

# CUT SENATE FROM 264 TO 74

—says committee

**IN THIS  
ISSUE:**

## Convocations: Now seven in the spring

Dalhousie will have seven convocation ceremonies next spring — one more than in recent years. Senate has approved a schedule for the convocations in May. The newest will be for the recently established Faculty of

Administrative Studies, which covers commerce, business and public administration, library service and social work.

In presenting the proposed schedule to Senate Council and Senate last month, Vice-President W.A. MacKay said that six convocation ceremonies were held last year; in addition, Dalhousie degrees in Arts and Science were conferred at the King's convocation. Dentistry, Health Professions, Law and Medicine each had a convocation, and there were two larger convocations for the Faculties of Arts and Science and Graduate Studies.

This year the Deans of Dentistry, Health Professions, Law, Medicine and the new Faculty of Administrative Studies had indicated their preference for separate convocations.

"This would mean one more convocation at Dalhousie this year, that is, a total of seven. It is possible the numbers might be reduced if, for example, Dentistry and Health Professions were combined and Law and Medicine were combined.

A 72 per cent reduction in the size of the university Senate — from 264 members to 74 — an increase in the number of student representatives from six to 11, and the abolition of the right of full professors to be members are among major changes recommended by a Senate Committee.

The report of the committee, on the composition of Senate and Senate Council is, however, only a preliminary one, and further discussions will take place in Senate.

The report was discussed at the December meetings of Senate Council and Senate.

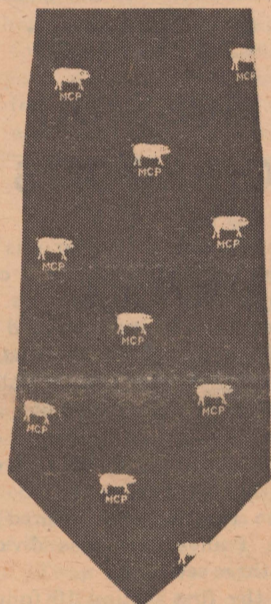
Members of Senate received the report after the Dec. 1 Senate Council meeting and at the Senate meeting a week later, Professor K.A. Heard, chairman of the composition committee, led a half-hour discussion on the committee's preliminary findings.

Senate agreed that the committee should also give consideration to the functions as well as the composition of Senate and Senate Council, and to the schedules of meetings of both bodies.

It was also agreed that there should be further discussion at the January meeting of Senate, prior to any further discussion by Senate Council.

The major changes in the committee's report are as follows (Full report — Page 12):

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## Fluorescent lights turn milk, butter off

The following article is reprinted in full from the December 11 issue of Guelph University News Bulletin.

Most of the dairy cases in Nova Scotia supermarkets have fluorescent lights, and the two major dairies use both plasticized paper and transparent plastic cartons for milk.

The bright fluorescent lights in supermarkets may create a pleasant environment for shopping, but they have a detrimental effect on the flavor and nutritional content of certain foods. Milk, butter, other milk products and cooking oils can suffer dramatic flavor changes when exposed to fluorescent light for as little as two or three hours.

These flavor and nutritional changes have been documented in research conducted by three scientists at the University of Guelph: Professor J.D. DeMan, Department of Food Science, Professor J.C. Alexander, Department of Nutrition and Dr.

A. Sattar who completed his Ph.D. dissertation on this research.

"The most significant aspect of this work," says Professor DeMan, "is the flavor change that occurs in milk, milk products and cooking oils. After two to three hours of exposure to fluorescent light, the taste of milk deteriorates noticeably. Ample lighting in the dairy case might sell more milk, but it destroys its flavor."

"I'm convinced," he continues, "that much resistance to drinking milk originates when people get this off-flavored milk and just cannot put their finger on what is wrong. It puts them

off milk. The dairies could encourage milk consumption, I think, by packaging milk in light protective wrappings to preserve its fresh, pure, straight-from-the-dairy flavor."

Some popular milk containers — transparent pouches, and plastic jugs — afford little protection against fluorescent lights. Paper cartons are much better. An opaque laminated plastic pouch, currently in limited use in Ontario, is an effective deterrent to light-induced damage, but because it costs a little more to manufacture, it has not achieved wide popularity. Ideally milk should be packaged in black containers — the most

effective light screen — but consumers have a historical aversion to black packaging.

Dr. Sattar finds that fluorescent light also destroys some of the riboflavin and vitamin C in the milk. Since milk is a good source of riboflavin in our diets, this loss can reach significant proportions. Milk is not a good source of vitamin C, but there is a close relationship between vitamin C loss and flavor deterioration.

The off-flavor of milk is caused by oxidation of milk fat. Such small quantities of these oxidized substances alter the

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**DALHOUSIE  
ALUMNI NEWS**



will appear again as the centre section of University News in the next issue, January 23.

## Killam awards

The Izaak Walton Killam Fund for Advanced Study at Dalhousie University was founded by Mrs. Dorothy J. Killam in memory of her husband Izaak Walton Killam. Her purpose was to establish a perpetual memorial to her husband in his native province and "to help in the building of Canada's future by encouraging advanced study".

The Awards Office has placed advertisements across the country announcing the Killam Postdoctoral Fellowships and the Memorial Scholarships.

The Fellowships are valued at \$10,300 plus travel allowances and are tenable for one year at Dalhousie in most fields of study.

Applicants should not be more than 35 and must possess a PhD from a recognized university, or expect to obtain a degree before taking up an award. The closing date for applications was Jan. 1; however, due to the mail strike, late documents may be considered. The Dean of the Faculty of Graduate Studies has application forms.

The Killam Memorial Scholarships, valued at \$5,700 are renewable on evidence of satisfactory performance in a Master's or Doctoral program in the natural sciences, social sciences and humanities.

Eligibility is based on a First Class undergraduate degree in the field of study the student wishes to pursue. Candidates are NOT required to submit application forms for the Memorial Scholarships, but should apply for admission to Dalhousie's Registrar as early as possible. On the basis of information supplied in the application, the graduate department concerned will nominate the scholar to a selection board for consideration and nomination for a Killam award.



## 1800 expected to graduate in spring

Between 1,741 and 1,807 students will graduate from Dalhousie next spring, according to estimates made at the end of November and presented to Senate last month.

The higher figure of 1,807 is based on the number of students expected (as of November) to complete their degree or diploma requirements by May. The lower figure of 1,741 is an estimate based on the ratio of successful spring graduates to mid-January last year, which allows for some drop-off of unsuccessful candidates.

The average attendance over the past three years has been 71 per cent of the graduating students. Nearly 70 per cent of this year's graduating students are expected to be at convocation.

The Arts and Science degrees of BA and BSc will again be the largest single groups (this year

Thirty-two Commonwealth countries were present at COMLA Council II. Professor J. Clement Harrison (front row, centre) was elected to a three-year term as President of COMLA at the Kingston, Jamaica, meeting.

## Commonwealth Library Association presidency for Dal's Harrison

Professor J. Clement Harrison of Dalhousie's School of Library Service was elected President of the Commonwealth Library Association (COMLA) at its second council meeting held in Kingston, Jamaica.

COMLA had its first council in Lagos, Nigeria in 1972. Its objectives were established: to improve libraries in the Commonwealth and encourage library associations; to forge, maintain and strengthen professional links between librarians and promote

estimated at 207-221 BAs and 278-290 BScs). The next biggest group will be the 130 or 131 students receiving LLB degrees.

the status and education of librarians and the reciprocal recognition of qualifications in librarianship; and, to initiate research projects designed to promote library provision and to further technical developments of libraries in the Commonwealth.

The Canadian Library Association nominated Harrison in 1974 as Canada's delegate to COMLA. He acted as convenor of a COMLA sub-committee studying exchange salaries before being elected president.

His duties will include presiding over annual executive meetings, promoting COMLA, carrying on relations with other international bodies and organizing COMLA Council III, scheduled for Malta in 1978.

The Commonwealth is broken into six regions for COMLA purposes: Africa, America and Commonwealth Caribbean, Asia, Australasia and Europe. Currently, 42 countries are COMLA members.

## Seminar session on sports

Conducting a Seminar was the theme of the second in a continuing series of meetings on university teaching, designed for faculty and graduate students.

On Dec. 5, in the Great Hall of the Faculty Club, 28 faculty and graduate students from 16 different departments met to discuss the "Seminar".

The meeting was chaired by John Pooley and was divided into three sections.

In the first section 10 fourth-year students from the School of Physical Education joined Dr. Pooley for a seminar entitled "The Future of Athletics at Dalhousie University". The purpose of this was to present a seminar lasting approximately 30 minutes. Following a short break questions were asked and observations made about the way in which the seminar was conducted.

The leader of the seminar answered questions and the group of faculty and graduate students who had been observing shared ideas and problems.

Finally, some notes on "Conducting a Seminar" were distributed (see attached) and the meeting concluded after deciding to hold another meeting on Jan. 23, 1976 when course outlines and student evaluations would be discussed.

## Apricot silk

Senate has approved apricot silk for the lining of the hood for the new Dalhousie degree, Master of Nursing.

## Non-credit classes - Computer Centre

With a staff re-organization and the addition of new staff, the Computer Centre intends to increase its teaching efforts. The traditional offerings in Fortran, Cobol, Compass, APL, and Plotting will be continued.

More than one class for Fortran and Introduction to Computing will be offered concurrently to allow persons to take these classes who might otherwise have conflicts with regular academic classes and also to keep class size down to a manageable 15-20 students.

The centre will be offering a

class in the BASIC language next term which will be terminal oriented. BASIC has widespread use in both business and engineering applications.

A number of Special Topics sessions will also be held in the 12:30-1:30 period on Mondays, starting about mid-January. Among topics to be covered will be the use of Update, File structures used in Fortran, creating and maintaining a program library, and use of the SORT/MERGE utility. User suggestions for seminars are invited.

## Horrocks joins education board

Dr. Norman Horrocks, Director of the School of Library Service, has been appointed to the Board of Directors of the Library Education Division of the American Library Association.

## UNIVERSITY NEWS

UNIVERSITY NEWS is published every second Friday between September and May by Dalhousie University, Halifax, Nova Scotia. It is produced by the Information Office with the assistance of the Graphics Department and is printed by The Dartmouth Free Press.

