, G. Arthur Hillier, David A. Hope, Gerald J. McCarthy, Donald F. Maclean, J.

Roger MacMillan, James D. McNiven, K.R. Meech, H.P. Moffatt, Louis E. Moir, Jack Novack, Vernon M. Parrett, Thomas C. Rath, Harold A. Renouf, Frances Robertson, Bob Russell, Laurence A. Sandford, A. Donald Smeltzer, and Roland J. Thornhill.

Jack Novack, director of projects for the Institute's municipal administration program, said that the handbook was designed to shorten the learning time for new councillors.

"Ten video tapes are also being prepared by the Institute to act as supplementary teaching aids for each chapter.

"The province's municipal administrators have greeted this project with enthusiasm. Newly elected officials may now be eased much more rapidly into local government practices and procedures with the use of the handbook."

## CHEMISTRY SEMINARS

1:30 p.m., Fri., Oct. 28: "MPS—Malaria, Phospholipids, and 'Simplex'"—Dr. W.C. Purdy, Dept. of Chemistry, McGill.

1:30 p.m., Fri., Nov. 18: TBA, Dr. A. Cabana, Dept. of Chemistry, Université de Sherbrooke.

1:30 p.m., Fri., Nov. 25: "The chemistry of strained alkenes"—Dr. T.H. Chan, Dept. of Chemistry, McGill.

## Dal, DSA firm on 1977-78 contract stand

Both the university and Dalhousie Staff Association are taking a firm stand over a new contract.

The collective agreement between the university and the association, which represents 644 clerical, secretarial and technical staff, expired on June 30, and negotiations are still going on.

The university's case: It can afford only a 5.5 per cent increase across the board.

The DSA view: That 5.5 per cent includes the step increase for this year, an increase approved in the last contract (for 1976-77), so it would not really be a 5.5 per cent increase.

Hector McInnes, lawyer for the university on this matter, said there was confusion in the minds of the staff over the step increases. He said that the step increase negotiated in last year's contract was not an entitlement but should be considered to be a raise.

The university, he added, could only afford the 5.5% increase, the amount that they had also offered to the faculty and the operating engineers.

The university had found that the step increase system had not been satisfactory because of the confusion it caused among the staff, he said.

DSA drew up a chart of the existing salary scales, and included their projections of the minimum needed to keep pace with the Halifax cost of living increase (8.7 per cent), and what the university's offer would mean in the way of an increase (by percentage and in actual dollars) for 1977-78.

One example, for a Secretary 1, showed the existing salary in the five steps: \$6,199; \$6,561; \$6,924; \$7,286; and \$7,647.

DSA said that for those five steps to keep up with the local cost of living increase worked out at: \$6,738; \$7,131.81; \$7,526.39; \$7,919.88; and \$8,312.29.

Percentage and dollar increases relating to the university's offer on the above figures worked out at zero for the first three, .27 per cent or \$18.69 a year on the fourth, and .55 per cent or \$40.07 a year on the fifth.

Jane Mersereau, DSA president, said that DSA had not had an opportunity to state its salary demands. She felt there had been no real negotiating.

## SEMINARS

1:30 p.m., Fri., Dec. 2: "The effect of H2 photodissociation models on interstellar CH and CH<sub>2</sub> abundance"—Dr. J.L. Ginsburg, Dept. of Chemistry, St. Mary's.

**All seminars are to be held in Room 215 of the Chemistry Building.**

Earlier speakers in the seminar series included Dr. D.R. Arnold, University of Western Ontario; Dr. C. Linton, University of New Brunswick; and Dr. S. Katz, Rutgers University.

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## UNIVERSITY NEWS

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Following is the paper's publishing schedule for 1977-78:

Volume 8 1977-78	DEADLINE (5 p.m., Tuesdays)	DATE OF ISSUE (Fridays)
5.	Nov. 1	Nov. 11
6.	Nov. 15	Nov. 25
7.	Nov. 29	Dec. 9
8.	Dec. 27	Jan. 6, 1978
9.	Jan. 10	Jan. 20
10.	Jan. 24	Feb. 3
11.	Feb. 7	Feb. 17
12.	Feb. 21	March 3
13.	March 7	March 17
14.	March 21	March 31
15.	April 4	April 14
16.	April 25	May 5

## Changes in Africa

# Time for Canada to move on foreign policy

It's time for Canada to start taking notice of the changes taking place in Africa and begin to develop a foreign policy to meet future events.

This was the gist of a paper given by Professor Tim Shaw at the Third Biennial Conference of the African Association of Political Science held in Rabat, Morocco. Shaw, the only Canadian attending the almost totally African organization, was a discussant on a panel dealing with The New International Economic Order.

Africa, he said, was an increasingly unequal continent—unequal between countries and unequal within each country. It was a continent of 50 countries with growing differences between them. By the year 2000, there would be some important powers (such as Nigeria) with high rates of economic growth. Others would not grow or even regress. This

kind of situation, he continued, would lead to tension in Africa and with the nations in the western world, Canada among them.

While in Africa, Shaw's itinerary included visits to eight Canadian embassies, talks with people in Canadian missions and officials in ministries of foreign affairs.

This exchange will serve as an aid to his research project on Canada and the Third World. The study will be part of a larger effort under way by the Centre for Foreign Policy Studies, on the larger question of Canada and the New World Order.

Prof. Shaw, who serves as the director of the university's Centre for African Studies, said that many people he talked to during his visit were aware of the centre's role as a focal point for study and exchange of ideas by students and teachers.

## Thanks, says Tingley, for registration week efforts

It's thanks all round for a job well done . . .

That's the message from Registrar Arnold Tingley to departments. They co-operated admirably with his staff during registration week.

Dr. Tingley also gratefully acknowledges the assistance given by personnel from the Business and Awards offices.

The objectives outlined several years ago and ones which his staff are attempting to implement are coming closer to fruition. To date all aspects of registration procedures have been reviewed and, where possible, streamlined.

It's important to remember, he says, that students must complete faculty regulations (selection of programs and classes) as a first step to registration.

To help to smooth the way a number of mechanisms were instituted. Departmental representatives were on the job helping students to complete the preliminary phase of registration; guides were available to shepherd new students around cam-

pus; 50 extra students were hired to serve as a backup to the registration team; the Dean of Freshmen offered guidance when necessary; and a 'problem desk' manned during the entire week handled special cases on the spot.

The week before classes begin is the final time slot that students can enrol in the university without paying a late registration fee. But they have ample opportunity to register in person beginning in early spring. Failing this there is the other option—registering by mail, in which case the student receives a packet with a calendar, class approval forms, registration documents, and a detailed instruction sheet.

Dr. Tingley admits that the registration process is not a simple matter. There are difficulties and there always will be, but his office is attempting to ease the problems and where possible to solve them.

He hopes that in the long run the system will be set up in such a way so that all registration will be by mail or something very close to it.

## DABS' manual to make students feel at home

DABS? No, it's not the code name for a subversive group on campus but the abbreviation for an active society at the university—the Dalhousie Association of Biology Students.

As one of its functions, DABS issues a student survival manual. It's a worthwhile effort and one that deserves honorable mention. The handbook is aimed at assisting new graduate students to feel at home in

the Biology Department, and at the same time it serves as an update for returning graduate students.

The manual tells all. It describes the political structure of the student association; lists a faculty who's who; outlines the technical and administrative services available; offers tips on where to get the best pizza in town; and winds up with a listing of all the biology graduate students.

## U of T task force wants French

A University of Toronto task force on Canadian studies recommends that French be an admission requirement for all U of T arts and science programs within five years. The governing council's academic affairs committee will consider the recommendations.

Stressing the importance of French language training, the task force considers ability to research French documents as central to a Canadian studies program. The number of Ontario high school students taking

French dropped from 45% in 1971 to 33% last year.

The education ministers of the Atlantic provinces agreed at a recent meeting to a joint committee to study francophone education in the region.

As a service to about 3,000 francophone students on the McGill University campus, the student newspaper, *McGill Daily*, began to publish in French on Tuesdays on Sept. 20. Other issues will continue to be published in English.



The president, Dr. Henry D. Hicks, greets members of the Ghana project in Canada on a studies tour. The visitors are: Rolond Djang, K. Baffour, Ackah Nyamike, S. Daisie.



Ethel Langille, a Dalhousie MA graduate in economics, is surrounded by a team involved in the Ghana project. Ethel, who spent six weeks in Ghana working on a health economics project, looked at the qualitative and quantitative aspects of a government-operated hospital and a mission hospital.

A lab technician before she enrolled in the economics program, she now serves as university's administrative officer for the project. This means overseeing the handling of course materials, working with Professor A. Sinclair, the Canadian co-ordinator of the project, and seeing to the needs of the Ghanaian visitors on their Canadian studies tour. [A/V Services photos]

The Ghana project is CIDA-sponsored. Dalhousie's Department of Economics has joined with the Ghana Institute of Management and Public Administration in providing a series of planning and staff development programs for senior civil servants. The project is now entering its third year.



This is Professor Roy George a year ago, minus the beard he acquired during his stay in Ghana as the Canadian team leader of the Ghana project. During his eight-month visit at G.I.M.P.A., located near Accra, he mounted an 11-13 week course in budget planning, gave a course in project planning and management, and offered three refresher courses for senior civil servants. Since the project began, 60 people have been trained in project planning and management, and 17 in budget planning. Dr. George is confident that the joint Canada-Ghana program has contributed to the development of efficiency in the Ghanaian civil service.

## Computer use adds to telephone bill

The increased use of portable computer terminals on campus has brought to light a budgeting problem.

In a memorandum to department heads, Office Support Services director Bernice MacDonald, says the problem concerns the telephone equipment needed to operate such terminals.

"The university budget is at present absorbing the cost, but because of the increasing number and considering that they are used solely for educational purposes, it is logical that such . . . equipment be paid for out of departmental budgets.

"In addition, a number of departments have assigned telephones for the exclusive use of students within those departments. Since they cannot be funded through Office Service accounts, and will not be approved in future, responsibility for the cost is being transferred to departmental budgets."

Mrs. MacDonald said it was realized that such additional expense would not have been budgeted for this year, so University Services would transfer enough money to cover the additional expense.

But from next April 1, departments would have to budget for them.

## Executive, council posts for Leffek

At its meeting last June, the Canadian Association of Graduate Schools elected Dr. K.T. Leffek, Dean of Graduate Studies, to its executive committee for a two-year term, 1977-79. Dr. Leffek has also been elected to the National Council of the Chemical Institute of Canada, 1977-78.

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# Genetic engineering: Fact and Fancy

The term "genetic engineering" is almost as new to the scientific community as to the public at large. However, the concept of genetic engineering is almost as old as the human species itself.

From the dawn of primitive agriculture we have sought new varieties of domestic animals and plants exhibiting inherited characteristics which we value by means of selective breeding.

Since the turn of the century, application of the experimental approaches of the rapidly-developing new scientific discipline of genetics has markedly increased both the pace and degree of sophistication of our attempts to manipulate the inherited properties of selected types of plant, animal and micro-organism.

Quite recent developments on several fronts now offer the possibility of literally correcting some inherited defects in humans, or of creating new species of useful plants, within the near future. Application of further discoveries in these areas as a component of future medical or agricultural technology will pose many questions for consideration by humankind on a global basis.

## CURRENT DISCOVERIES

However, of more immediate and more pressing concern are recent discoveries which now make it possible to create deliberately new types of bacteria which could not previously have been developed in the laboratory, and may never have previously existed on the face of this planet. These are types of bacteria containing determinants of inherited characters (genes) of plants and animals.

Imminent applications of these discoveries in a new technology are development of bacterial strains which can synthesize human hormones such as insulin; or which can convert atmospheric nitrogen into fertilizer to nourish the plants which harbour them; or which can convert potentially disastrous oil spills into nutrient for the plankton in our oceans and inland waterways.

The recent outbreak of ongoing and often violent controversy generated by these discoveries does not reflect a belated recognition that we humans have tinkered with Nature from time immemorial. Nor is there any concerted denial of the obvious merits of a technology which could improve the quality of life for victims of inherited medical problems, or may convert platitudeous pledges to feed the starving one third of humanity into a practical proposition.