Inquiries and contributions should be addressed to The Editor, University News, Information Office, Old Law Building, Dalhousie University, Halifax, B3H 3J5. Telephone: 424-2517/8.

Following is the publishing schedule for the balance of 1975-76:

No.	Deadline	Publishing date
10	Jan. 16	Jan. 23
11	Jan. 30	Feb. 6
12	Feb. 13	Feb. 20
13	Feb. 27	March 5
14	March 12	March 19
15	March 26	April 2
16	April 9	April 16
17	April 23	May 3-7

# Rhodes scholarships for arts, law students

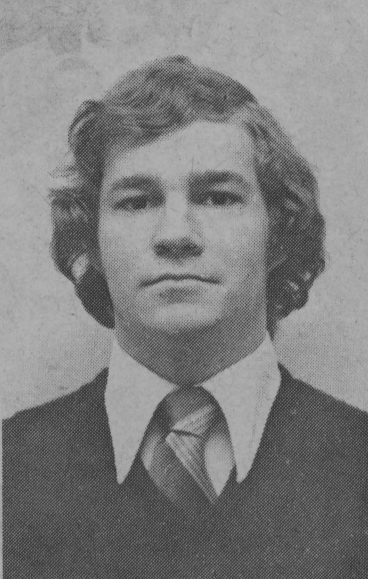
Two Dalhousie men were chosen from over 30 candidates from New Brunswick, Nova Scotia and Prince Edward Island to study at Oxford commencing October, 1976.

Phillip L. Bryden and Laurence J.E. Dunbar are the Rhodes Scholars-elect from the Maritime Provinces.

Mr. Bryden, a 22-year-old Dalhousie arts graduate, plans to study law at Oxford with thoughts of returning to Nova Scotia after completing the two-year program.

Mr. Dunbar, 23, is in his final year at Dalhousie law school where he holds the Fraser Scholarship for first class standing. He is chairman of the school's Moot Court committee and active in inter-faculty sports. He will do graduate work in international law at Oxford.

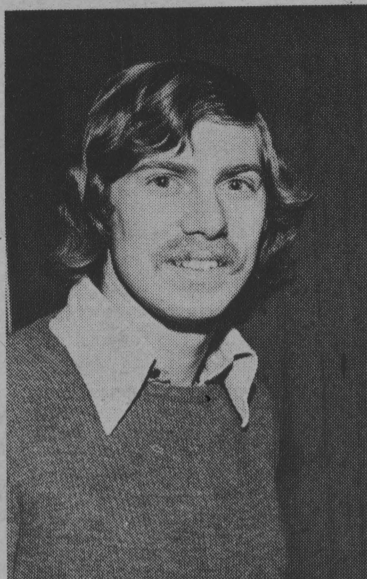
A scholarship winner in each of his four years at Dalhousie Mr. Bryden was a teaching assistant for History 100 in his junior and senior years and



Laurence Dunbar

winner of the Deutscher Akademischer Auslandsdienst scholarship for study in West Germany.

He was co-captain and manager of the men's varsity volleyball team and is currently



Phillip Bryden

employed as business manager of CON-ACT Workshops, an organization working with ex-prisoners on day parole.

The awards are subject to confirmation by the Rhodes Scholarship Trust in England.

## STEACIE FELLOWSHIP:

# Aumento 1st Dal winner

Dr. Fabrizio Aumento, professor and former chairman of the Department of Geology has been awarded the E.W.R. Steacie Memorial Fellowship for 1976.

Dr. Aumento was nominated by his colleagues at Dalhousie last spring.

"It was quite a surprise to me, so I have few plans. I intend spending the year somewhere where I can continue my investigations on the oceanic crust and its continental equivalents."

The Steacie Fellowship (see preceding column) allows faculty to spend full time on research, supported by N.R.C. funds.

Dr. Aumento received his PhD from Dalhousie in 1965 and worked as a research scientist with the Geological Survey of Canada until 1969 when he joined the university as a research associate and later as a Senior Killam Fellow. He has published more than 50 articles in major scientific journals and served as chief scientist, mid-Atlantic Ridge, on the C.S.S. Hudson 1971 Expedition.

During the summer of 1974, Dr. Aumento was co-chief scientist of Leg 37 of the Deep Sea Drilling Project (University News, Vol. 5 No. 1, Sept. 5, 1974). On the expedition over 3,000 samples taken from recovered cores were studied on the Glomar Challenger and later at institutions around the world, including Dalhousie.

Dr. Aumento is the first Dalhousie faculty member to receive a Steacie Fellowship. It is only the second time a geologist has been named; the first was Dr. David Strong of Memorial University who is a colleague and friend of Dr. Aumento.



Dr. Aumento

## THE STEACIE MEMORIAL FELLOWSHIP

In memory of E.W.R. Steacie, president of the National Research Council of Canada 1952-62, the National Research Council established a senior research fellowship.

The Steacie Memorial Fellowship is intended to reflect Dr. Steacie's outlook and the things he stood for. His strongest convictions may be summarized as follows:

1. Fundamental (i.e. non-committed) research is vital to the development of science.
  2. In research the individual is the vital cog and the ideas of the individual are ultimately responsible for the important advances in science.
  3. The promising young scientist is our greatest asset, and he should be encouraged and given every opportunity to develop his own ideas.
  4. There are no national boundaries in science.
  5. For creative work in science complete freedom is essential. Over-organization of science and scientists is to be avoided.
- The late Dr. Steacie had an enormous influence on the course of development of science in Canada.

## PREVIOUS WINNERS

- Dr. R.F.W. Bader, Chemistry, McMaster University, 1967
- Dr. W.R. Datars, Physics, McMaster University, 1968
- Dr. D.T. Suzuki, U.B.C., 1969
- Dr. R.P. Pharis, Biology, University of Calgary, 1970
- Dr. P. Deslongchamps, Chemistry, Universite de Sherbrooke, 1971
- Dr. J. Shewchun, Engineering Physics, McMaster, 1972
- Dr. G.M. Bancroft, Chemistry, University of Western Ontario, 1973
- Dr. E.J. Davison, Electrical Engineering, University of Toronto, 1974.
- Dr. D.F. Stong, Geology, Memorial University, 1975.
- Another winner for 1976 is Dr. Jules Carbotte, Physics, McMaster.

# 41 Dal graduates among 68 Nova Scotia winners

A Rhodes Scholarship is tenable at the University of Oxford and the current value is approximately \$2,000.

More than 700 Canadians have won such scholarships, realizing Cecil Rhodes' fondest hope — "that a Rhodes Scholar would come to esteem the performance of public duties as his highest aim".

Sixty-six from Nova Scotia have gone to Oxford under the program and with the election of Phillip Bryden and Laurence Dunbar for 1976 the number jumps to 68.

This is the first time that the Maritimes have been considered as one unit for the selection of two scholars. Formerly it was one from each province (with P.E.I. eligible for either N.S. or N.B.).

A candidate may apply from the province he considers his home or from the university where the courses have been taken.

Dalhousie graduates who have won Rhodes Scholarships number 41, and 10 of those are now at Dalhousie.

They include:  
G.S. Stairs, 1904, practised law in Halifax/Dartmouth and died in 1947.

Arthur Moxon, 1906, a lawyer who practised in Saskatoon.

E.A. Munroe, 1908, became a Vancouver teacher, died in 1958.

J.E. Read, 1910, formerly International Court of Justice judge, retired to reside in Ottawa.

W.M. Billman, 1913, killed in action in 1916.

V.K. Mason, 1914, killed in action in 1916.

D.G. McCleave, 1915, died of wounds, 1916.

## 10 NOW AT DALHOUSIE

D.G. MacGregor, 1917, a professor at Mt. Allison.

H.V. Laing, 1921, a Halifax businessman who died in 1958.

J.A. Dunlop, 1922, a lawyer with a New York law firm until his death in 1954.

M.B. Emeneau, 1923, a Sanskrit professor at the University of California.

A.R. Jewett, 1927, formerly principal of Bishop's College and a professor at Acadia.

W.B. Ross, 1929, a professor at a New York college.

F.F. Musgrave, 1930, a businessman residing in England.

F.C. Underhay, 1931, a Boston Lawyer.

A. Gordon Cooper, 1931, a Judge of the Appeal Division of the Supreme Court of Nova Scotia

D.P. Wallace, 1933, a director of the federal government travel bureau.

C. Bruce Fergusson, 1935, Nova Scotia Archivist.

Henry D. Hicks, 1937, president of Dalhousie and a senator.

J.R.E. Smith, 1938, drowned in 1944.

J.A. Doull, 1940, a professor of classics at Dalhousie.

J.W. Grant, 1941, editor of the Ryerson Press, Toronto.

N.R. Goodman, 1946, a geologist living in New Glasgow.

A.E. Blakeney, 1947, former Saskatchewan premier.

Peter Hanington, 1949, former Saint John Lawyer, died in 1953.

I.H.S. Henderson, 1950, with the defence labs in Ottawa.

M.M. Tolmie, 1951, a professor at Mt. Allison.

R.N. Robertson, 1952, a Toronto barrister.

G.R. MacLean, 1953, vice-president at Dalhousie University.

A.L. Foote, 1954, a law professor at Dalhousie University.

A.M. Sinclair, 1956, a professor of economics, Dalhousie.

D.M. Murray, 1957, a professor of philosophy, University of Alberta.

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# Rhodes Trust votes yes to women; U.K. Parliament move awaited

The executors of the Rhodes Scholarship Trust have voted in favor of opening the Rhodes competition to women.

This requires a major change in the terms of the trust fund set up by Cecil Rhodes, the empire builder in South Africa.

Candidates for Canada's annual quota of 11 scholarships have had to be unmarried, male Canadian citizens between the ages of 19 and 25.

"Selection is made", says the

poster advertising the scholarships, "on the basis of school and college records without written examination.

The qualities which will be considered are: literary and scholastic attainment; qualities of manhood, truthfulness, courage, devotion to duty, sympathy for and protection of the weak, kindness, unselfishness, and fellowship; exhibition of moral force of character and

of instincts to lead and to take an interest in his fellows; physical vigor, as shown by fondness for or success in manly activities. Quality of both character and intellect is the most important requirement for a Rhodes Scholarship."

The trust is waiting for British anti-discrimination laws to be passed by Parliament before finalizing the revised guidelines for the scholarships.



By Jeffrey Holmes

Writing about women in the university, after an International Women's Year awash with articles and studies, may induce a severe attack of indigestion in my friendly neighbourhood MCP. But if sweetness and light is to prevail in this aspect of university relations a number of changes will have to occur before IWY+10.

Women as administrators. This is the end of the spectrum where women are rarest. You can find many in senior positions in libraries, schools of nursing and other traditional female bastions but the male dominates most areas of university administration, frequently to the exclusion of women.

In the Atlantic universities there is one woman president (at Mount St. Vincent) among almost a score of male presidents. There are no women academic vice-presidents or equivalent. There are no women with the title of administrative vice-president and only one who might be regarded as equivalent. A clear case of the invisible woman.

There is a feminist lining to this almost exclusively male cloud, in that the chairman (that's the title she uses) of the Maritime Provinces Higher Education Commission is a woman, Dr. Catherine Wallace.

Women as faculty. One explanation of the paucity of women in academic administration is the paucity of women among faculty. Figures in Women in Canadian Universities (AUCC/Statistics Canada) show females in the Atlantic region as 14.9% of full-time faculty, 1973-4. Slightly better than the Canadian average of 13% but hardly equal representation.

Atlantic distribution by disciplines is severely skewed. Women are no-shows in law, political science, botany, pharmacy, geology, dentistry, architecture, engineering and applied sciences and physics.

Women faculty lost ground in medicine but they made gains in philosophy, commerce and economics. And they form 50% to 100% of faculty in social work, household science and nursing.

(In fact, the tables show women as 0% for both household science and nursing ... probably a Freudian slip in a discussion where everyone automatically expects women to show at a disadvantage.)

Another example of showing only the bad side occurs in the October CAUT Bulletin (a good issue, I hasten to add). Using

**Mr. Holmes is executive director of the Association of Atlantic Universities.**

## VIII - THE --- ? --- EIGHTIES\*

## Women's Place is in the University?

Statistics Canada figures for assistant professor, associate professor and full professor, the editor calculated the percentage increase in median salary for male and female faculty. The Atlantic comparison between 1971-2 and 1974-5 showed a male increase of 17.4% for assistant professor, compared with a 15.6% female increase. At the associate professor level, the increase was 18.6% male and 13.4% female; at the full professor level, the women showed the better increase, 25.3% to 19.1%.

Women started from a lower base in each case and the median salary gap widened, of course, at the associate and assistant professor levels.

The immediate assumption is that things are getting worse. But another calculation, of percentage increase in faculty in each rank, would have given a different picture.

At the assistant professor level, the number of women increased from 39 to 60, while men increased only from 381 to 393. Associate professors, female, more than doubled from 18 to 39, while male increased 40%, from 285 to 393. At the full professor level, women increased by two-thirds from 9 to 15, while men increased 40% from 213 to 297.

So the numbers of women in the three senior ranks increased, from a very low base, at an appreciably faster rate than the number of men. And the widening salary gap actually signals an improvement!

If that sounds like male logic, let me explain.

The only way the standing of women in the university will improve, in the long run, is if the university hires proportionately more women. But new faculty usually start at the bottom of the rank and salary ladder so an

appreciable influx means a lowering of the median salary. In the same way, progress through the ranks by large numbers of women will lower the median salary in each rank for the next several years. (Leaving aside normal annual increase which is not relevant here.) It's not until an appreciable number of women have spent several years in the rank of full professor that this basic situation will reverse.

For women, however, this is the worst time to redress the balance because there's going to be very little hiring over the next 10 years.

(Do you ever get the feeling, ladies, that it's not your century?)

Women as caryatids. Women have formed a large part of the support staff of the university for years, although usually sex-typed into libraries, dining rooms and residences. And no academic establishment is complete without its complement of typists. The latter have traditionally worked for low pay in return for the privilege of helping a great man, or even a mediocre man, fulfill himself. There are signs that some women no longer feel fulfilled in this role. There are also signs that young men may start to invade this feminine occupation ... which was a masculine one back in the days of Bob Cratchit and fellow amenuenses. By the mid-eighties, sex-typing won't be what it used to be.

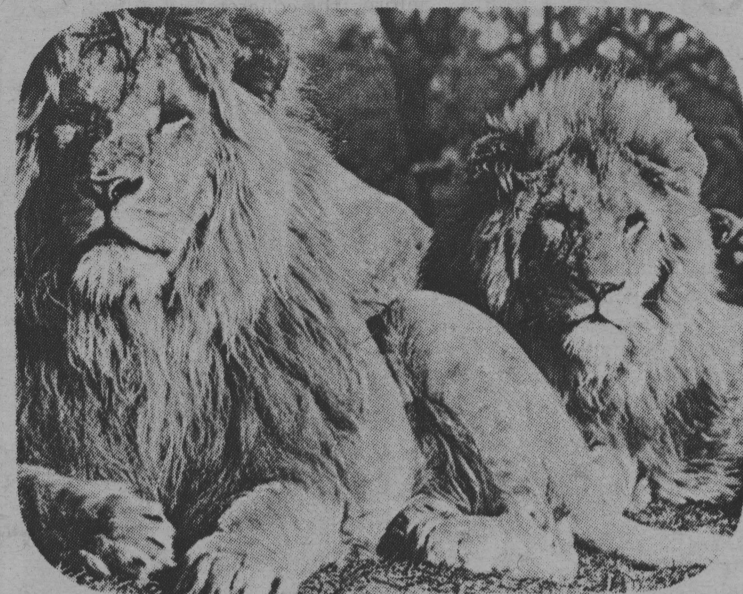
Women as students. To Mount Allison goes the distinction of being the first Commonwealth university to graduate a woman. But this early lead is only slightly reflected in modern statistics. All four Atlantic provinces, though, are ahead of the Canadian average in undergraduate female enrolment and all increased their percentage from 1971-2 to 1972-3. For the latter year, the Canadian average was 38.3%. Atlantic figures: Newfoundland, 38.4%; P.E.I. (highest in Canada), 44.6%; Nova Scotia, 40.8%; and New Brunswick, 39.5%.

At the graduate level, the percentage of Canadian degrees granted to women in 1972-3 was 24.4%. For Newfoundland it was 19.1%; for Nova Scotia, 23%; and for New Brunswick, 20%. The UPEI does not award graduate degrees.

At both levels, there was the same kind of imbalance as for faculty. One example: women made up about 1% of undergraduate full-time engineering enrolment and 99% of nursing.

At the part-time undergraduate level, women form a little over half of the enrolment for Canada. Again, Atlantic part-time female percentages are higher. At the graduate level, the reverse tends to be true.

The attitude persists that it is more important for the male to attend university. A quote from the Parsons' Report (on the drop in first-year enrolment at Memorial, 1973) illustrates one aspect of the situation:



"That's right, Harry, Women!"

"It cost parents more to send females to university than males. One reason is that females found it more difficult to get summer jobs to help finance their education than did males and were more reluctant to avail themselves of Canada Student Loans."

While females may have difficulty getting jobs to finance their own education, there are still many who work to help put a husband through university. Some may feel like the lady mentioned in a recent Dalhousie Review article on Bliss Carman: "His fiancée (sic) of ten years standing, Julie Plant, finally tired of waiting for him..."

(Fear not, gentle reader, she married a Boston businessman.)

Women as athletes. Women students have moved from "suitable" extracurricular activities to challenge the male in almost every area, from student affairs to athletics. In this latter field, the percentage of athletics budgets devoted to women has been scandalously lower than that for men, but there are signs of a

change. There is a change, too, in the attitude of young women, many of whom have been prone to regard athletics as fun and to confine their activities to intramural. Recent reports indicate that women's teams are now recruiting outside the region in order to build winning intercollegiate teams, which everyone knows are the best kind.

Women as women. Athletics is just one area where university women are developing the masculine virtues of drive and aggression. These should help women to the forefront of university activities over the next decade. The only rider is that the traditional male virtues are not held quite as highly as they once were.

Women, in fact, could do worse than deciding which of the traditional feminine virtues should be cultivated in the university, where "every prospect pleases, And only man is vile."

Reader's choice: Epicene; Electronic; Exigent; Egocentric; Emaciated. \*

## Closure bids opposed

Beset by financial difficulties, Columbia University, which recently put \$5m of its property up for sale continues to look for ways to cut costs. The closing of some of its colleges is increasingly a cause of conflict in administrative circles.

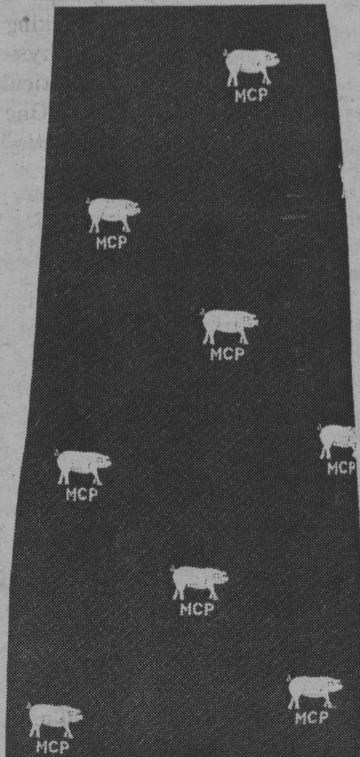
Dr. Peter Pouncey, dean of Columbia College, has proposed that two schools — Barnard College and the School of General Studies — be shut down and merged with Columbia College. Barnard College is the "women's affiliate" of Columbia College. The School of General Studies is an undergraduate school for adult and part-time students.

Administrators at both Barnard and General Studies are vigorously opposing Dr. Pouncey's proposal.

## Play the stock market says research report

Private colleges and universities should invest on the stock market if they want to avoid immediate bankruptcy, says a research report published last month. They should not spend more than 5 per cent of their endowment each year, ploughing back the rest for reinvestment.

The report, by a New York research foundation, Twentieth Century Fund, cites the conclusion of the Carnegie Foundation earlier this year that financial difficulties would force one in every 10 private colleges to shut down, merge or consolidate within the next five years; it urges trustees to decide what they want their institutions to do in the future.



Perfect gift for the man who has everything: A Male Charitable Person tie. (Courtesy Owner Holmes)

The several hundred board feet of brand new planking that was laid on the steps outside the Killam Library just before Christmas cost \$608.40 plus labor.