Rather it stems from the facts that the benefits are as yet only potential, not actual, and that attempts to realize those benefits require the opening of Pandora's Box.

As of this moment, no matter how probable, no absolute guarantees can be given that the benefits can be realized. As of this moment, no matter how improbable a given scientist may believe potential hazards may be, no one can state with absolute assurance that development of the technology will pose no serious hazard to society.

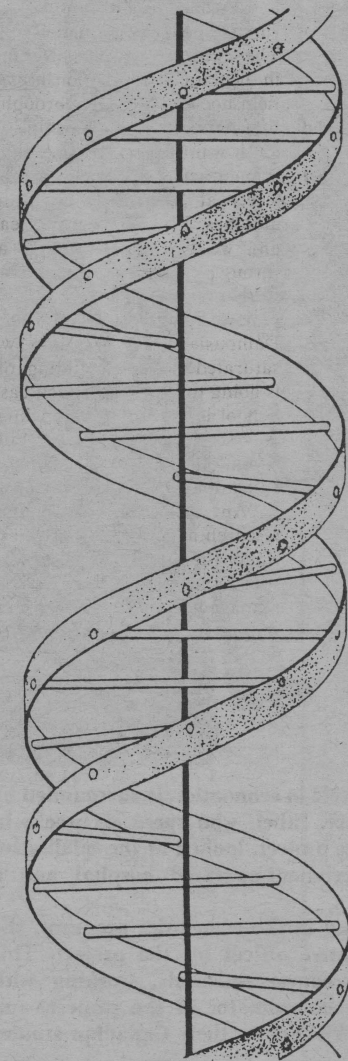
Part of the argument is political. It concerns the rights and obligations of society as a whole in determining whether research along these lines shall continue, and under what conditions. The remainder of the argument is

largely scientific. It concerns the extent of possible hazards arising from use of the procedures for creating novel types of bacterial cell. An understanding of the issues involved in this portion of the debate is essential to responsible participation in the political decision. The remainder of this article is devoted to those issues.

## DNA

All of the distinctive features and behaviour which define any one unique living organism, including ourselves, are defined by the interplay of two sets of factors. One set consists of the many and varied components which collectively constitute the organisms environment. The second set are determinants of inherited characteristics (e.g. eye colour, ear shape) which are transmitted from generation to generation in the act of reproduction. These inherited determinants we call genes.

The genes of all animals, plants, micro-organisms and most viruses consist of a chemical known as a deoxyribonucleic acid, or DNA for short. These deoxyribonucleic acids (DNAs) are extremely long, slender molecules. It may be helpful to imagine them as ladders several thousands of feet in length which have been twisted into a coiled cylinder (a helix).



A diagrammatic representation of the double-helical DNA molecule—the "helix ladder." The two ribbons symbolize the two deoxyribose-phosphate-diester chains, and the horizontal rods the pairs of hydrogen-bonded bases holding the chains together.

## OPINION

By Dr. Stan Wainwright

The uprights of these imaginary ladder molecules consist of long chains of thousands of molecules of a sugar phosphate (deoxyribose phosphate) linked end-to-end. The rungs of these ladders each consist of a pair of organic bases, known as a base-pair. There are only four types of base-pair rung in all of the DNA ladder molecules. The difference between any two genes under consideration resides entirely in the number and sequence of these base pairs in the corresponding DNAs.

The difference between two versions of the same gene—e.g. one specifying brown eyes versus one specifying blue eyes—may be as little as the substitution of one base pair for another, but may be more substantial. The difference between two entirely different genes of the same organism is entirely one of lengths and sequences of base pairs in the corresponding DNAs. Similarly, the difference between the genes of man and mouse, or man and bacterium is one of length and sequence of base pairs in DNAs.

The vast majority of the genes of any one organism are organized into even longer giant structures known as chromosomes, in which the DNA segments corresponding to the individual genes are linked end-to-end to form the molecules which can be isolated in the laboratory. For example, almost all of the estimated 3,000 genes of the bacterium *Escherichia coli* are contained in a single molecule of DNA consisting of nearly five million base pairs. This chromosome molecule is a closed circle about 1mm in circumference but only 3-tenths of one thousandth of 1mm in thickness. In contrast, most of the estimated half a million different genes of a human sex cell are distributed between 23 different chromosomes which, if fully extended, would vary in length from somewhat less than 1½ cm to nearly 7½ cm. (All other normal human cells contain 2 sets of these chromosomes and individual versions of any pair of equivalent genes may differ; in the same way that different versions of the same car differ in colour).

The remaining genes of a human cell are organized into a smaller version of the bacterial circular chromosome within an organized structure known as a mitochondrion, which reproduces itself independently of the cell nucleus and of the cell as a whole. In an analogous manner, the remaining genes of a normal cell of bacterium *Escherichia coli* are organized into independent "minichromosomes" known as plasmids. These plasmids figure prominently in any discussion of the new procedures for producing strains of bacteria containing recombinant DNA. The plasmid most frequently studied to date is large enough to accommodate somewhere between four and 12 genes of lengths within the usual range, including those which control its own independent reproduction.

In all of these structures the component genes are linked together as segments within one single molecule of DNA. Each can be considered analogous to a message recorded on tape, where independent sentences follow each other in sequence. Again it is the sequence of base pairs within the

DNA which "punctuate" the end of one gene and the start of the next.

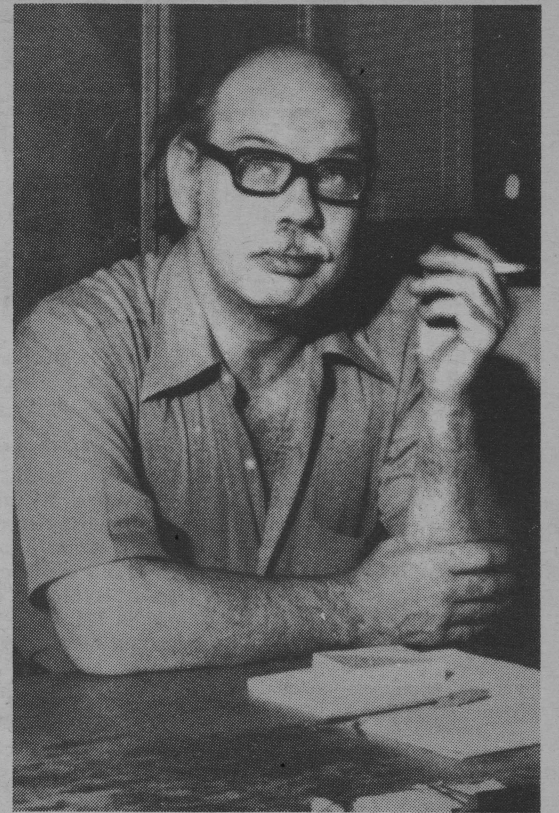
What has already been accomplished in recent experiments is to "splice" selected segments of DNA from animal cells into the plasmid DNA of *Escherichia coli*, to reinsert this recombinant DNA into living bacterial cells, and to show that it then functions as a normal plasmid. In other words novel species of bacteria have already been produced which contain selected portions of animal genes in much higher proportions than they are present in the total gene complement of the donor animal. Similar procedures have also been developed to accomplish the same objective using the DNA of a very special type of bacterial virus as the carrier or vector DNA.

Two things remain to be accomplished for realization of the new technology. Of these, the most demanding is modification of the procedures for producing and selecting the segment of animal (donor) DNA to be inserted into the plasmid (vector) DNA to ensure that it contains, but only contains, one entire gene. This is largely a matter of choosing from existing methods the one most appropriate for the gene to be inserted, including chemical synthesis of the gene (or functional equivalent) from scratch.

The second requirement is that recognition of the recombinant plasmid as normal by the host cell shall extend to production of the protein product specified by the inserted foreign gene. Studies made with cell extracts indicate that this will probably be the case, but it remains to be demonstrated.

## TECHNOLOGY POTENTIAL

The progress made to date represents a tremendous achievement. It is impossible to overemphasize the potential value of the imminent technology in pursuit of deeper understanding of ourselves as well as in its application in the fields of medicine or agriculture. Nevertheless, it is equally important to recognize that we are considering a very restricted form of genetic engineering. The size and properties of bacterial plasmids preclude the insertion of more than one, or



Dr. S.D. Wainwright, Research Professor of Biochemistry at Dalhousie, has been with the Faculty of Medicine since 1956. Cambridge and London educated, he was president of the Canadian Society of Cell Biology in 1975-76, and earlier served on the councils of that body and the Canadian Biochemistry Society.

very few, foreign genes into a functional plasmid.

Techniques based on the formation of recombinant DNAs available to date cannot be used to incorporate large blocks of animal genes into the complement of hereditary determinants of a bacterial cell. Nor is there any immediate prospect of using these procedures to manipulate the inherited properties of human or other higher species of plant and animal. Therefore alarmist scenarios in which cholera bacteria can walk or fly, or humans will grow two heads, as a consequence of application of the imminent technology can be dismissed as wild fantasies.

## HAZARD—1

The real potential hazards posed by use of this technology are of three kinds. Of these, the only one which can actually be foreseen is in the selection of the foreign donor DNA segment to be inserted into a recombinant DNA plasmid. Under ideal circumstances this DNA would be either isolated or synthesized as a totally purified material, and then rigorously checked to ensure that it contained only the one known defined gene of choice without superfluous segments of DNA base sequences. However, several circumstances can be foreseen under which the temptation to take short cuts will be extreme.

The obvious short cut in such cases is the so-called "shotgun experiment" in which all of the DNA of the donor organism is cut into fragments for incorporation into plasmids. A population of bacterial cells is then exposed to the resulting mixture of assorted recombinant plasmids produced and screened to recover those which happen to contain the gene of interest.

The problem is that many types of animal cell are known to contain genes of cancer-producing or other virus in a latent, or dormant, state. Thus, the "shotgun" experiment raises the obvious spectre of a bacterial strain able to cause an epidemic of cancer, either in humans or other species on which we are now dependent.

More important the possibility of creating such a bacterium theoretically (at least) exists for all experiments in which the nature of the donor DNA segment is not known with certainty, or the purity of the chosen segment has not been rigorously established.

## HAZARD—2

A second potential source of hazard which can be envisaged is based on the

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# DALPLEX

Continued from page 1

"Now, as the result of the delays in the construction of this building, we now have a total budget that runs to about \$10½ million, including the cost of the land and the furnishings. Of this amount, we have nearly \$7.2 million that has already been provided by the government of Nova Scotia and the government of Canada, the government of Canada's contribution relating specifically to the swimming pool, which we enlarged to Olympic size as a result of the grant from Sports Canada. That means we have to raise something like \$3.3 million to complete the building.

"This is a lot of money and we realize it's going to require a very great effort on the part of Dalhousie alumni and supporters of the university and the corporate community in Canada as well.

"I am glad to say that largely due to the generosity of one foundation, a substantial lead gift has already been received that already brings this target down, with some other contributions, to about \$2 3/4 million, so this has got us off to a good start.

"I hope that our efforts may meet with the same kind of success that Dalhorizons—the major capital fundraising campaign launched in 1970—did; Dalhorizons set out to raise \$11.1 million. At the time we set that goal, we were counting on one gift that was tied to the construction of a particular building.

That gift was of about \$3½ million, and would have been forthcoming if we could have proceeded with the building but because of the building moratorium that was imposed by the government of Nova Scotia, we could not go ahead and we did not get that gift of \$3.5 million. I think we may still get it. I haven't given up trying, and I'm not going to give up trying, and if you take that out of the \$11.1 million target, Dalhorizons did go over the top because we raised \$7 3/4 million from it.



Clark Stevens, director of budget for the State of Georgia, visited Dalhousie earlier this month as a guest of the Department of Economics. Mr. Stevens assisted in the

design and implementation of zero-base budgeting for the state when Jimmy Carter was its Governor.

Mr. Stevens is seen here with Roland Djang, deputy director, Ghana Institute of Management and Public Administration; and Sydney Wile, Secretary of the Nova Scotia Treasury Board.

[A/V Services]

# LETTERS

*The N-debate:  
If it hadn't come  
in with a bang...*

The Editor,  
University News.