Expensive? Not when the reasons are considered. The boards are necessary to give a better walking surface during snow and ice; on top of that, the concrete steps have deteriorated in places to the extent that they could be dangerous even in good weather, so possible injuries were also

avoided.

The boards will be left on the steps until permanent repairs to the concrete are made.

Meanwhile, the Department of Physical Plant more than compensated for the cost of the planking. This year they did not supply any Christmas trees — normally they provide four or five — to various areas of the campus, nor did they put up any outdoor decorations for the festive season.



(cont'd from p. 1)

flavor that even skim milk is affected.

"About four or five times in a year, we get milk at home that has a definite off-flavor," says Professor Alexander. "The plastic bag has obviously been at the top of the display for a while and exposed at close range to the bright lights in the dairy case. Once these reactions start, the flavor deteriorates rapidly, regardless of the storage conditions in the home."

If milk fat reacts to light, then butter, ice cream, cheese and other high-fat products would be even more sensitive than liquid milk. Such is the case. The parchment wrapping used for butter does little to protect butter from light. Proposed federal legislation would require an opaque wrapping for butter.

Not only the flavor of butter but its nutritional content deteriorates upon exposure to fluorescent light. Two important nutrients, vitamin A and its precursor, B-carotene are destroyed rapidly when exposed to the ultra-violet wavelengths in fluorescent light.

Cooking oils are generally sold in clear glass or plastic containers which do not screen the contents against light. Brown glass bottles provide adequate protection for all oils tested except rapeseed oil. Tin cans provide the safest packaging for edible oils, provided the cans are not damaged or corroded.

Dating of food packages would provide only limited control of light-damaged food. Milk can show detrimental effects after only three hours exposure to fluorescent lights. Packages from the same production run will be affected in varying degrees, depending on their location in the store display.

Informed consumers can get the best flavor and nutritional value from their food dollar. Being aware of these light exposure hazards, they can protect themselves by not taking milk or butter from the top of the display and by purchasing cooking oils in tin containers.

(Following publication of the article, Prof. DeMan appeared on the CTV network program, Canada AM, to talk about the "Guelph" findings).



## Tigers not extinct; reports awaited

By Allison Berry

"Tiger, Tiger, burning dim" said the headline on a recent Maclean's article by local writer, TV hostess and alumna Marilyn Macdonald.

Mrs. Macdonald reported that Dalhousie was considering dropping out of college football or, at least, joining a number of other not too successful Maritime schools to form a second

division in the Atlantic conference.

And Hugh Townsend, sports editor of the Herald, wondered in one of his columns about the workings of a proposed three-division conference.

Well, the Tigers aren't extinct yet. We'll have to wait a little longer for official word on their future. But they are being

scheduled in the playing plans for next season.

Meanwhile, two groups are meeting at Dalhousie, taking a look at the School of Physical Education, with particular reference to competition. One is the Sport and Recreational Council, which will report to the President; the other is an internal committee of the school.

## Top U.S. wrestlers at Dal

One of the strongest collegiate wrestling teams in the U.S. starts its Maritime tour tonight at Dalhousie.

The Hofstra University Flying Dutchmen, out of Long Island, N.Y., participate in an invitational tournament tonight at 7 at the Dal gym continuing tomorrow, Saturday, Jan. 10, starting at 9 am with finals at about 3 pm. On Monday at 7 pm, the Flying Dutchmen will oppose the Dal Tigers in a dual meet.

The Dutchmen, coached by Bob Getchell, feature several of the top intercollegiate wrestlers in the U.S. The Tigers' coach, Bob Thayer, says the Hofstra visit will provide valuable experiences for Maritime wrestlers, and the opportunity to inspire public interest in wrestling.

There is no admission charge to any of the events, which are open to the public.

## Exercise wear added to towel service

The Athletic and Recreation Services Division at Dalhousie will augment its towel service by offering a laundry package to both, male and female community, effective Jan. 5.

Personal clothing, suitable for exercise, will be provided over the counter. Access to the service is available for a fee of \$10., the minimal amount estimated to cover the purchase of the applicable clothing. Labor costs will be absorbed by the division. The system will be evaluated in April.

Identification may be purchased at the Equipment Control Centre in the Gymnasium. The service is available on this cycle until April 16. Please direct your questions to the ECC or phone 424-2043.

Schedule of Charges:

	Male	Female
Laundry \$10	T-shirt	T-shirt
	Shorts	Shorts
	Socks	Socks
	Athletic Support	
	Towel Service - \$4.00	
	Total Package - \$14.00	

### ATHLETICS SCHEDULE

NOTE as well that the following changes have been made to CIAU/CWIAU Championships.

CIAU Hockey - site is now Toronto - March 12, 13 & 14, 1976.

Volleyball - site is now Winnipeg - February 26 & 27, 1976.

Sat.	Jan. 10	6:00 p.m. Basketball [Women] Dal at Mt.A. 8:00 p.m. Basketball [Men] Dal at Mt.A.
Sun.	Jan. 11	1:00 p.m. Basketball [Women] Dal at UPEI 3:00 p.m. Basketball [Men] Dal at UPEI
Mon.	Jan. 12	7:00 p.m. Wrestling-Hofstra at Dal
Thurs.	Jan. 15	7:00 p.m. Wrestling-Hofstra at Dal [Tentative]
Friday	Jan. 16	8:00 p.m. Basketball [Men] Husson at Dal
Thurs.	Feb. 19	
Friday	Feb. 20	AUUA Swimming Championships
Sat.	Feb. 21	[originally February 12-14/76]

# Age-parity system gets fertility pattern results

By  
Roselle Green

Found — a research project that requires no funding. All that's needed is a pencil, some graph paper, a calculator and a vigorous researcher like Dr. Aden C. Irwin, professor of preventive medicine.

Dr. Irwin, who considers himself an amateur demographer although he has studied in related areas of statistics, epidemiology, public health and social medicine, is now busily engaged in an extensive study of fertility patterns among women in Canada.

His interest in this subject was initiated by a versatile statistical technique for studying fertility trends applied in American

studies. The technique suggests that live birth rates by median age of mother and by mean birth order (parity) are important factors in examining changes in fertility patterns in the population.

Demographers have also applied the concept of age-parity perimetry often referred to as "excess" births. This is defined as "all births occurring to women under 20 or more than 39 years of age, or a birth order of more than four at any age of mother."

Dr. Irwin applied the age-parity technique (with some modifications) to an analysis of fertility trends in Nova Scotia for a period covering 1952-71.

This was carried out as a summer project with the help of a third-year medical student. The results of the study were published in the Nova Scotia Medical Bulletin (Dec. 1973).

From the accompanying chart, the following observations were made:

\*Nova Scotia women are giving birth to fewer children than 20 years ago.

\*Babies are being born to younger women today as compared with 20 years ago, but the decrease in the median age of mothers has been accelerated by the introduction of oral contraceptives.

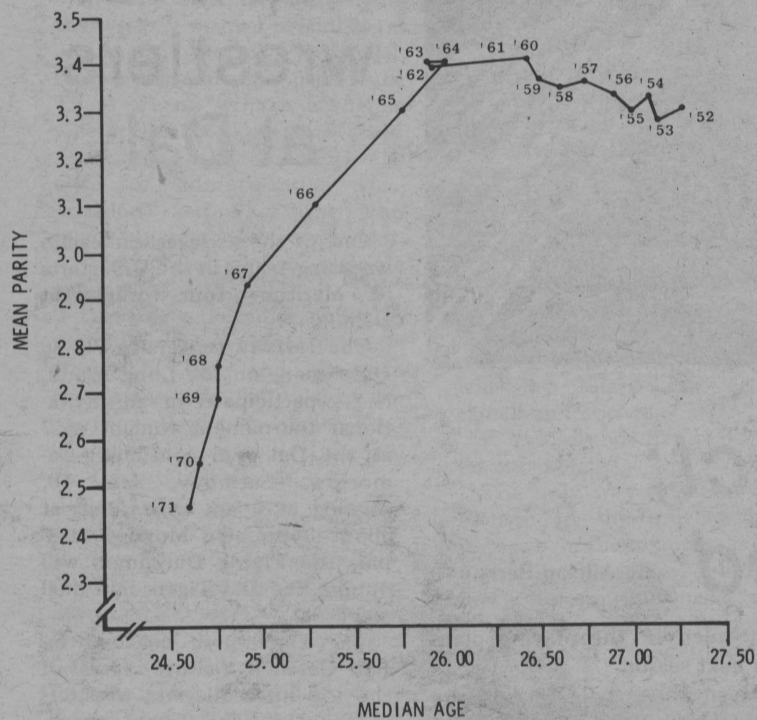
\*Since 1965 birth control practices and education have begun to affect substantially the size of families.

The study also included that slightly over 70 per cent of all births could be classified as optimum (not "excess" births according to the criteria), and that women under 20 were not being reached by current family planning programs and services.

Dr. Irwin is now working on an extension of this project by investigating fertility trends in Canada beginning in 1928. The study, now reaching completion, may have some interesting ob-



Dr. Aden Irwin is a robust gentleman who studies population change and factors that influence that change. (John Donkin, A/V Services)



servations to make about the contraceptive "pill" and its effects on fertility trends.

Dr. Irwin's age-parity grid shows that in 1928 the average age of women having babies was nearly 29 years and the parity was a little over four. By 1973, the average age was down to 25.6, with parity at 2.04. The trend seems to say that the average age and the mean parity are dropping. The only disruption being the period from 1940-45. The pill was introduced in 1961, but according to his calculations, it appears that

the average age of women having babies was dropping in any case. However, he adds, what the pill has done is to provide child-bearing women with two options — it can restrict the size of the family and it can also postpone a family to a later period. And this is in fact what seems to be occurring. The age-parity grid shows that the average age of women having babies has reversed and is now occurring in their later middle 20's. If this pattern continues for several years then we should be able to discern a trend.

## Biology researcher studying effects of worms in seafood

The effects of parasites transmitted to humans in raw, undercooked, lightly marinated or smoked seafood, has been a subject studied in recent years.