Sir:

I am delighted to see a lucid presentation of a discussion of nuclear power in your excellent newspaper (Sept. 30). Unfortunately, nuclear power came into public notoriety "with a bang", and those who are harnessing it as Man's servant have had an uphill fight since Hiroshima.

When Oscar intones, at the beginning of that ghastly TV program, Six Million Dollar Man, that "We have the technology . . .", I am always reminded that the same is true of our nuclear capabilities. We can produce relatively cheap power for the generation of electricity, the propulsion of ships and a thousand other uses. With refinement of the fast-breeder reactor techniques we can even see the end of any energy crises that our world might face for thousands of years to come. Interestingly enough there are about twenty-five reactors of this type in various countries today, mostly experimental, but some actually paying their way by generating electricity.

Of course, there is a risk of nuclear war! We have lived with that risk since the end of WWII but the impending horror of it hasn't caused any more anxiety in our present day society than the introduction of fire-arms into battles involving earlier societies. All your students were born with this atomic threat hanging over them but they have still managed to enjoy a normal existence. The answer lies with control and rationality.

It seems incongruous to me that statistically some of the young people picketing nuclear-power stations, or the arrival of nuclear-powered ships in their harbours are destined to die because of the poisonous or carcinogenic nature of the coal and petroleum pollutants which they daily accept as part of their environment. We can never totally clean up these emissions as long as coal and petroleum products are used for fuels. It is entirely probable though that in the near future there will be no need for them as fuel, we already have an easily controlled substitute. What we desperately need is the general acceptance of nuclear power as a simple and inevitable necessity.

Yours very truly,  
T.E. Dagleish,  
Radiation Health Officer,  
Nova Scotia Department of Health.

Stewart McInnes, chairman of the DALPLEX campaign committee, expressed his pleasure at Dr. Hicks' announcement that "our burden has been lightened substantially, by something like \$700,000."

"It doesn't seem like a very great burden to raise the rest. We'll do our best, and we think we're going to make it."

Earlier Mr. McInnes said that he and his committee and the volunteer workers were prepared to accept the task of raising the money.

"There are some of us here who were involved to a large extent in athletics when we were at the university, so because of the very great lack of facilities we know how merited this new complex is going to be, and how much of a gap it's going to fill in the complete educational role in the university.

"There are some of us who perhaps did not participate in athletics to the degree that others did, but perhaps that was because the facilities were not available.

"In 1961, when many of us were attending Dalhousie, there were about 3500 students. Now the total is about 9,000, plus faculty and students, giving

a sum total of about 12,000, not to mention that this centre will entertain the use by the community and the alumni to a very large degree. The first prerequisite, of course, is to cater to the immediate demands of students attending the university, but I am persuaded that there will be considerable time devoted to the alumni and the community as a whole.

"We have a number of different segments in the campaign organization, and will be making different types of appeals, to the alumni, to the community, to corporate bodies in Halifax and throughout Canada.

"We have the Major Gifts Division, which is headed by F.B. (Ted) Wickwire, one of the strongest of the alumni athletic community. G.E.C. (Ted) Brown heads the Special Names Division; he has under his wing about 50 people. To them, a special thank you.

"A usual question in any campaign such as this, 'How much is it going to cost to raise the money?' Normally you hire public relations groups and often spend 5% of the goal, but the only monies we're spending are on the brief

brochure that is before you and some other inexpensive printed materials.

"We're especially indebted to Bruce Irwin and Derek Mann of the Dalhousie staff, who have spent many hours in the last two months trying to put the campaign into shape so that we could be before you tonight, and we owe them a very extra-special debt of gratitude because they've gone above and beyond the usual concerns for which they're employed at the university, and they've done all the necessary things in connection with the campaign."

Dr. Michael J. Ellis, Director of the School of Physical Education, told the audience that the school had a complex and varied mission.

"It deals with teaching and research and service, and I want to give you a survey of those programs. Many of you participated in athletics in the past, so starting with the most familiar, we have our athletic and recreation programs, organized around the catchphrase, "Sport For All." We participate at Dalhousie in 23 Varsity sports, and last year we won 11 of the conference championships. The Tigers and the Tigerettes are the 'winningest' varsity sport teams in the conference. The soccer Tigers were silver medallists in the national championships, and the field hockey Tigerettes brought us our first national championship.

"I want to emphasize that recreational activity is engaged in at three levels at Dalhousie, in addition to athletics. We play at it, we learn how, and we provide structured activities through intramurals and extramurals.

"No one needs to be left out. Last year we reached about 40 per cent of Dalhousie's people, and we were saturated. The new building, of course, is going to make life much easier. The School is heavily involved in research and service, in studying skill acquisition, fitness, biomechanics, health education, and activity for the disabled.

"An area on the boundary of research and service that will open up when the building is ready involves sport medicine and sport injury management, in association with the proposed Nova Scotia Sports Medicine Clinic.

"We also serve as a mini-Sport Nova Scotia to 21 extramural sport clubs that organize themselves to provide activities at all levels. A most successful club is fencing, which in its own right belongs to Sport Nova Scotia, and thus facilitates the continued participation of fencers when they leave the university.

"We also deal with people who haven't yet become Dalhousians—sport development camps. We plan to have 40 such camps this year. In addition, we also have leisure time classes—learn-how classes. Last year we ran 21 of them.

"In addition, we offer a most important service through our children's developmental clinic, where children with motor or social difficulties are given an opportunity to develop through fun activity with student clinicians who are learning how to deliver services to the damaged and the disadvantaged. This is a

# AN APOLOGY

University News apologizes to the President and the four vice-presidents, particularly to Dr. Guy R. MacLean [Academic & Research], for errors in

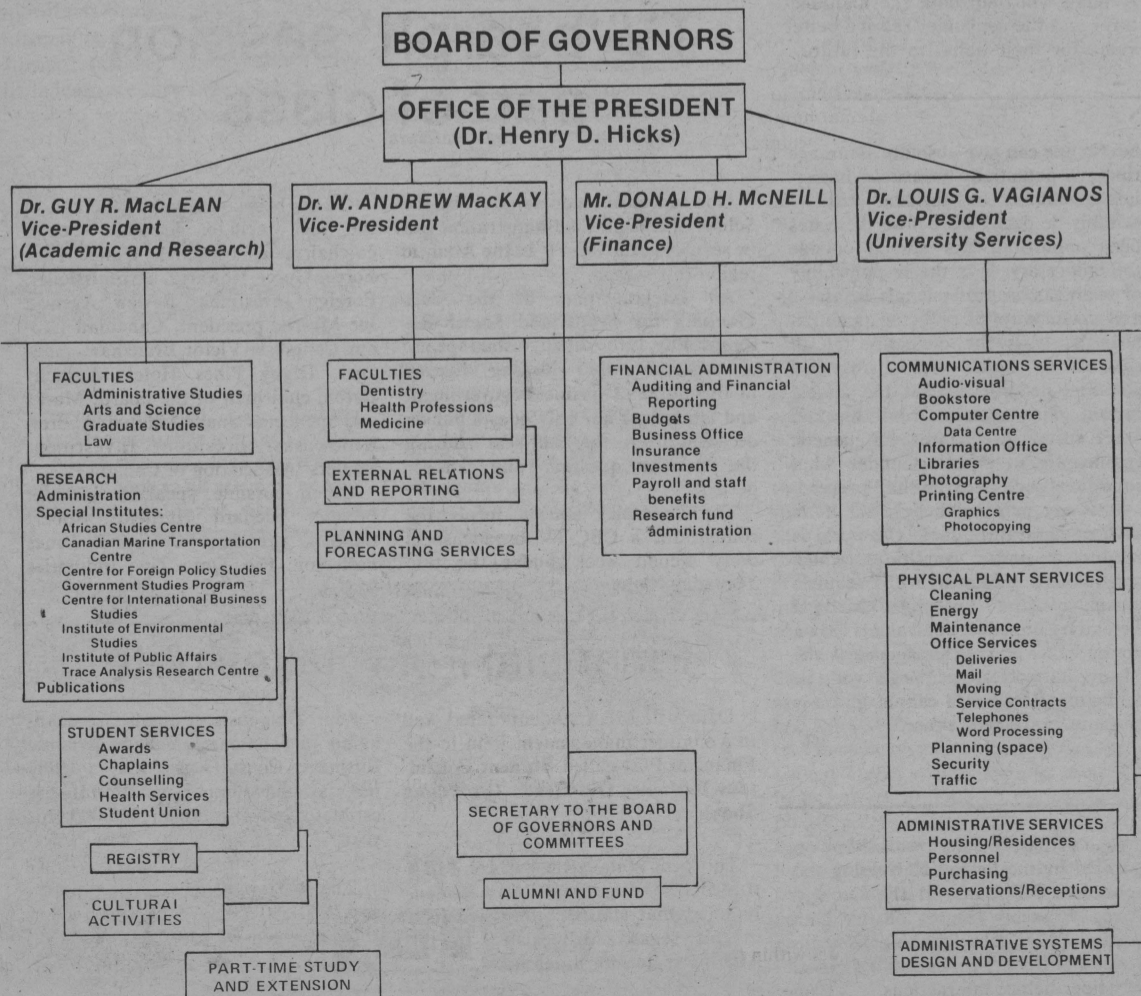
the vice-presidential organization chart [Page 3, Oct. 14 issue].

Omitted from the list of responsibilities of Dr. MacLean were Law

[under the Faculties section], and Part-Time Study and Extension.

The page in question was not properly proofread.

Corrected chart appears below.



# Dal's MBA students filled the bill —around the world—last summer

Thirteen MBA students from Dalhousie had a chance to put their book learning to work last summer. Thanks to the Trade Commissioner Service of the Department of Industry, Trade and Commerce and Dalhousie University's Centre for International Business, students were posted to centres in the U.S., Europe and Central America. Not only did they perform very well, but evaluators for the program suggest that these students

could fill the bill as junior managers or foreign service officers.

Following preliminary training which included seminars in international business problems as they related to the specific areas of their posting and intensive language instruction they were off on assignment to various destinations.

The students gained experience and insight into the world of international business; had an opportunity to

observe IT&C's role in developing Canadian exports; and learned first hand how to assist Canadian firms in their exporting endeavors.

One student, Lorraine Gailey, who was assigned commercial officer duties at the Dusseldorf Trade Fair, came away with a greater awareness of the problems related to import duties, value added taxes on Canadian exports. She also had an opportunity to compare Canadian

goods, equipment and methods with those of competitors.

Bruce Cameron spent the summer in Guatemala. He managed to assemble written material—a marketing opportunity report and a handbook for Canadian exporters containing information for Canadian firms interested in doing business in Central America. He also did a study on optimal transportation routing of various exports to the territory.

Internships and field experience are key components of the Centre's teaching program. Although language is a problem, the centre's director says the project will continue to be actively encouraged next year.

Following is a list of the students, their posting and duties.

J. Andrews, San Francisco, chemical marketing survey; G. Campbell, Los Angeles, assisting with industrial development services, marketing sur-

veys; B. Cameron, Guatemala, general duties of commercial officer; J. Cuthbertson, Costa Rica, market survey for chemicals and industrial raw materials; L. Fuwa, Detroit, survey of castings and forgings market; L.V. Gailey, Dusseldorf, trade fair: general duties of commercial officer; L.F. Geddes, Madrid, general duties of commercial officer; W. Harms, Hamburg, study of West Berlin as prospective market for Canadian goods; J.C. Landry, Philadelphia, survey of Philadelphia fish and seafood market; R. Neogy, Paris, survey of aerospace firms at Paris Air Show to identify possible industrial co-operation opportunities with Canadian firms; S. Plummer, Minneapolis, market research projections for Canadian exports. (lumber, fish etc.); M. Purves, Dallas, general duties of commercial officer; J. Rankin, Mexico City, awaiting report.

## Nutrition value: Consumer prefers scoreboard format

As the cost of living increases and the housewife is forced to seek better value for her dollar, food companies are beginning to look for the most effective method of presenting the nutritional value of their product to the buyer.

Is the buyer interested, can she properly use the information once she has it, can she remember it from one purchase to the next?

These are some of the questions,

Dr. Ken Kendall was able to begin to answer from results of research he recently conducted.