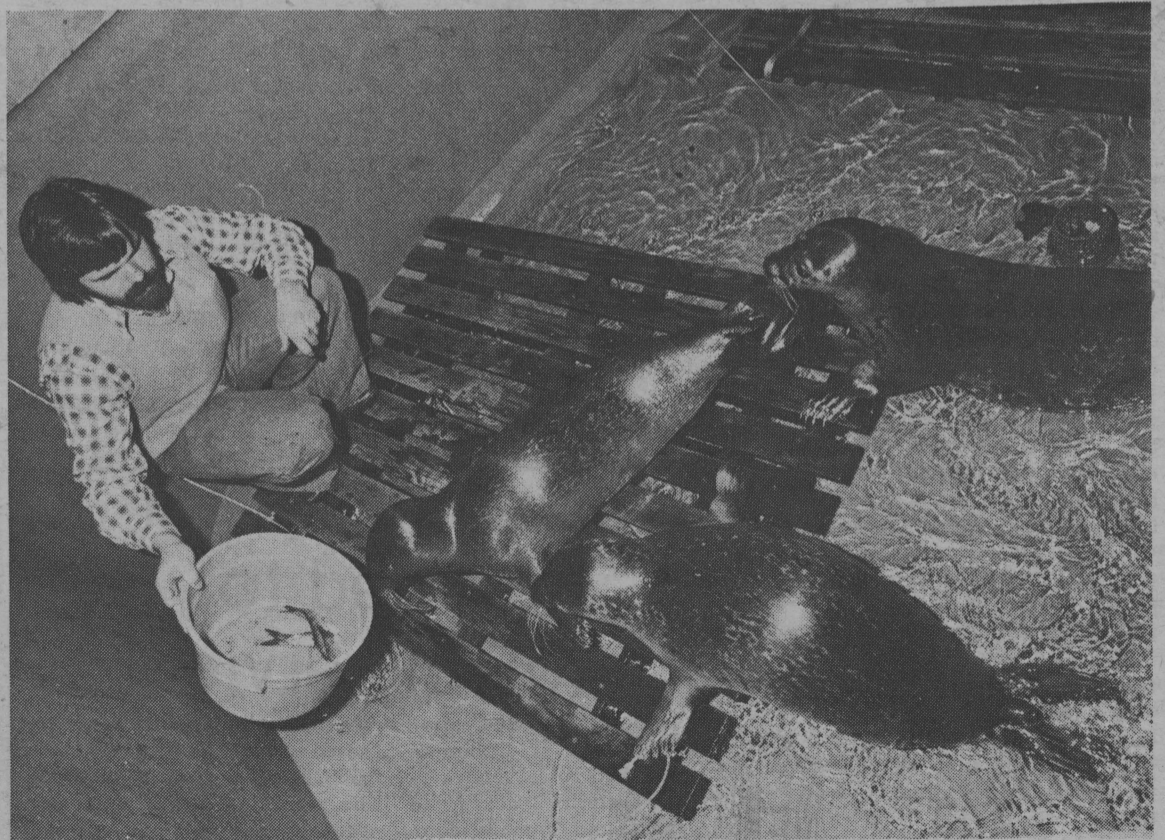
Dr. Gary McClelland, research associate in the Biology Department at Dalhousie, is the principal investigator of such a study under the auspices of the American Food and Drug division of HEW.

He is investigating the effects of roundworms (aniakines), the larvae of which appear in the flesh of fish, and in turn are consumed by marine mammals

in their natural environment. They mature, causing inflammations in the stomach wall.

Currently he is doing a comparative study of the course of the infection and the pathology in harbor and grey seals.

Nematode larvae are obtained from the local fish plants; seals are exposed to them in doses similar to their normal intake. To date it appears that the grey seals seem to be better hosts. More larvae survive to adulthood with the resultant inflammatory response being less severe in this species. The worms also grow



Gary McClelland and seals. (John Donkin, A/V Services)

larger and produce more eggs in grey seals.

Economically, worm infestation is a cosmetic problem which makes fish processing more costly. Further, adoption of maximum allowable levels of worm infestation by FDA may

force fish processors to improve "deworming" procedures, or lead to abandonment of fisheries where the incidence of worms is high.

From the medical perspective, the disease (anisakiasis) is prevalent in both the Netherlands

and Japan where raw fish is part of the regular diet. To date only a dozen cases of human infection have been reported in North America. However, the disease is difficult to diagnose and the majority of cases probably go undetected.

# If you play with calculators, why not look inside and find out how they work

By Roselle Green

This is what physics professor Barry Paton has done, partly as a spin-off from his own studies of the motion of electrons in metals and partly because of his fascination with the subject.

With the advent of integrated circuits (consisting of 100's or 1000's of transistors, resistors and capacitors), digital electronics has come to the forefront and is now used extensively in all modern scientific instruments. The most common digital devices are the hand-held calculator, digital clock or digital watch.

This trend was one reason why a third-year class in experimental physics (which Paton set up) spends some time in building and studying digital circuits. The class is hard work. Enthusiasm and motivation is often generated by students' own interest. They must come up with a conceptual plan for a project, carry it through the design stage, construct it — often suffering the pangs of frustration, and the joys of success. In a real sense it is learning by experience, by trial and error, and lessons learned in this way are seldom forgotten.

Some of the projects that have come out of this class and summer student efforts, has been the construction of an instrument capable of decoding the direction of a compass needle points, or the direction of the wind. With a little imagination, he says, you can see how the idea could be adapted (for example) by oceanographers to decode ocean currents or as a directional aid for the blind. Another unique project conceived by a student interested in this subject was a TV typewriter

developed so that it could display information on an ordinary TV screen.

Prof. Paton makes it all sound very simple. The method for all projects comes from one basic approach...define the problem, determine what you want to measure, convert it to an electrical signal, put it in a digital format and VOILA, you have an exotic but inexpensive digital instrument.

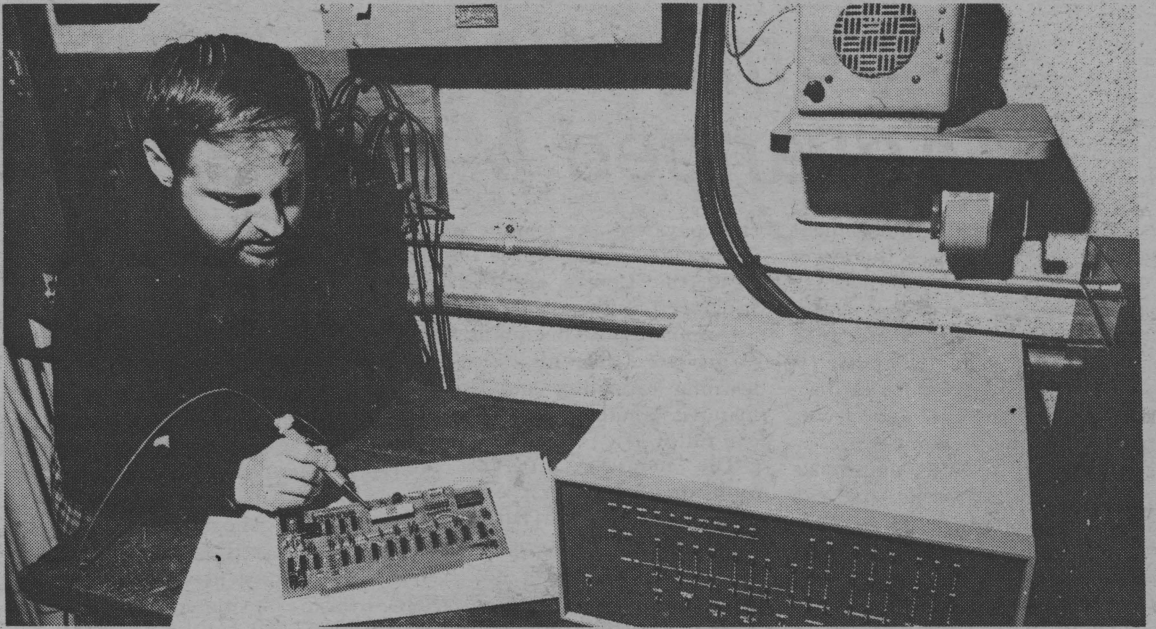
What this all means is that we are getting into a generation of "smart" instruments. They can make decisions and carry out repetitive operations at the same time. Their capabilities are tremendous, according to Paton. The key to the whole concept is a microprocessor, and this will be the subject of a summer physics research project.

Dr. Paton outlined the idea behind the summer proposal:

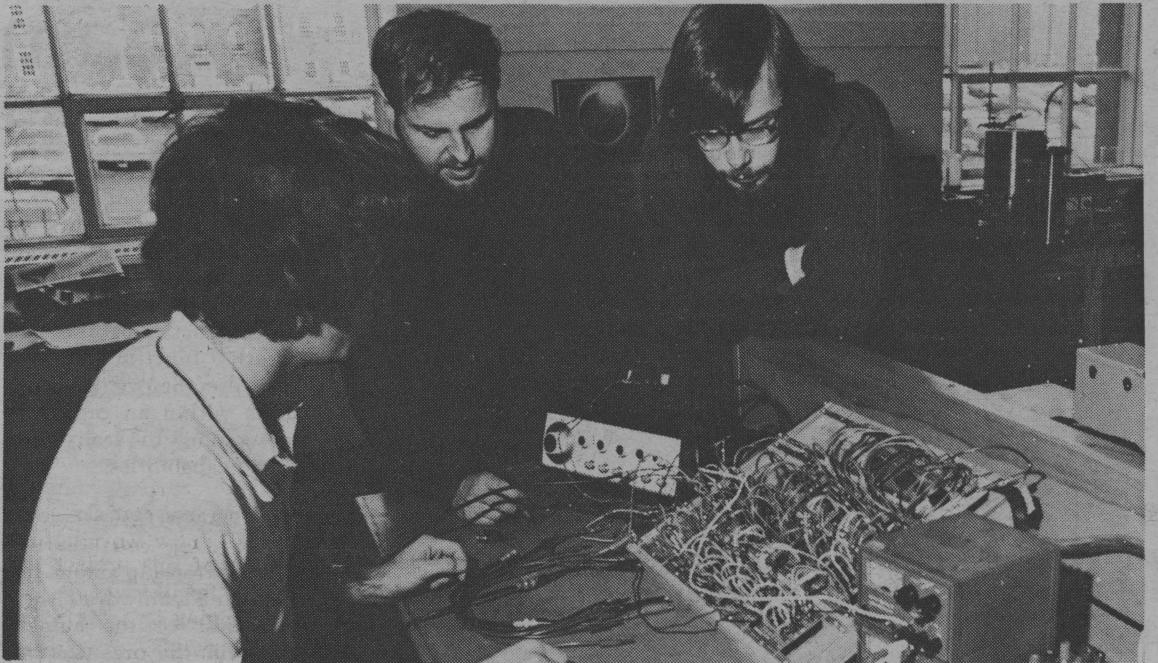
"Research scientists can now look forward to the day when their passive measuring instruments can become "smart", handling jobs such as collection, averaging and sorting of data without the need for an expensive computer.