Using a canned vegetable, a fruit drink, and a snack product, Dr. Kendall tested three methods of presenting nutritional information in advertising. Two of the methods, nutritional information and nutritional index, gave a detailed breakdown of the products' values, while the third, nutritional scoreboard, gave one

overall nutritional value.

Dr. Kendall found that the subjects in his study, all adults from Halifax, seemed to prefer the scoreboard format of presenting information. They were able to recall the values more accurately and showed less confusion when asked to rate the nutritional value of the product against other products.

With the two other formats, the ability to recall the values decreased and the confusion factor increased. This could suggest that the subjects were not concerned with the values and thus 'tuned out' the information or that they did not understand the information given to them.

The research also showed that the subjects were more willing to pay for product advertising in magazines rather than on television. In fact, they were willing to pay 45 cents on the weekly grocery bill for magazine advertising, but would pay only 25 cents a week for television promotions.

As the competition for the consumer market becomes tighter, the methods of relating nutritional information must become more sophisticated. The consumer must become better attuned to the kinds of information available to him.

Research like this done by Dr. Kendall will help both the manufacturer and the consumer receive better value for their dollar in the future.

## Enterprise '77 aims to improve business, jobs

Businessmen in Atlantic Canada will have an opportunity to sit in on a conference of special interest to them later this month when findings related to this region are outlined as part of the federal Department of Industry, Trade and Commerce Enterprise '77 program.

Enterprise '77 is a special IT&C initiative designed to examine and promote the ongoing programs and services of the department with a view to enhancing business development, to foster industrial competitiveness, and to stimulate job growth.

To this end specially-staffed IT&C teams have launched a series of conferences, fairs, exhibits, seminars and interviews to communicate the

full range of assistance programs and services to as many Canadian businessmen as possible.

The Atlantic conference which is entitled Dynamics of Business - Government Interface in the Atlantic region will take place beginning at 12:30 pm today (Oct. 28), at the Holiday Inn.

Special speaker for the meeting will be F.J. Chambers, assistant deputy minister (economic and policy analysis) for IT&C, Ottawa.

The one-day conference is sponsored by Dalhousie University's School of Business Administration, its Centre for International Business Studies, and the Atlantic Schools of Business.

Continued from page 4

analogy between a chromosome and recording tape. If a segment of tape containing one complete sentence is spliced into a second tape at random that insert will in most cases still be heard as a discrete and complete sentence. There is, however, a finite probability that the insertion will appear to complete a sentence conveying a meaning different from that intended by the two component parts.

In an analogous manner, there is a theoretical possibility that donor DNA inserted into a recombinant plasmid will fuse with the recipient DNA to generate a new functional gene of unknown properties without proving lethal to the host cell. Present knowledge leads us to believe that the chances of this happening are extremely small. However, we do know of several recognizable genes which appear to have arisen during the course of evolution as mutations in which parts of two separate genes fused. The possibility therefore cannot be dismissed and the possible consequences cannot be predicted.

### HAZARD—3

The third recognized potential source of hazard affords even less ground for quantitative estimates. If we compare the major processes which occur in bacterial and animal cells we can readily see common basic patterns. However, there are significant differences in detail between the ways in which bacteria do things and those of the animal cells. It has been suggested that these differences have arisen, and been retained, during the course of evolution as a means of effectively preventing the transfer of genes from plant or animal to bacterium, and vice-versa. If this should indeed be the case we can only speculate upon the possible consequences of such gene transfer.

All we can say with certainty is that we know of no living organism which shows evidence we recognize that it has ever taken place in the past. The possibility of a natural barrier against transfer of genes between bacterial and plant cells is entirely hypothetical at this time. However, the techniques used to produce recombinant DNAs are deliberately designed to breach the barrier if it exists.

### PROFESSIONAL RESPONSIBILITY

At this time no one can say with certainty what the extent and precise nature of the hazards inherent in the production of recombinant DNAs may

be. No one can give absolute assurance that any potentially hazardous bacterium produced by accident will inevitably be destroyed before there has been opportunity for spread outside the laboratory. It is the responsibility of scientists as professionals to assess and devise ways of reducing potential hazards. It is the obligation of all citizens to balance the unknown potential hazards against the almost certain gains to arise from this and other future procedures for genetic engineering in deciding under what conditions such research shall proceed.

It is my personal belief that if all such research throughout the world is conducted under conditions which scrupulously conform with requirements of the Canadian Medical Research Council (or equivalents drawn up by U.S. and U.K. agencies) the hazard to society at large will be negligible. But then, I cannot give any absolute guarantees either.

A one-day faculty workshop organized by the School of Nursing was scheduled for today, at the Dresden Arms. Francois Hache, of the University of Manitoba, was to present his version of Robert R. Carkhoff's model of helper-helpee interactions.

## They expect starting salary of \$16,500

The September issue of *Financial Post Magazine* reported the findings of an MBA graduate opinion poll conducted at six Canadian business schools.

Here's how the Dalhousie sampling was rated.

Dal's graduates quoted \$1000 above the national average of \$16,500 for a starting salary. They were also \$1000 over the national average of \$30,855 when it came to estimating their salary in five years.

Sixty-nine per cent of the school's graduates hope to own their own business, but it will take 10-19 years before they do. This is a long haul and

Director John Scheibelhut interprets this as meaning that the grads will earn their money elsewhere before returning to set up shop in the Atlantic region.

The MBAs came second highest among those who intend to stay five years or more with their first employer; more than half of those interviewed want to work in the larger cities; and a fair number of the respondents (30 per cent) said they would be reluctant to relocate to another province if asked to do so by their employer. On this last point, Scheibelhut was quoted as saying—"We don't encourage high mobility. . . our people are more conservative."

## TV 'bearpit' session part of class

One aspect of a course given by the School of Business Administration can be seen live on CBC-TV in the Atlantic region this season.

An integral part of the class *Planning for Profit and Social Responsibility*, is the distinguished speaker segment when leading figures in the world of business, government and labour are not only guests but on occasion are in the "hot seat" during the student question and answer period.

The "bearpit" session forms the content for a CBC-TV broadcast in every second week under the title *Thursday Night*.

Guests between now and the end of the year include: Jean-Luc Pepin, co-chairman, National Unity Task Force; Gorce Howarth, commissioner, Foreign Investment Review Agency; Joe Morris, president, Canadian Labour Congress; Victor Bradshaw, manager, Digby Pines Hotel; Anthony Orton, chairman of the board, Marks and Spencers Canada Limited; Andrew Kniewasser, president, Investment Dealers' Association of Canada.

Other possible speakers include: Premier Richard Hatfield; Robert Banden, president CN; and James Patterson, Rio Tinto Zinc Industries (U.K.).

## Financial Post takes note

Dalhousie MBA students fared well in a summer management item in the *Financial Post* called *Student Consultant Business: Old Heads On Young Shoulders*.

The focus of the article was on MBA students advising small businessmen. It noted that student professionalism in this regard had existed in the Atlantic region for a decade.

Four Dalhousie students are managing a company called Atlantic Business Consultants. It's a fully incorporated summer operation that is estimated to gross about \$25,000 this year.

The article mentioned that ABC's fees (\$80-\$90 a man-day) are far below those charged by professional consultants.

Support

**DALPLEX**

**NEW SPORTS  
MEDICINE  
CLINIC'S  
GOALS:**

For the anxious mother of a little league player or a mosquito, a sports injury is a nightmare she must hope is never played out.

For the college halfback, an injury can be the shattering of a dream of a future professional career.

For the professional goalie, an injury can mean the end of a personal financial era.

# Keeping athletes in shape and out of trouble

Sport has become a corporate giant. As a form of entertainment, millions of dollars a year are reaped in Canada alone. Millions of dollars are spent, from the little league mother to the professional hockey team, on sports equipment. As a source of endorsements; we watch Scotty Bowman advertise skates, Pete Rose promote after shave lotions, and Joe Namath sell frying pans and deodorant.

The sports personality is the hero of the Saturday afternoon arm-chair quarterback, the suburban housewife, and the youngsters on the open rink dreaming of Guy LaFleur careers. Sport has also taken another angle as we are continuously told that the average 40-year old Swede is in better physical shape than the average 20-year-old Canadian.

Suddenly Canadians have taken to Adidas, racing striped running suits and sweaty towels, jogging every free moment in an answer to the "Participation" challenge.

By  
**Kate Carmichael**

With the development of this new industry has come the demand for a new branch of medicine—Sports Medicine. The phrase 'sports medicine' quickly brings to mind Bobby Orr's knee, Joe Namath's knees and legs, Cat Fish Hunter's arm, and Joe Barnes' separated shoulder.

There are however, needs for special consideration of athletes at all stages of their growth and career. The extensive use and strain put on muscles used by the athlete result in what is known as the 'over-use' syndrome, which manifests itself in injuries hitherto unseen in the field of medicine. Jumper's knee, tennis elbow, or little league elbow are only a few.

Now Halifax has a Sports Medicine Clinic. It was established last spring.

Operated by a team of Dalhousie experts, the clinic offers the injured athlete a forum for discussing and correcting his problem.

The clinic, located in the Victoria General Hospital with a branch soon to be established in the Dartmouth hospital, is open to all athletes, be they dancers or weight-lifters, who find that they are unable to perform to their op-

timum due to injury. From the point of view of the physician, the Sports Medicine Clinic allows for a forum for research, the results of which will allow him to better treat and advise the athlete.

Dr. William Stanish, the coordinator of the clinic, is a member of the Faculty of Medicine at Dalhousie, and an orthopedic surgeon. He served as an attending physician at the 21st Olympiad in Montreal, is the medical co-ordinator of the Flying Wheels Club of Nova Scotia (an athletic club for the physically disabled) and has been a guest lecturer in numerous national and international symposiums on sports medicine. He is an ambitious man. In the few short years since his graduation from Dalhousie (MD) and Harvard (a specialty degree in orthopedics), Dr. Stanish has developed a large practice.

*While waiting in his office one gets the sense of efficiency. The magazines are this month, not last year's; the atmosphere is one of comfort and inspires confidence. The first impression is that the antique roll-top desk dwarfs the man, but one quickly realizes that his knowledge, confidence, interest and drive cannot be easily dwarfed. There are an array of trophies on the window sill; he was the quarterback for the Dalhousie Tigers in the 1960's.*

Dr. David P. Petrie, member of the Faculty of Medicine and another orthopedic surgeon, is also there for the interview. Dr. Petrie served as the attending physician for the Canadian team at the World Student Games this year and is the team orthopedist for the Nova Scotia Voyageurs. He, too, was an athlete in his college years, and still captures some of those memories as the team orthopedist for St. Mary's football Huskies.

He plays an active role in the functioning of the Sports Medicine Clinic.

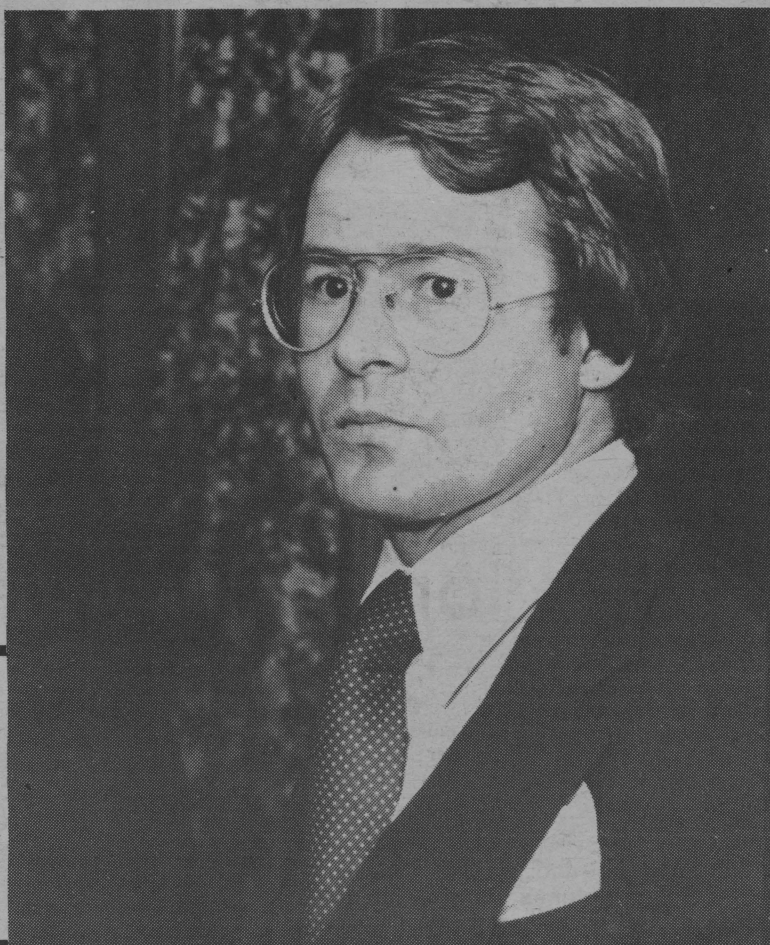
*The sun is beginning to set and is shining through the window into my eyes; my stomach growls, it's suppertime, but the two physicians don't seem to be near the end of their day.*

*Dr. Petrie's page starts to beep. His patient is being prepared for the operating room. They will continue to advise him on the progress of the preparations.*

Sports Medicine, they say, is not only a new branch of medicine; it also requires a new philosophy of treatment.

A long distance runner with a foot injury cannot afford to rest the foot while the natural healing process takes place; he wants to continue running. The role of the Sports Medicine physician is to diagnose the problem and prescribe a treatment program which will allow the injury to heal while the athlete continues his training. In the case of an injury to the foot of a runner, a building up of the sole of the shoe may result in the necessary rest to the injured area. Whatever the problem, if it is at all possible the athlete must be allowed to continue to play.

There are some sports which are damaging to the players. Football is an excellent example. The injuries in football are so extensive, says Dr. Stanish, that in some regions of Canada and the United States serious consideration is being given to ending the football programs at the amateur level. Young boys and men are suffering serious injuries while playing for their high school or college team. Rugby and soccer are quickly gaining popularity and acceptance as a replacement. Women, too, are playing it and suffering lesser injuries.



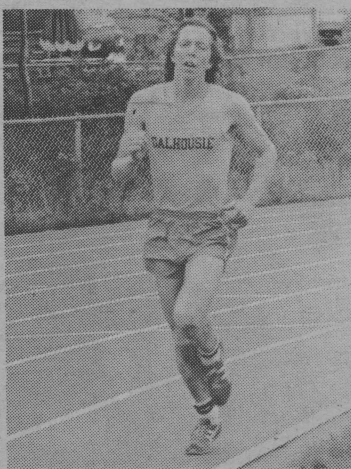
Dr. William Stanish, Coordinator of the Sports Medicine Clinic: A new branch of medicine, requiring a new philosophy.

Why is it, I ask, that football takes such a toll? Football is a collision sport, the players are often taught how to use their equipment as weapons. Their helmets and padding can inflict serious injury to another player. In rugby, however, padding or protective equipment is not worn by the players, so the players are limited as to the amount of damage that can be done with only the body and techniques of tackling are different.

Equipment is also an integral part of Sports Medicine. The choice and use of proper protective gear can often mean a sharp reduction in injuries. The mandatory use of helmets and visors by amateur hockey players has brought a striking improvement to the injury records of teams across Canada. Using statistics gathered in the testing of sports equipment, the physicians at the clinic can advise the athlete on the product best suited to his individual needs.

*Dr. Petrie's page beeps again, his patient is almost ready for surgery.*

How does the family physician fit into the new pattern of Sports Medicine? With the sudden resurgence of popularity of sports and sport-related activities, the family practitioner is seeing steadily more sports injuries. He must be prepared to recognize them.



The long-distance runner; he can't afford to rest.

The Nova Scotia branch of the Canadian Academy of Sports Medicine, of which both Drs. Stanish and Petrie are executive members, offers a series of meetings twice yearly to which GPs are among the invited.

Here they have an opportunity to listen to the specialists in the field and to discuss some of the cases that have come to their attention. The next meeting of the regional branch of the Canadian Academy will be held in Halifax in February.

*Beep. Dr. Petrie's patient is ready; the surgeon leaves.*

Stanish and Petrie have been working since 5 a.m. probably, yet still they have an infectious enthusiasm for the subject; their stamina is to be admired.

The Sports Medicine Clinic, which is their brain child, fills a huge vacuum for athletes, dancers, musicians, and jogging executives.

It is on their energy and enthusiasm that it operates.

The new branch of medicine is an exciting one. New discoveries are made almost daily. Improvements in techniques for protection and treatment are continuously being made.

Drs. Stanish and Petrie and their team of specialists at the Sports Medicine Clinic are not standing still, but are contributing to the advances being made in the field.

## THE CLINIC'S HOURS

Tues., Dartmouth General Hospital—3:30 to 6 p.m. [469-9520 for appointments]

Thurs., Victoria General Hospital 1:30 to 4 p.m. [428-2267 for appointment]

**Support  
DALPLEX**



Soccer: Gaining in popularity, safer.

The

# DALPLEX

Kick-off



The President and Dr. Ellis look on (above) as Stewart McInnes (right), DALPLEX chairman, launches the campaign.



Alumni board member Dr. Donna Curry and Fund Council member/Governor Murray Rankin.



Dr. James McD. Corston (left) and Donald McInnes, chairman of the Board of Governors, study the model of the campus.



G.E.C. (Ted) Brown, DALPLEX Special Names Division chairman, and Dr. Larry Holt, who heads the School of Physical Education's applied anatomy and biomechanics laboratory.



University architect and planner Jim Sykes, with university solicitor and former Dal athlete, Reg Cluney.



Alumni Association vice-president Peter McDonough and Mrs. D.K. Murray, alumni representative on the Board of Governors; both are Special Names team captains.



Sport Nova Scotia's Joel Jacobson.



Lawyer and canvasser Jim Gould, with Dr. Robert Tonks, Dean of Health Professions.



Frank M. Covert and Mrs. Donald McInnes.

**Support**  
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## The story of a sabbatical

**“The past twelve months have been professionally beneficial and personally rewarding... an outstanding experience...”**

*A sabbatical year, our trusty dictionary says, was Biblically a seventh year in which the Israelites were to cease tilling and release debtors and slaves. It is also a year's leave granted to university professors for study, travel etc.*

Members of the academic community take their sabbaticals in a variety of ways; the literature researcher may spend months in ancient libraries; the scientist may closet himself in a laboratory on the other side of the world.

The physical education teacher?

He's really no different, even though his work and travels and experiences may have more popular appeal than those of some of his academic colleagues.

Take John Pooley, of the School of Physical Education, for example.

Dr. Pooley went around the world on his sabbatical last year. He touched down at 12 universities in the United States, six institutions in Australia, seven colleges in Canada, plus stops in New Zealand and South Africa. Teaching, visiting lectureships, consulting work—they made up the range of his year's experiences. He also managed to write: six papers in all, three of which are in press, three have appeared, and two earlier ones have been accepted for publication.

Is that all?

Well, that's enough. But to dispel the notion held by some segments of the public that professors on sabbatical **don't do any work** and that their year away is one of rest and relaxation only, University News decided to elaborate on Dr. Pooley's travels. In the following, we quote liberally from his report to the President:

“Since leaving Dalhousie in July, 1976, I have benefitted from five kinds of experiences:

“1. **Research:** As planned, I have collected data from freshmen physical education students from nine institutions in three countries (United States, Australia and South Africa). A total of 180 male and female students were interviewed and administered questionnaires in conjunction with a broader cross-national study of professional socialization which has already involved three other countries. The average time for each interview was 50 minutes; questionnaires took approximately 40 minutes to complete. Data were collected on 195 variables. My wife, Carol, assisted me with the data collection.

“2. **Discussions:** I have had a very large number of both formal and informal discussions with fellow professionals from 35 institutions in six different countries. It has been both useful and interesting to exchange ideas on a wide range of professional topics.

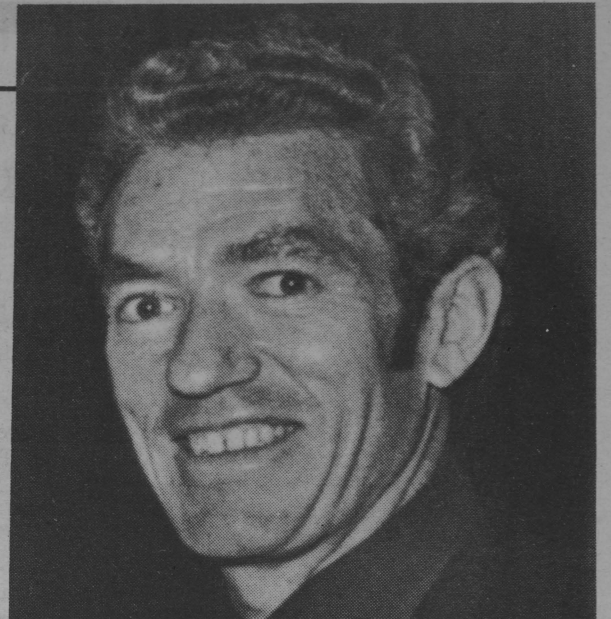
“3. **Teaching:** Two graduate courses were taught; a sport sociology course at the University of Georgia with an enrolment of 27 students, and a ‘cross-national comparison of sport and physical recreation systems course’ with eight students from the University of Western Australia. I also team-taught an undergraduate sport sociology course at Western Australia with an enrolment of 120 students. It was therefore both interesting and beneficial to teach students in two foreign countries.

“4. **Papers, Formal, Informal Talks:** Formal papers were delivered at international, national, and regional conferences in three countries. Thirty-three formal or informal talks were given at individual universities and colleges in Canada, the United States, Australia and South Africa.

“5. **Professional Development and Personal Refreshment:** Far-ranging and widely different experiences with fellow professionals, administrators of sport and recreation, teachers of physical education and health education and students from schools and departments of physical education have contributed to my knowledge of sport and physical education cross-nationally. In particular the knowledge gained from programs of physical education and sport systems in the United States and Australia, where we lived for three and five months respectively, and the shorter period of time spent in New Zealand and South Africa will enable me to teach a richer series of comparative courses.

“The past twelve months have been professionally beneficial and personally rewarding, and I am grateful to the University for supporting me. The year has been an extremely happy one, and I return feeling refreshed and better prepared for the work ahead . . . the Sabbatical leave was an outstanding experience.”

Dr. Pooley has been with the School since 1970. He still plays soccer [which he has done for 25 years, eight of them in the English professional league], has been active in soccer coaching in Canada, has taught at schools, colleges and universities in England, Scotland, Africa, the United States and Canada. Two years ago he became one of the founding members, representing Canada, on the advisory council to the Institute of Comparative Physical Education, joining an impressive list of international physical educators and sports medicine experts.



## The Pooley Diary, 1976 - 77

### Professional Activities in Canada and the United States, June 25 - Sept. 3, 1976:

June 25 - July 14: Director of PE 600 Comparative Physical Education and Sport course visiting Switzerland and Denmark, Concordia University, Loyola Campus.

July 18 - 26: Director of National Coaching Course for the Canadian Soccer Association held in conjunction with the Olympic Games.

July 31 - August 15: Visited Departments of Physical Education, University of Guelph, Michigan State University, Kansas and University of Colorado at Boulder.

Aug. 20 - Sept. 13: Visited Department of Physical Education, University of Wisconsin. Undertook library work and had discussions with Director of the Survey Research Center and Director of Comparative Education.

### Professional Activities Associated with Visiting Professorship, University of Georgia, Sept. 19 - Nov. 27, 1976:

Taught a graduate course, **Sociology of Sport**, Fall Term, 27 students.

Lectures and Papers: “Important Elements in Teaching Physical Education” for HPER senior students in final teaching practice, University of Georgia, Oct. 11, 1976.

“Aspects of Contemporary Sport Sociology: The State of the Field” for Department of Sport and Dance in Society and the Naval Research Company, University of Georgia, Oct. 11, 1976.

“Curriculum Concerns in Professional Preparation of Physical Educators” for the Southern Association of Physical Education College Women's Annual Conference, Biloxi, Miss., Oct. 23, 1976.

“Principles of the Game and Systems of Play in Soccer” for two soccer classes, University of Georgia, Oct. 28, 1976.