The whole key to this generation of instruments is the PROM, a programmed routine which will generate whatever information, control codes, or computations are required. Each scientist will have his own needs and the PROM will be programmed to his specification."

In effect, his system will be a combination of a computer and a measuring instrument all in a small box, which will be both inexpensive and versatile — a system that many people with different interests and varied problems can use.



Dr. Paton points to the microprocessor integrated circuit (computer on a chip), the heart of a new generation of "smart" digital instruments.



Dr. Paton and lab demonstrator Brian Hoyt (on the right) survey the rat's nest of wires and IC's that go together to become a digital frequency counter built by Wally Wardrop, third-year physics student (on the left).

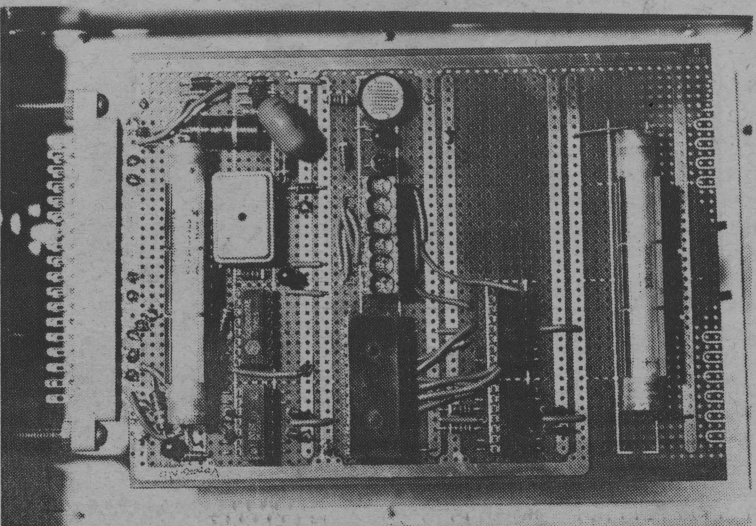


At right: Graduate student C. Purcell watches the digital temperature controller being bread-boarded by Brian Hoyt.

Below: Dr. Paton types a digital message on an ordinary TV set using a TV typewriter built by a summer student Rod Regier, now in third-year engineering.



Close-up view of the integrated circuits used in a digital clock destined for the time standard of the new physics observatory atop the Dunn Building. (Photos by John Donkin, A/V Services)



## Companies' in-house needs keep Advanced Management Centre busy

The Advanced Management Centre is more active than ever before with its in-house learning programs for managers, programs that are custom designed for business. The two most recent were conducted for Eastern Provincial Airways and Irving Pulp and Paper in Saint John.

In-house sessions emphasize certain business skills that can make a company function more effectively. A preliminary to the program is to identify problem areas, select the kind of activity the company wants changed or modified. The client organiza-

tion pays for the service, which is provided by resource leaders from the Centre and Atlantic provinces' universities.

Companies are becoming more conscious of this kind of learning capability and the demand is greater than the centre can fulfill.

The in-house programs are only one of several executive development activities the Centre offers. An eight-month manager achievement course introduced in October is moving along successfully, with 18 people from Newfoundland,

Nova Scotia and New Brunswick enrolled.

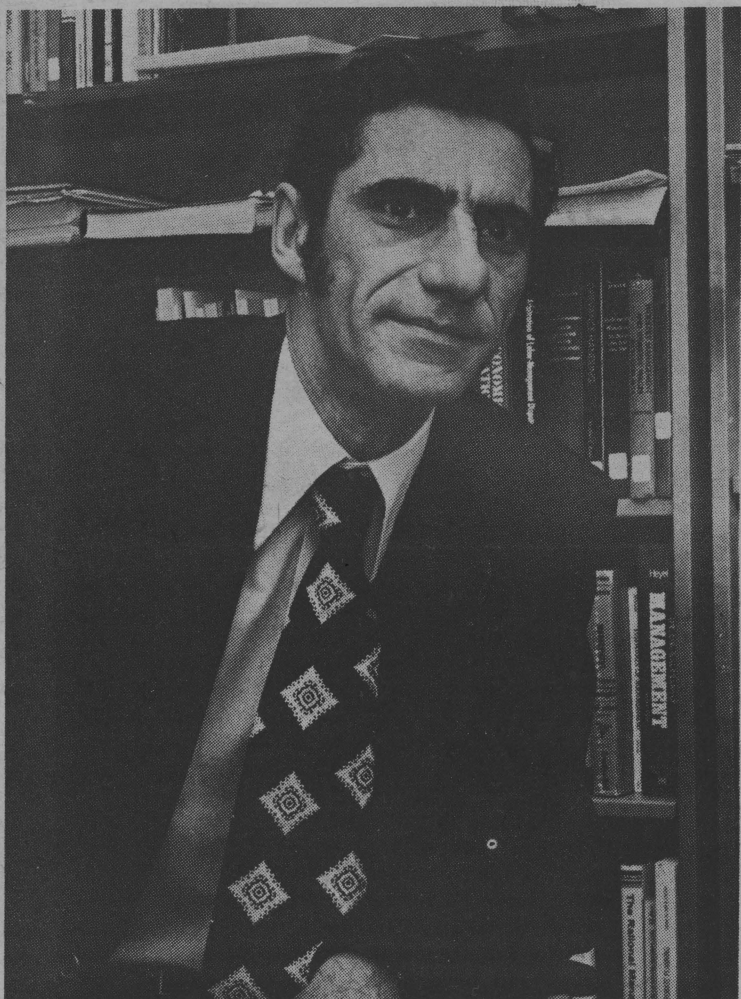
What the course does is to provide a substantial business administration program at which individuals attend classes for three full days a month with assignments at home in the intervals. The course is a first in the Atlantic provinces. It suits the needs of Atlantic industry which, for the most part, is small and scattered rather than localized in one central area. Another measure initiated to serve the needs of the Atlantic industrial community is a resource library.

Companies through the service have access to approximately 30 management films for their own company. In addition there are a number of self-instructional texts and educational aids in the traditional areas of business. The resource bank is extremely active.

The staff of the centre is experimenting with audio-visual self-instructional modules of one and a half hours duration. There are currently three each on accounting and interviewing. These are designed to be used in the

plant without the assistance of a teacher. Case studies, handouts, text material support the learning modules. Experimentation in this medium has proven to be a valuable educational tool. Next year there will be additions.

Foundation funds for the centre's activities come from DREE through the Atlantic Management Institute, an inter-provincial agency made up of people from business and educational institutions.



Jack Dougall: "There are definite ways to bring about greater collaboration among and within groups. The form it takes will depend on the nature and needs of the enterprise." (John Donkin)

## Teamwork essential

Teamwork is an essential ingredient if an organization is to function effectively, says Jack Dougall, director of Dalhousie's Advanced Management Centre.

The concept of teamwork in an organization calls for change in a variety of forms but in general the model applies to any organization that performs an administrative function. Today, more than ever before, management units within an organization are coming to realize its benefits and capabilities.

### WHAT IS TEAMWORK?

Teamwork is a collaborative leadership relationship among individuals. Often teamwork either does not exist or the human climate within the organization does not permit it to develop. When this occurs, measures by management can be taken to improve these relationships.

### WHAT FORM DOES IT TAKE?

Management and administration is all-encompassing when dealing with an organization, regardless of whether it's business, government, industry or an institution. It refers to a work group where there is an open relationship, free expression, where the environment permits individuals in the group to identify common

problem areas and move towards resolution of these problems.

### HOW DOES IT WORK?

Every organization has a sub-culture with a group of values. This in turn involves relationships. There is always a high component of group dynamics in which individuals engage in subconsciously. When this gets out of hand, the group must be made aware of what has happened, and understand that certain procedures can be applied to bring their working relationship under control.

There are proven approaches for improving teamwork. It's an educational process in which individuals take part. Having generated an activity (good or bad) they can look at it collectively, analyse it and see what has occurred as a consequence of their acts. One of the most constructive techniques for this assessment process is videotape.

### WHAT ARE THE TOOLS?

A consultant can introduce a number of tasks in which groups can participate. Having identified the problem, he can employ certain behavioural approaches to bring about awareness and change. If, for instance, the problem is one of communi-

cation, then he could begin by asking his clients to identify how they perceive communications among themselves within the organization; he could examine case studies with them; set up behavioural simulations such as a rumor clinic to make a point; look at open and closed organizational networks in order to show how messages flow; demonstrate how influences can improve or impede communication; view and discuss film sequences on communication skills; carry out trade-off exercises where individuals score their own communication patterns and records. All of these tasks provide feedback to the individual so he can better understand how he and others interact in the group.

### CAN TEAMWORK BE MEASURED?

Not always, but those who have experienced it can often point to success, through more effective work done, with less frustration. Disagreements are resolved with greater awareness and tolerance. Operating problems are addressed within the group.

## Managing your time

Have you ever stopped to consider how important your time is to you, or whether or not you spend your time wisely?

Don Mills of the Advanced Management Centre has studied the question of the management of time and states that it's not the hours you put in that count, it's what you do in those hours.

Work consumes a surprisingly small share of modern man's time, he says. For instance, fifty hours a week, 50 weeks a year, for 45 years (20-65) adds up to 100,000 hours — only half as much as the 200,000 hours many people sleep during their lifetime.

Where does your time go at work? Does the time spent provide a low pay-off or does the time expenditure yield a high pay-off? These are questions

which everyone who works should ask themselves and which can only be answered by analysing your present use of time.

The major sources of time management problems at work are the telephone, meetings, reports, visitors, delegation, procrastination, firefighting (dealing with emergencies), special requests, delays and reading. In analysing your time, the place to begin is with a daily time log on which you list your goals for the day, in terms of results desired, not activities. Next you record the use of your time during each 15 minute interval throughout the day. At the end of the day, ask yourself if you have accomplished what you had set out to and what you could have done or eliminated to improve your yield. Generally, you will

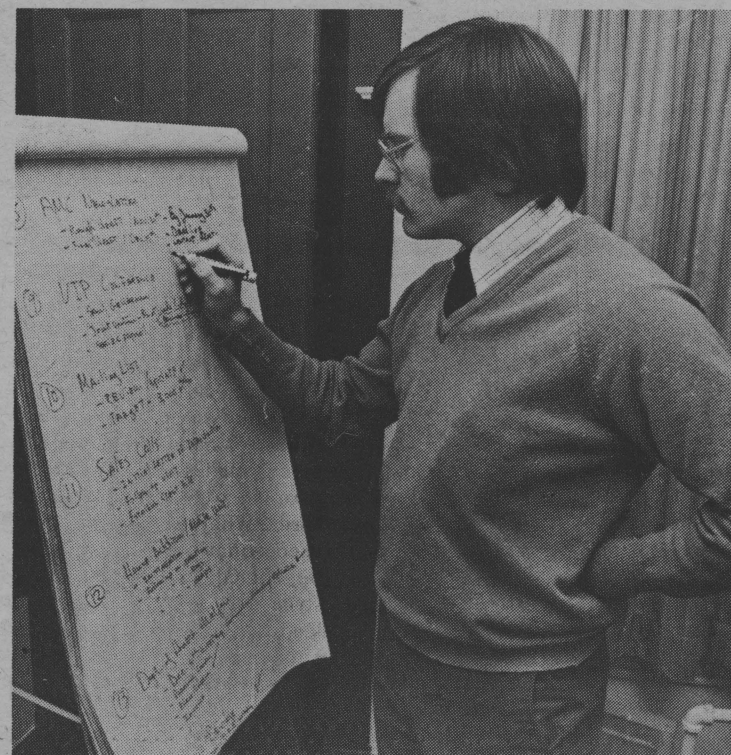
find that there are a number of activities that you could have either eliminated completely or given to someone else to do.

The chart on page 9 demonstrates some of the usual timewasters as related to the managerial functions of planning, controlling, communicating, decision-making, directing and staffing.

"It's important to develop an awareness of time as a resource. Administrators should develop a trouble-shooting process to identify timewasters, to analyse the causes, and to seek out possible solutions. Management of time cannot operate by instinct, it takes analysis, thought and imagination.

"Don't take my word for it,"

[cont'd on p. 9]



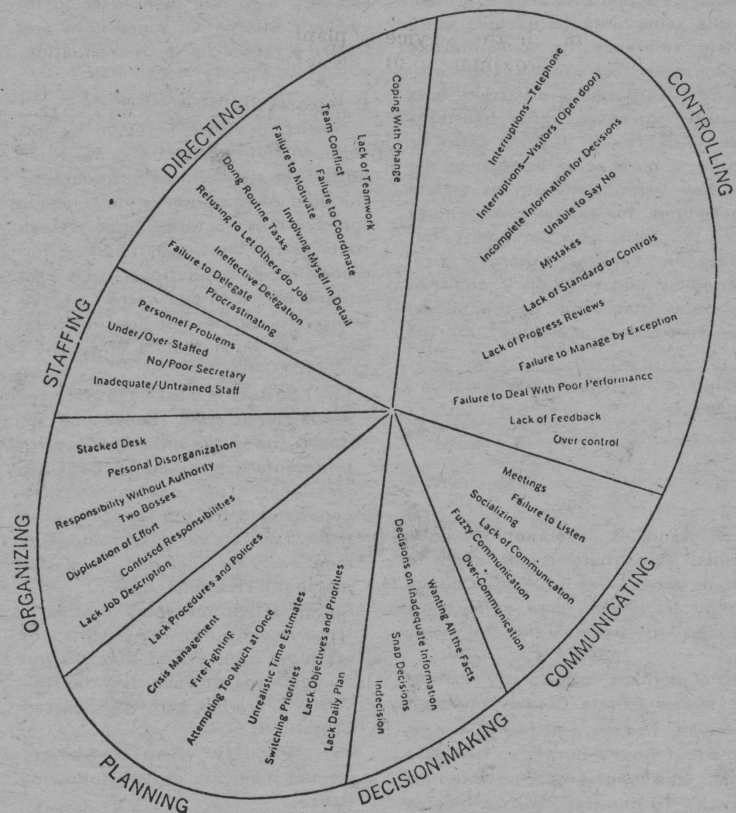
Don Mills (John Donkin, A/V Services)



[cont'd from p. 8]

## Managing your time

### Time Wasters Related To Managerial Functions



he continues, "try the following practical approach to time management".

**ANALYZE YOUR TIME:** jot down the time spent during the week at various activities—such as travelling to and from work, reading and dictating letters, answering the telephone, attending meetings, etc. The breakdown is usually quite a revelation and the appropriate categories can be made to suit the individual.

**EVALUATE TIME EXPENDITURES:** how many of the time-consuming activities on the analysis list have to be done at all? How many small tasks could just as well be carried out by someone else?

**RELATE TIME TO PURPOSE:** how is the allocation and expenditure of time related to important goals?

**DELEGATE AUTHORITY:** the best reason for delegating is to give more time to do the things you want to. If you don't delegate properly, you probably

end up doing your job plus that of a subordinate.

**FORWARD PLANNING AND SCHEDULING OF TIME:** although plans will frequently have to be changed, forward planning and scheduling of time will definitely lead to a better utilization of your time.

Mr. Mills is responsible for the administration of on-going management development programs as well as serving in the capacity of a resource leader in various management courses for industry and government, including such organizations as Eastern Provincial Airways and Irving Pulp and Paper. He says that as a rule of thumb, 20% of our working time yields 80% of our productive output and 80% of our working time results in only 20% of our productive output.

"Time is a resource, and as such, has to be managed in the same way as any other limited resource."

## First practical manual on stress analysis

Dalhousie alumni William Bowes, now a professor of engineering at Carleton University and Leslie Russell, an associate professor with the Nova Scotia Technical College, have written a major work on stress problems.

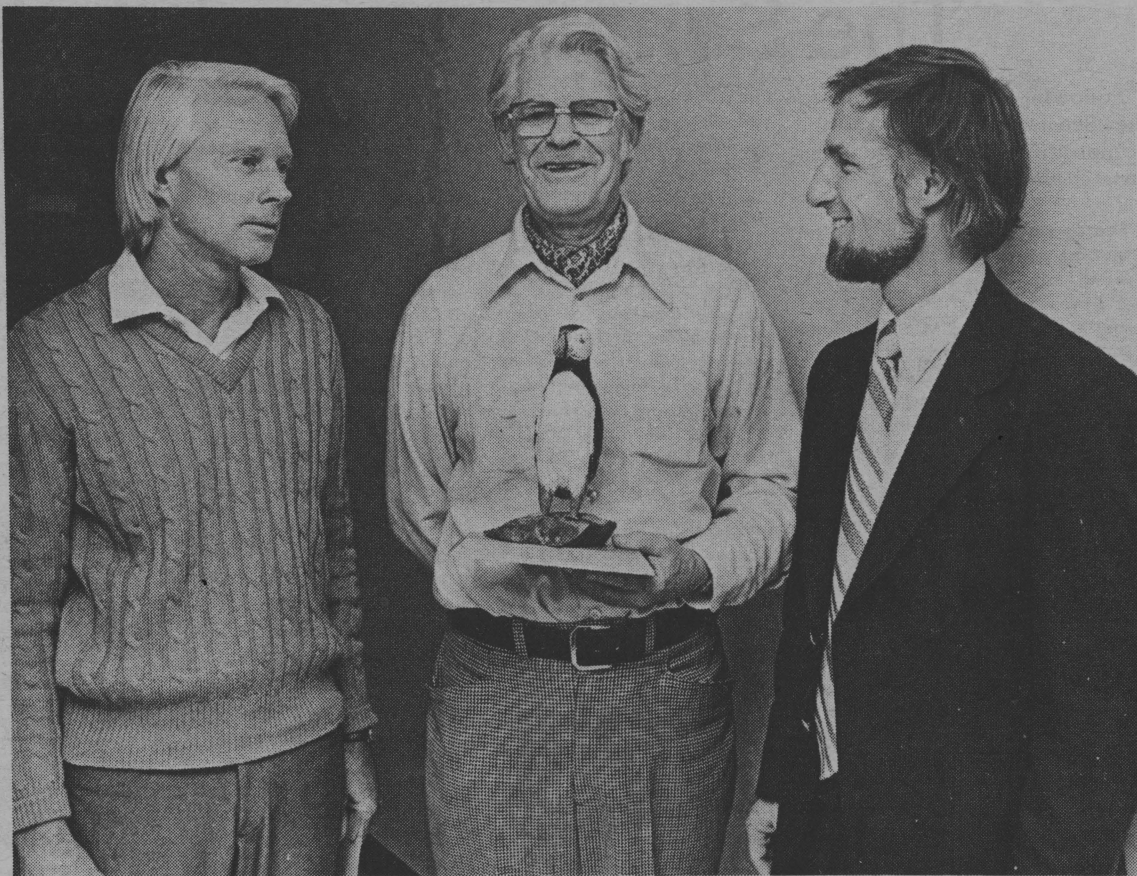
Stress Analysis by the Finite Element Method for Practising Engineers is the first practical manual written about the method which was developed about 20 years ago.

In an interview with Carleton University's internal publication,

"This Week at Carleton", Professor Bowes explained that the finite element method "solves mechanical stress problems that people could only guess at before. Whereas former methods used equations that could rarely be solved, this method breaks structures into finite pieces, leading to simultaneous linear equations which can be solved by numerical methods."

The method was developed in the aircraft industry in 1956 but

(cont'd on p.12)



Dr. Lloyd Macpherson, receiving the "Puffin of the Year" award from the Nova Scotia Bird Society at the society's annual meeting. Left: Ralph Widridge; right: Dr. Fred Dobson, president of the society. (Wamboldt-Waterfield)

## Puffin award for Dr. L. B. Macpherson

The Nova Scotia Bird Society was founded in 1955 with 46 people paying dues at the very first meeting. Today there are about 600 members, including many Dalhousians.