“Play and Athletics, Can We Have Both in Schools?”, for University of Georgia HPER undergraduate students, Oct. 29, 1976.

“Football—Play and Display: A Sociological Analysis” for the University of Georgia Community, Nov. 4, 1976. Excerpts aired on University radio, Nov. 8-12, 1976.

“Physical Education and Sport in Canada” for The University Center Physical Education Group, Emory University, Atlanta, Georgia, Nov. 9, 1976.

“Primary School Physical Education in Great Britain” video-taped for Seminar for Movement Education Teachers, University of Georgia, Athens, Nov. 12, 1976.

“Objectives and Priorities of the Canadian Soccer Association: A Review” for Planning Conference, Canadian Soccer Association, Ottawa, Nov. 12, 1976.

“Sport Sociology as a Field of Study at Graduate Level: Contemporary Themes” for Graduate Colloquium, Division of HPER, University of Tennessee, Knoxville, Nov. 15, 1976.

“Survey Research in the Social Sciences” for Graduate Research class, Division of HPER, University of Tennessee, Knoxville, Nov. 16, 1976.

### Professional Activities in the United States, November 28 - December 23, 1976:

Visited University Physical Education Departments at:

University of Texas, El Paso  
University of New Mexico, Albuquerque  
Visited with Robert Woodford, graduate student, who had written to me earlier in the academic year regarding his interest in sport sociology.

Brigham Young University, Provo  
Interviews with Dean, Assistant Dean, Head of Men's Division, Head of Women's Division.

Guest at Annual Soccer Banquet, BYU team.

Discussion about fitness programs suitable for all university students with fitness coordinator at BYU, Dr. Philip E. Allsen, in whose nationally known program all students in the university are required to complete a fitness course.

University of California at Santa Barbara  
University of Hawaii

Visited with Dept. Head  
Visited a secondary school, Santa Barbara, California

Guest speaker, Coaches Club, Santa Barbara, California

Visit to New Zealand, Dec. 27 - Jan. 7, 1977:

Visited Department of Physical Education in Auckland and spent morning discussing physical education in schools with Ray Aicheson, Senior Advisor for Physical Education for City of Auckland.

Discussed Physical Education in the elementary school system with an Auckland principal.

Discussed physical education at high school level with physical education teacher from Rotarua.

Discussed soccer in New Zealand with soccer representatives at Christchurch and Dunedin.

Visited Department of Physical Education, University of Dunedin.

### Professional Activities in Australia, Jan. 8 - May 7, 1977:

Brisbane: (Jan. 9 - 19)  
Biannual Australian Health, Physical Education and Recreation Conference.

Made four appearances in the programme:

- “Winning at the Olympics - An Explanation”

- “Children Should Play First and Compete Later”

- One of three reactors to “Physical Education Graduate Programme in Australia”

- Member of International Panel to Identify Major Issues Facing the Profession of Physical Education

Three day visit to Department of Human Movement Studies, University of Queensland. Data collected from this Department and a College of Advanced Education in the Brisbane area.

Woolongong: (Jan. 24)

Ninety minute discussion about professional preparation with 12 members of the Woolongong Institute of Education, Physical Education staff.

Canberra: (Jan. 26)

Sixty minute discussion about the Canadian Sport-Recreation Model at Federal and Provincial levels with two Permanent Secretaries of Federal Government Recreation Department.

Two hour discussion with five representatives of ACT comparing sport and recreation models in Canada and Australia.

Melbourne: (Jan. 31 - Feb. 1)

Two day visit to Department of Physical Education, University of Melbourne.

Adelaide: (Feb. 7 - 10)

Five lectures given to students and faculty at:

Murray Park College of Advanced Education (2)

The Flinders University of South Australia

Adelaide College of Advanced Education

Sturt College of Advanced Education

Data collected from students at Murray Park and Adelaide Colleges of Advanced Education

Perth: (Feb. 14 - May 6)

Part-time member of faculty, Depart-

ment of Physical Education and Recreation, University of Western Australia.

Taught Graduate Course, “Cross-Cultural Analysis of Leisure Systems” - 8 students.

Team taught Second Year Undergraduate “Sociology of Sport” Course with G. Watson - 120 students.

Gave three lectures at W.A. Secondary Teachers College

Gave 45 minute talk to 50 heads of Physical Education Departments from secondary schools in W.A.

Luncheon address with questions lasting 90 minutes to Community Recreational Council Officers of W.A.

Gave 45 minute talk at the A.G.M. of the Australian Council for Health, Physical Education and Recreation - W.A. Branch

Visited High Schools, Primary Schools and Private Schools over a three day period in the Perth area.

Data collected from students at W.A. Secondary Teachers College and Department of Physical Education and Recreation, University of Western Australia.

Addendum: While in Australia, had discussions with the researchers whose model of professional socialization I have been using, J. Western from the University of Queensland and D. Anderson, the Australian National University, Canberra.

Visit to Republic of South Africa, May 15 - 27, 1977:

Visited Potchefstroom University's Department of Physical Education for four days (contact: Professor Gert Scholtz).

Collected data from freshmen students (assisted by C. Pooley)

Gave five separate talks to students in the Department of Physical Education on a variety of topics including my own research interests,

Physical Education and Sport in Canada and the United States,

Sport and Politics on an international basis, preparation of physical education professionals in North America

Visited Rhodes University, Grahamstown for five days.

Repeated activities undertaken at Potchefstroom. Additionally, invited to lead a training session of the University soccer team lasting four hours.

Luncheon meeting with newly appointed Vice-Chancellor at Potchefstroom; at Rhodes University had long discussions about physical education on a large variety of topics with Professor Eugene Locke, Head of the Physical Education Department. Also, in both locations (Potchefstroom and Grahamstown) visited sport facilities available for black and coloured communities.

Visit to Western Canadian Universities June 21 - 27, 1977:

Visited Departments of Physical Education at:

University of Alberta

University of British Columbia

Simon Fraser University

University of Victoria

Met and discussed department programmes with at least one representative from each of these universities.

Visit to San Francisco State University June 30 - July 1, 1977:

Was invited to teach a Curriculum Theory course at the San Francisco State University's second summer session (previously discussed with Dr. M.J. Ellis). However, teaching did not materialize since too few students had signed for the course (nine).

Useful visit made to the Department of Physical Education where I met with physical education representatives. Suggestion made that I consider teaching the same course in 1978.

## Dr. Arthur Murphy joins Theatre Department

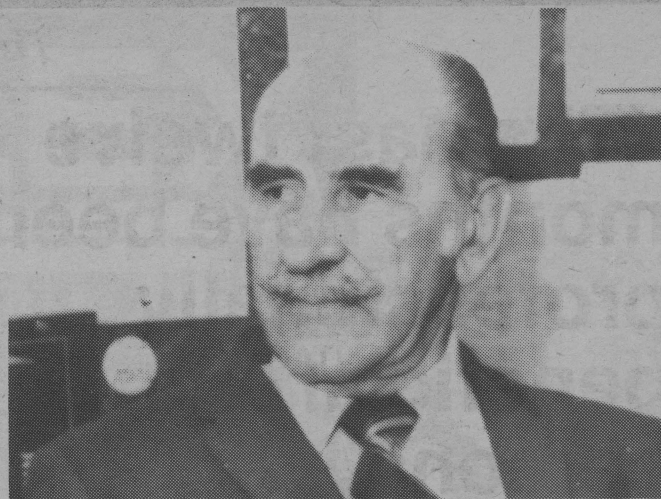


Dr. Arthur Murphy has joined the Theatre Department to teach a class on writing for the stage and screen.

Dr. Murphy, distinguished surgeon and former chairman of the Nova Scotia University Grants Committee, has had a lively career as a writer. His class will be based on his writing experiences for the theatre, and the changes a playwright's work undergoes from the initial concept to the staged production.

Arthur Murphy has written extensively for radio, television and the theatre. Among his radio plays are: *The Mordens* (nationally produced by CBC), *The Dark Cave*, *The Clinical History of a Great Love*, *The Death of Yellowjack*, *The Red Scarf*, *The Seashell Game*, *Out of His Time* (CBC Series—Portraits in Salt). Among his television scripts which have appeared on both American and Canadian television, particularly in the Ben Casey and Dr. Kildare series, are: *You'll Be Calling Me Michael*, referred to by a Toronto critic as "television drama at its finest"; *The Death Around Us* (CBC-produced, also in U.S.); *The Beckoning Hill*.

As a stage writer, Dr. Murphy has written a number of plays, many of which have been produced: *The Sleeping Bag* (Neptune and across Canada), *The Breadwinner*, *The First Falls on Monday*, *Thy Sons Command*, *Charlie* (Neptune), *Tiger! Tiger!* (Neptune) and *A Virus Called Clarence*.



## Illustrator Sokcevic boosts scenography classes

Nicholas J. Sokcevic, whose work recently had a public showing at the Manuge Galleries, will join the Theatre Department to teach in the Scenography classes of the honours theatre program.

Mr. Sokcevic, who is also a member of the faculty of the Nova Scotia College of Art and Design, worked for NASA in Washington, D.C., where he was directly responsible for the complex but explanatory space age illustrations emanating from that body.

He has had a distinguished career so far, being involved with illustrations and designs for the medical art for the American Cancer Society, the National Academy of Sciences, the space art for National Geographic, among numerous other associations. He will be instructing in three-dimensional color illustration as an integral part of the scenography classes run by Professor Peter Perina.

## Controversial Spring Awakening Theatre students 1st of '77 - '78

The Theatre Department will be performing for its first production of this year Frank Wedekind's *Spring Awakening*, starting on Thursday, Nov. 3, and running nightly at 8:30 p.m. in the Sir James Dunn Theatre at the Arts Centre, Nov. 3-6 and 11-12. Tickets are reserved and can be obtained from the Arts Centre Box Office.

This play concerning adolescents was written in 1891 and has had a fascinating and controversial stage history.

Wedekind began writing *Spring Awakening* in 1890 and it was published the following year in

Zurich, at his own expense. A modified version of the play was produced at the Kammerspielhaus in Berlin in 1906, directed by Max Reinhardt. In 1908 the play was banned, but subsequently licensed in its entirety by the Prussian Administrative Court in 1912, after they had declared it impossible not to recognize the piece as a serious work.

In 1917 a single matinee performance on Broadway was almost stopped by the City Commissioner, but finally allowed to continue. Almost 15 years later, however, a single performance by the Sunday Theatre Club in London ran its course without interruption, though the play elicited a typical response from *The Daily Telegraph* critic of the time who commented: "Thank Heaven that we in England have always grown up too slowly and set too much store by childish pursuits and games."

Two Sunday night performances of the play were given in 1963 by the English Stage Society and after two years of negotiations with the Lord Chamberlain, the play was given a licence to be performed before the general public, but only providing "there was no kissing, embracing or caressing" between the two boys in the vineyard scene, the words "penis" and "vagina" were omitted and

an alternative was found to the masturbation game in the reformatory.

In spite of a favourable press response—"Wedekind's *Spring Awakening* is a great work which has waited 75 years to find a public in Britain . . . There may be filth in the British theatre but it is not here." (*Daily Telegraph*) "Compared with Ibsen's *Ghosts*, it seems to belong in the next century rather than in the next decade." (*The Times*)—and in spite of the recommendation of Olivier, Tynan and Gaskill, the play was rejected by the National Theatre in 1965, for, as a spokesman said, it was "all right for some poky experimental theatre in Sloane square."

With the passing of the Lord Chamberlain, in Britain, the way was clear for a new production of the entire play. The "message" of the play today is no less relevant than it was 80 years ago, the response to the play is likely to be no less controversial, the voicing of Wedekind's doubts about conventional morality no less necessary.

Performed by the students in the Dalhousie theatre program, the play is directed by Lionel Lawrence, with scenography by Peter Perina and costumes designed by Robert Doyle.

## Recreation ice times

The Athletic and Recreation Services Division has scheduled the following recreation Rink ice times for students:

Day	Time	Activity
Mon.	10 - 11 a.m.	Shinny Hockey
	12:30 - 2 p.m.	Free Skating (No Pucks or Sticks)
	2 - 3 p.m.	Shinny Hockey
Tues.	10 - 11 a.m.	Shinny Hockey
	12:30 - 2 p.m.	Free Skating (No Pucks or Sticks)
	2 - 3 p.m.	Shinny Hockey
Wed.	10 - 11 a.m.	Shinny Hockey
	12:30 - 2 p.m.	Free Skating (No Pucks or Sticks)
	2 - 3 p.m.	Shinny Hockey
Thurs.	10 - 11 a.m.	Shinny Hockey
	8:30 - 10 p.m.	Public Skating (Everyone Pays)
	12:30 - 2 p.m.	Shinny Hockey
Fri.	10 - 11 a.m.	Shinny Hockey
	12:30 - 2 p.m.	Free Skating (No Pucks or Sticks)
	2 - 3 p.m.	Shinny Hockey
Sat.	2:30 - 4:30 p.m.	Public Skating (Everyone Pays)

## At the Cohn: Nov. 1 - 14

**Warren Chiasson**

Jazz

Tuesday, November 1, 8:30 p.m.

**Ivan Rebhoff**

The richest, darkest, highest, lowest bass in the world

Wednesday, November 2, 8:30 p.m.

**Buffy Sainte-Marie**

Charismatic Singer and Songwriter

Saturday, November 5, 8:30 p.m.

**Sabicas**

Flamenco Guitar

Wednesday, November 9, 8:30 p.m.

**Harry Blackstone, Jr.**

Magic—The Art and Science of Illusion

Friday, November 11, 8:30 p.m.

Saturday, November 12, 2:00 p.m. and 8:30 p.m.

**New York Jazz Quartet**

featuring Roland Hanna

Monday, November 14, 8:30 p.m.

**Support**

**DALPLEX**

## Equipment available

A variety of items of athletic equipment is available for use by Dalhousie students, faculty and staff. To sign out equipment, a photo identification card will be deposited with the equipment sign-out cards, which will be available in the locker rooms.

**Faculty**—current photo faculty card;  
**Students**—photo identification card (available free of charge from Student Union); and

**Staff**—current photo staff card.

People borrowing equipment for recreational play or intramurals are expected to take care of the borrowed equipment and return it in the condition it was received.

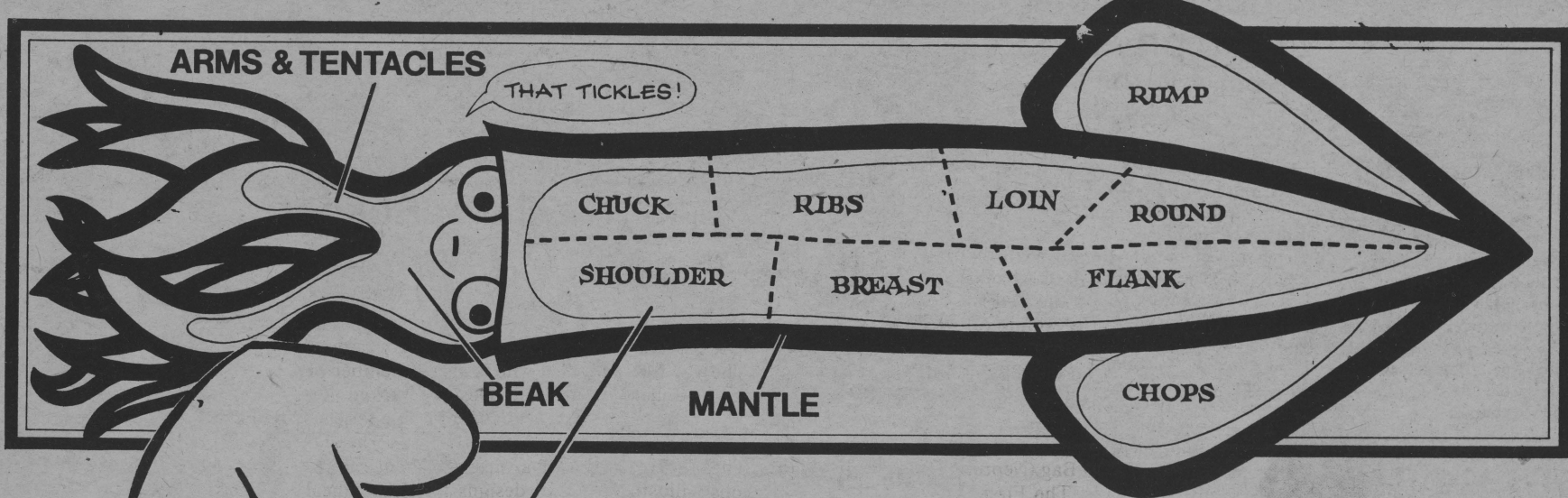
**Student, Faculty and Staff Skating:**

A current Dalhousie photo identification card is required for presentation for Dalhousie skating sessions. The ID cards for students may be obtained from the Student Union Building free of charge.

## ATHLETICS SCHEDULE Oct. 28 - Nov. 12

Date	Event	Location	Time
Fri. Oct. 28	Hockey	Concordia at Dal	7 p.m.
Sat. Oct. 29	Soccer	Dal at Memorial	2 p.m.
Sat., Oct. 29	AUAA Field hockey	Winner of East	
Sun., Oct. 30			
Sat., Oct. 29	UPEI invitational Hockey tournament (Acadia, Dal, Mt.A., and UPEI)		
Sun., Oct. 30	Soccer	Dal at Memorial	TBA
Fri., Nov. 4	AUAA Swim relay meet at Moncton		7:30 p.m.
Sat., Nov. 5			
Thurs., Nov. 3	CWIAU Field hockey championships	McGill	
Fri., Nov. 4	Men's basketball	Alumni at Dal	7 p.m.
Sat., Nov. 5	Hockey	Dal at SMU	7 p.m.
Fri., Nov. 4	Men's volleyball	Greenwood Open	
Sat., Nov. 5	Women's volleyball		
Sat., Nov. 5	CIAU Cross Country		
Sat., Nov. 5	AUAA Soccer Championships	Winner of West	
Sun., Nov. 6			
Tues., Nov. 8	Women's Basketball	Alumni at Dal	7 p.m.
Fri., Nov. 11	Hockey	Mt. A. at Dal	7 p.m.
Sat., Nov. 12	Hockey	UPEI at Dal	7 p.m.
Fri., Nov. 11	CIAU Soccer Championships	OAAA	
Sat., Nov. 12			
Fri., Nov. 11	Women's Basketball	Acadia Tipoff	
Sat., Nov. 12	Men's Basketball to	Maine (UMPI, UMFK, Ricker)	
Sun., Nov. 13			

# The Joy of Cooking Squid



## Everything You Always Wanted To Know About Squid

### ...BUT DIDN'T KNOW WHOM TO ASK

**Ask Aristotle!** The first man (that we know of) to study squid was Aristotle. He described the habits, appearance, and anatomy of the Mediterranean squid family in his *Historia Animalium*, written before 300 B.C.!

**The Happy Headfoot!** Squid belong to the class of mollusks called cephalopods, from the Greek *kephale* (head) and *podos* (foot). So the name, literally, means "headfoot," because the tentacles (feet) grow out of the squid's head!

**Frequently Featured at Feasts!** The Greek and Roman gourmets of classical times considered cephalopods to be the finest fish in the sea, and often featured them at banquets!

**Famous For Ferocity!** Even though Jules Verne made the squid famous as a fearsome monster in his *20,000 Leagues Under the Sea* (and the giant species can grow to over 60 ft.), the squid you're likely to find in your local market will be considerably easier to handle! (Usually less than a foot long.)

**Pervasively Populous!** Over 350 species of squid have been identified, and every ocean in the world has some!

**Favorite Fare For Flair!** Though many Americans tend to fear it as "unfamiliar" or "new," squid is, in fact, an international favorite, prepared in a host of ways by Oriental, Mediterranean, and Mexican chefs. Even in the U.S., Americans of Greek, Slavic, Italian, Oriental, and Spanish descent dine regularly on squid!

**Nutritional Nabobs!** Squid is an excellent source of protein, calcium, iron, and phosphorus!

**Rapid-Rocket Racer!** The squid shoots itself backward or forward at remarkable speeds. It draws water into its mantle and expels it through a funnel beneath the body!

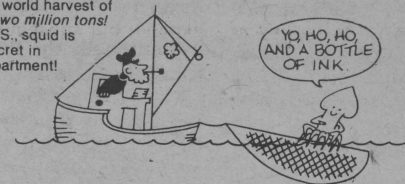
**Hasty Houdini!** When approached, a squid's body can immediately turn a dark color. He then ejects a cloud of ink roughly the same size and shape of his body, and shoots through it, away from his potential attacker. When the predator pounces on what he thinks is the squid, he finds that his "prey" is a blob of ink that disperses on contact, clouding up the water and further confusing him!

**Fancy Flickers!** Sometimes called "jewels of the sea," squid glow in the dark, and can go through a series of spectacular color-changes at will!

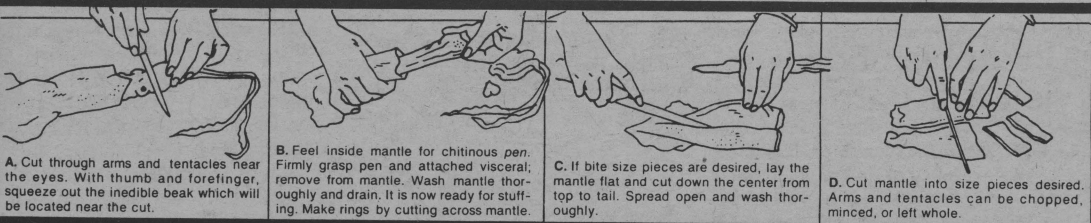
**Tremendous Tons of Treats!** How much would you call a lot of squid? A few tons? A thousand tons?

Well, the annual world harvest of squid is around two million tons!

And yet in the U.S., squid is the best-kept secret in the Seafood Department!



## How To Dress A Squid



A. Cut through arms and tentacles near the eyes. With thumb and forefinger, squeeze out the inedible beak which will be located near the cut.

B. Feel inside mantle for chitinous pen. Firmly grasp pen and attached visceral, remove from mantle. Wash mantle thoroughly and drain. It is now ready for stuffing. Make rings by cutting across mantle.

C. If bite size pieces are desired, lay the mantle flat and cut down the center from top to tail. Spread open and wash thoroughly.

D. Cut mantle into size pieces desired. Arms and tentacles can be chopped, minced, or left whole.

### Fried Squid

- 2 pounds fresh or frozen squid
- 1 egg, slightly beaten
- 1/4 cup milk
- 1/2 cup fine saltine cracker crumbs
- 1/2 teaspoon salt
- 1/4 teaspoon pepper
- 1/4 cup shortening

Clean, skin and wash squid. Slit hollow body cavity to flatten. Pat dry on paper towels. Combine egg and milk. Mix cracker crumbs, salt and pepper. Dip squid into egg mixture; then coat with crumbs. Heat shortening in heavy skillet. Add squid and cook quickly until done, about 2 minutes per side. Makes 6 servings.

### New England Style Squid Chowder

- 1 pound fresh or frozen squid
- 2 cups water
- 1/2 teaspoon salt
- 1/4 cup chopped onion
- 1 cup diced potatoes
- 4 cups milk
- 2 tablespoons flour
- Chopped parsley

Clean, skin and wash squid. Place in saucepan with water and salt. Cover and simmer gently for 30 to 40 minutes or until tender. Reserve cooking liquid; add enough water to make 2 cups. Finely chop squid. In saucepan, cook bacon until brown. Add onion and potato; cover and cook until tender but not brown. Add 3 1/2 cups milk. Blend flour into 1/2 cup milk; stir into chowder. Heat to boiling, stirring. Add squid and cooking liquid; heat through. Serve with a sprinkle of chopped parsley. Makes 6 cups.

### French Fried Squid Rings

- 1 pound fresh or frozen squid
- 1 egg, beaten
- 1/4 cup milk
- 1 cup Italian flavored bread crumbs

Clean, skin and wash squid. Slice mantle into quarter-inch rings. Drain on paper toweling. Combine egg and milk. Dip squid rings into egg mixture; then coat with crumbs. Place in a single layer in fry basket. Fry in deep hot fat 350 degrees for 20 to 30 seconds or until just lightly browned. Makes 6 appetizer servings or 3 entree servings.

### Boston Baked Squid

- 2 pounds fresh or frozen squid
- 1 cup dry bread crumbs
- 2 tablespoons chopped parsley
- 1 teaspoon leaf oregano
- 1/4 teaspoon salt
- 1/2 teaspoon pepper
- 1/2 cup chopped onion
- 1 clove garlic, minced
- 2 tablespoons butter
- 1 egg, beaten
- 1 chicken bouillon cube
- 1/4 cup boiling water
- 1 (8-ounce) can tomato sauce

Clean, skin and wash squid. Remove fins. Chop fins and tentacles fine. Mix together bread crumbs, parsley, oregano, salt and pepper. Cook onion and garlic together in butter until tender but not brown; add to crumbs. Mix in chopped squid meat. Add egg and bouillon dissolved in boiling water; mix well. Fill mantles with stuffing. Place in greased baking dish. Pour tomato sauce over stuffed mantles. Bake in 350 degree oven for 30 minutes. Makes 6 to 8 servings.

### Squigetti Sauce

- 2 pounds fresh or frozen squid
- 1 cup water
- 1/2 teaspoon salt
- 1 cup chopped onion
- 2 cloves garlic
- 3 tablespoons butter
- 1 (1-pound, 4-ounce) can tomatoes
- 1 (6-ounce) can tomato paste
- 2 tablespoons chopped parsley
- 1/4 teaspoon oregano
- 1/4 teaspoon sweet basil
- 1/2 teaspoon pepper

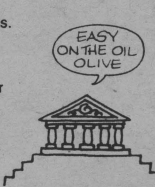
Clean, skin and wash squid. Place in saucepan with water and salt; cover and simmer 30 minutes. Reserve cooking liquid; chop squid meat. Cook onions and garlic in butter until tender but not brown. Stir in remaining ingredients. Stir in squid meat and cooking liquid. Cook 10 to 15 minutes. Serve over spaghetti. Pass Parmesan cheese. Makes 1 quart.



### Squid Stew Mediterranean

- 2 pounds fresh or frozen squid
- 1 (1-pound) can tomatoes
- 1/2 teaspoon salt
- 2 cups chopped cabbage (4 ounces)
- 1 cup sliced carrots
- 1 cup sliced celery
- 1 cup chopped onion
- 1 cup diced potatoes
- 1 bay leaf
- 1/2 teaspoon thyme
- 1/2 teaspoon marjoram
- 2 tablespoons flour
- 1/2 cup sherry

Clean, skin and wash squid; cut into small pieces. Drain juice from tomatoes; add water to make 3 cups; pour into saucepan. Add squid and salt; cover and simmer for 10 minutes. Add cabbage, carrots, celery, onion, potatoes and bay leaf. Stir in thyme and marjoram. Cook 30 minutes. Blend flour into 4 to 5 tablespoons water; stir into stew. Add drained tomatoes and sherry. Heat through. Makes 6 to 8 servings. (2 quarts) Serve with head lettuce salad and hot crusty French bread and butter.



When you have successfully prepared the recipes on this poster, send in for your "Certificate of Accomplishment." We issue this certificate not only as an endorsement of your culinary ability, but also as a recognition of your interest in America's underutilized species and the domestic fishing industry.

Dear Sir: I have prepared squid six different ways! Please send me my Certificate of Accomplishment, officially certifying my expertise with squid.

Send to:  
Russell T. Norris  
Regional Director, Northeast Region  
Federal Building  
14 Elm Street • Gloucester, Massachusetts 01930

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



U.S. DEPARTMENT OF COMMERCE, Frederick B. Dent, Secretary  
Dr. Robert M. White, Administrator, National Oceanic and Atmospheric Administration  
Robert W. Schoning, Director, National Marine Fisheries Service

This poster was developed at the National Fishery Education Center, National Marine Fisheries Service, 100 East Ohio St., Chicago, Illinois 60611

GPO 908-259

## CAPSULE:

## Calendar, Notices, People and Places



**The Lawyer: Friend or Foe?** A provocative title for an address by Dr. Robert O. Jones [above], former head of the Department of Psychiatry at Dalhousie. Dr. Jones is the head table speaker at the Nov. 14 luncheon for those attending the 51st Dalhousie medical refresher course.

## Sodhi hosts "India Is" on TV again

Dr. Sid Sodhi, professor of education at Dalhousie, will be the host for a second season of an Indian cultural program on Halifax Cable television.

The program, "India Is", featuring Indian culture, cuisine, politics, and heritage, will be telecast at 8 on Wednesday evenings on Channel 10.

Dr. Sodhi, the researcher, host and producer, hopes that the program offers an insight into Indian heritage, and the contributions that Indians as new Canadians can make to the Canadian mosaic.

He hopes, too, that through his efforts to promote Indian culture, other minority groups will develop programs of their own.

Dr. Sodhi will kick off the new season with a program sharing some of the souvenirs and experiences he collected during his recent visit to India.

## Support

# DALPLEX

## CLASSIFIEDS

UNIVERSITY NEWS CLASSIFIED is a new section of the newspaper for small advertisements from bona fide members of the Dalhousie University community (faculty, staff, students) and those institutions with which the university is affiliated.

The section will contain only two headings: **Wanted**, and **Not Wanted**.

It is intended for those who have items for sale, or who want to buy items, and will not affect the normal publicity given to events and activities on campus.

For further information, telephone or write The Information Office, Old Law Building.

## EVENTS

### Environmental hazards of health: Role of the physician

Highlighting the 51st Dalhousie Medical Refresher Course in Halifax, Nov. 14-16, will be the annual John Stewart Memorial Lecture to be delivered this year by Dr. Ernest Mastromatteo, chief, occupational health protection branch, Ontario Ministry of Health.

The subject of his address, to be given at 11:30 a.m., Nov. 15, in Theatre A of the Sir Charles Tupper Medical Building, is **Environmental Hazards of Health: The Private Physician's Role**.

The three-day meeting will feature morning sessions on recent advances in medicine (Nov. 14), community health in office practice (Nov. 15) and allergy and immunology (Nov. 16). The afternoon agenda calls for small group clinics.

On the speakers' roster in addition to Dr. Mastromatteo are two distinguished clinicians: Dr. D.N. Graham, clinical pharmacologist and chief of medicine, Oromocto Public Hospital, Oromocto, N.B.; and Dr. S.O. Freedman, Dean of Medicine at McGill University.

The **Dalhousie-King's Reading Club** will meet Monday, Oct. 31 at 8 p.m., at the home of Mrs. A.J. Meagher to hear Dr. Scott Wright, director of Dal's School of Nursing, speak on nursing.

**Native Peoples and the North**—John Kearney, for the Task Force for Justice in the North, takes a look at the Dene and their struggle against colonialism in Canada, on Thursday, Nov. 3, 12:30-1:30 p.m., Room 410, Student Union Building. The event is sponsored by the local Oxfam committee and is free.

**Last Graves at Dimpaza**—a documentary exposing the horrors of the apartheid system will be shown on Wednesday, Nov. 2 at 8 p.m. in the McInnes Room, Student Union Building. The event is sponsored by the local Oxfam committee and is free.

## PEOPLE

### Scott Wright at international meet

Dr. Margaret Scott Wright, Director of the School of Nursing, attended the 16th Quadrennial Congress of the



For the first time in the history of parades, Dalhousie commissioned and entered a float. Built by the Engineering Society, the Tiger float was entered in the Joseph Howe Festival Parade earlier this month. The cost of the float was borne by the university with the Engineering Society receiving a \$100.00 honorarium for its work and design. Could this be Dalhousie's answer to the Nova Scotian Rose Bowl float?

International Council of Nurses in Japan last summer in her capacity as second vice-president. Over 11,000 nurses attended this event from many of the 88 member countries. Theme of the congress was "New Horizons in Nursing." The council, founded in 1899, is the major non-governmental organization representing the voice of nursing. The influence of the council has grown rapidly in recent years. The organization is affiliated to UNESCO, and its HQ staff in Geneva have close working relationships with other international bodies such as the World Health Organization and the International Labour Organization.

Dalhousie-Mount Saint Vincent nursing student **Mary Comer** was one of two representatives of the Canadian University Students Association at the congress. This was the first congress that officially included a student nurses' assembly.

### Colombia book visit by Alfaro

G.A. Alfaro, associate professor of Spanish, travelled to Botoga, Colombia earlier this year in connection with the publication of his book **La estructura de la novela picaresca**. His study of the picaresque novel in Spain during the 16th and 17th centuries was published by the Instituto Caro y Cuervo, Colombia's national philological institute. Prof. Alfaro analyzes the structure and evolution of the novel from its first

appearance, the anonymous **Lazarillo de Tormes** (1554), to its last expression in the Golden Age of Spain, **Periquillo** (1668) by Francisco Santos. In Colombia, Prof. Alfaro also saw the publication of his article on **La mala hora**, an early novel of Gabriel Garcia Marquez. He delivered a lecture to the International Masters Class at the Instituto Caro y Cuervo. The title of his lecture, **The Tyrant in the Latin American Novel**, was the subject of a course he offered at Dalhousie during the academic year 1976-77.

### Meyerhof back from travels

Dr. G.G. Meyerhof, professor and head of the department of civil engineering at the Nova Scotia Technical College, has recently returned from a four-month geotechnical trip around the world. He lectured at universities and engineering societies at Auckland, Wellington and Christchurch, New Zealand. In July, he carried out a similar lecture tour in Melbourne, Hobart and Sydney, Australia; and was special lecturer and panelist in sessions of the ninth International Soil Mechanicals Conference in Tokyo, and lectured at universities, institutes of technology, and engineering societies in Tokyo and Nagoya, Japan. In August, he visited civil engineering construction and archaeological sites in Asia and the Middle East, and before returning to Canada, visited universities in Europe and Great Britain.

### Laurin on P.Q. irreversibility

Dr. Camille Laurin, cultural development minister in the Quebec government, was at Dalhousie briefly last week to speak to the Atlantic Provinces Political Studies Association.

His topic, **The Irreversibility of Quebec Independence**, was given to members at their dinner in the Faculty Club.

Meetings of the association began at noon last Friday at Mount Saint Vincent, moved to Dalhousie for the dinner, and ended on Saturday at Saint Mary's.

In addition to Dr. Laurin's address, political scientists presented papers on the work of the Ombudsman in Atlantic Canada, legislative reform, the nature and future of political community in Canada, the teaching of political science, and communications and politics.



introducing

A public lecture by R.O. Fournier will be given at 8 p.m., Nov. 8, in Room 406 of the Dalhousie Arts Centre.

His talk is entitled **What's All the Fuss About the 200-Mile Limit**. Prof. Fournier will give a popular explanation of the known oceanographic phenomena which make the region within 200 miles of the coast so important to Canada's national interest.

This is one in a series of lectures sponsored by the Dalhousie Student Union's Community Affairs secretariat and the Dalhousie Speakers Bureau.

### "Maybe there's no lingua mentis"

Dr. Thomas Bever will present the next talk in the Psychology Department's lecture series "On the Nature of Thought." He will speak in Rm. 4258, Life Sciences Centre, Psychology, at 3:30 p.m. on Nov. 4. The title of this talk is "Maybe there's no lingua mentis."

Dr. Bever is a noted psychologist who teaches at Columbia University. He has made important contributions to the fields of psycholinguistics, perception and cognition. He has written important papers in each of these fields and is Associate Editor of **Cognition: An International Journal of Cognitive Psychology**. He has also co-authored several books including **The Psychology of Language** and **An Integrated Theory of Linguistic Ability**.



Pat Purcell [left], vice-president of the Atlantic Geoscience Society, chats with Charles Wood, Brown University, who lectured the society on "The geological evolution of the terrestrial planets."

Mr. Wood, who is completing his PhD at Brown, has taught astronomy at Haile Selassie University in Ethiopia, and has been a member of two U.S. NASA committees. In his lecture, at Dalhousie, Mr. Wood compared surface features of the inner four planets and the moon. Allowing for age differences, he said, all seemed similar—except that Earth was unique in that most of its surface was geologically young. [A/V Services]

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