Dr. Lloyd B. Macpherson, Dean of the Faculty of Medicine, was recently awarded the society's "Puffin of the Year". The 1975 Puffin honours Dr. Macpherson's 20 years of dedication in compiling results of the Christmas bird counts in the province.

In 1974, he compiled Christmas count reports of 109,000 individual birds, comprising 131 different species.

As Barbara Hinds, another bird enthusiast, reported in the Mail Star (Dec 9, 1975): "The records have shown trends in bird population and have been used by wildlife services in the U.S.A. and Canada as indicators

of human interference and of natural trends.

"When they began in the early part of the century, bird watchers were thin on the ground. In the past 20 years, the number of people taking part has increased rapidly and the number of species seen in Nova Scotia has risen from some 50 to an aggregate of 178."

Another ornithologist is Ann Linton of the Biology Department, who is chairman of the society's conservation committee. It acts as the spokesman for the society's concern for wilderness and wildlife. As Dr. Fred Dobson, newly elected president said at the annual meeting: "The society has a commitment to cultivate action not reaction, helping to publicize information on public issues honestly."

## Mount goes public with events listing

People in the Halifax-Dartmouth area who want to be kept informed about Mount Saint Vincent University's public events can now receive information by mail.

The Mount's office of public relations will mail a monthly listing of events to anyone who calls or writes to ask for it. Included in the listing are events in the art gallery, public lectures and poetry readings, special or short non-credit courses offered by the department of continuing education, theatre events, films and other special activities.

Write to the public relations office or call 443-4450, local 249 or 132.

## \$360,000 grants for displaced S.E. Asia scholars

Forty-two displaced scholars, formerly professors in South Vietnam or Cambodia, have received awards amounting to \$360,000 from the Ford Foundation.

Some awards will make it

possible for research to continue that was begun before the scholars fled their countries. Others will support studies on the progress of the Vietnamese and Cambodian refugees, since their arrival in America.

(cont'd on p.11)

# The Senate committee's report in full

Following is the full report of the Senate Committee on the composition of Senate and Senate Council.

The committee was established on a motion adopted by Senate at its meeting of April 14, 1975. The motion read:

that K.A. Heard, A.M. Sinclair and D. O'Connor constitute a Senate Committee to study and make recommendations regarding the composition of Senate and Senate Council and to report to Senate before Dec. 31, 1975.

At the Senate meeting of Sept. 15, 1975, Miss H. Spinelli was elected to replace Mr. O'Connor who ceased to be a student at Dalhousie.

The committee has met several times, and has made studies of Senate structures in a selected number of other Canadian universities as well as of the way in which Senate and Senate Council have functioned with respect to issues of relevance to the Committee's inquiry.

This report deals with the following matters:

1. Data from other Canadian universities
2. Present Composition of Senate
3. Attendance at Senate Meetings
4. Present Composition of Senate Council
5. Attendance at Senate Council meetings
6. Comments on present structures
7. Possible alternative structures
8. Recommendations

## 1. Data from other Universities

Data were collected on the composition of the Senates of nine other universities in Canada. The Universities of Alberta, Calgary, Manitoba, and Saskatchewan possess structures that are not directly relevant to Dalhousie's system of governance, in that they possess other bodies, variously called the General Faculties Council or the General University Council, in addition to a Senate. These General Councils, however, are composed in a manner and would appear to exercise functions that would suggest a closer resemblance to more general notions of a senate than do the actual Senates of these universities. Consequently we include reference to these Councils in our surveys where it seems appropriate.

In all the Universities surveyed the Senates (or Councils) comprised an ex officio element and an elected faculty element. The ex officio element universally included the President, Vice-Presidents, Deans, and the Librarian, but practice varied with regard to the other officers who might be named. In some universities the Chancellor is included; in some the Director of Continuing Education (or Extension and Summer Sessions). Those with affiliated campuses or colleges invariably include the principals of those institutions. The total number of ex officio members varied from twelve (at Carleton) to twenty-three (the General Faculties Association at the University of Alberta — which has thirteen deans). Most commonly the number is fifteen or sixteen.

Of the five universities with the usual type of senate, the number of elected faculty members was with two exceptions, roughly proportionate to the sizes of the respective faculties. At Queen's for example the School of Nursing has two representatives and the Faculty of Arts and Science has thirteen. On the other hand, at the University of British Columbia each Faculty is represented by two members. Carleton's Calendar does not specify the basis of election for the elected members of the Senate.

Some universities modified the system of Faculty representation by electing, as well, faculty members at

large. At U.B.C. ten such members are elected, at U.N.B. six, but neither Queen's nor McMaster's used this system.

The total number of faculty members in the Senates of the Universities on which information was specific varied from eighteen at U.N.B. (plus, however, five elected faculty members of the Board) to forty-seven at Queen's. U.B.C. and McMaster each had thirty-four elected faculty members, and, it would seem, so did Carleton. There may, however, be added three professors named among the "Special Appointments" in the Carleton Calendar.

Nearly all the universities had student members of the Senate. Queen's University is one university that does not have any student members, and there are no students on the General University Council of Saskatchewan, although there are student members on the latter university's Senate. Evidence with regard to Carleton is inconclusive. Some universities (e.g., McMaster, and — with respect to their General Faculties Councils — the Universities of Alberta and Calgary) have separate representation for undergraduate and graduate students. U.B.C. has one student elected by each of the twelve Faculties plus five students elected at large.

Leaving aside Carleton, on which information is uncertain, we find considerable variance in the number of students on Senate. McMaster has four undergraduate and two graduate students, while U.B.C. has seventeen. U.N.B. has six students from the Fredericton Campus and one from the Saint John Campus. At the other extreme from Queen's, we find on the General Faculties Council of the University of Alberta a total of forty-four student representatives, equal to the number of elected faculty members.

In addition to these components we variously find included on these senates, representatives of alumni, representatives of the Boards of Governors and representatives of affiliated colleges. Some also include a Secretary appointed from outside the membership of Senate.

The total size of the Senates investigated and of which we have confident knowledge varies from forty-nine at U.N.B. to seventy-eight at U.B.C.

## 2. Present Composition of Senate

On the evidence supplied by the Secretary of Senate the present total membership of the Senate at Dalhousie is 264. This includes seventeen ex officio members, twenty representatives of Affiliated Institutions, fifty-seven Chairmen or Heads of Departments and Directors of Schools or Institutes, all full professors (136), twenty-seven faculty members elected in varying numbers by the different Faculties, the President of the Faculty Association, the President of the Student Union and five elected student representatives.

More detailed information is provided in the Appendix.

## 3. Attendance at Senate Meetings

No attempt was made to conduct an exhaustive study; nor, it is felt, is one needed. In the nine meetings of Senate during the 1974 calendar year the average attendance was 41.8. In the seven meetings from January to October in 1975, the average attendance has been 41.9 — or, on average, slightly under sixteen per cent of the total membership.

## 4. Present Composition of Senate Council

As presently constituted, Senate Council consists of twenty-nine members. Of these, seventeen are ex officio: the President, five Vice-Presidents, the Acting President of Nova Scotia Technical College, the

Presidents of Mount St. Vincent University and the University of King's College respectively, seven Deans, and the Registrar and Secretary. The other twelve members are made up of the President of the Student Union and the President of the Faculty Association, two students elected by the student members of Senate and eight faculty members elected by the faculty members of Senate.

## 5. Attendance at Senate Council Meetings

From January to November 1975 there have been twelve meetings of Senate Council. The average attendance at these meetings has been 14.8. The breakdown of these figures is as follows:

Category of membership	Total membership	Average attendance
Ex officio	17	8.0
Faculty	9	4.7
Students	3	1.6
	29	14.8

## 6. Comments on existing structures

Some comments are so obvious that they hardly need mentioning. Nevertheless, for the record, and for better or worse, the composition of our Senate, as far as our enquiry goes, is unique. Clearly, it is inconceivable that the Senate could function if the virtue of absenteeism had not become the dominant norm. Effectively only a small proportion — probably about a quarter — of the total Senate body carries on the business of the supreme academic body of the University.

Our Senate, moreover, is unusual not only with respect to its overall size, but also with respect to the fact that all full professors sit on it as of right. Whether full professors, like the guardians in Plato's *Republic*, are patently superior in virtue and wisdom to the "lower ranks" may be open to serious question. At the pragmatic level, however, one may suggest that if present trends persist, both the absolute numbers of full professors and the proportion of full professors to total faculty, will increase.

On these grounds, the Committee believes, inter alia that the principle of automatic membership for full professors should be abandoned. It also believes that Dalhousie should be brought more into line with practice elsewhere, and that the size of Senate should be reduced.

There is some feeling on the other side, namely, that the "effective" membership of Senate is reasonably small and that it conducts its business with a reasonable degree of diligence and effectiveness. It is thought by some, moreover, that there might arise issues in the future that would arouse widespread interest and that on such occasions it is expedient that the present large numbers of Senators should be able to assemble to discuss such issues. Nevertheless, the Committee is not persuaded by this argument, because as presently constituted the Senate does not, in fact, adequately represent the whole academic community of the University.

With regard to Senate Council, no information could readily be gathered on similar bodies elsewhere. It is possible that Senate Council as an institution, is also unique to Dalhousie. Further comment on the inference that may be drawn from this speculation will be made in the next section. Nevertheless, if it is assumed for the moment that Senate Council is a useful body that should be continued, its present membership, in the Committee's opinion, should not. Whatever other criticism may be made of its composition, the Committee submits that the present preponderance of ex officio members in the Council should not persist.

## 7. Possible Alternative Structures

The Committee has no mandate to

investigate the functions of either Senate and Senate Council, and it does not, therefore, propose to report on those functions or on the manner in which they are performed. At the same time to exclude completely reference to such matters would mean that questions of composition were being discussed in a vacuum. Moreover, these questions have been raised in one form or another a number of times over the last few years. Criticism of Senate proceedings, for example, sometimes takes the form of a complaint that debate in Senate is largely preempted by Senate Council, and that the issues that come before Senate seem to be "cut and dried". On the

other hand, it is sometimes complained, that there is no need to debate some issues in Senate Council if they are, in any case, going to be debated in Senate the following week.

It is perhaps noteworthy that of the twelve Senate Council meetings reviewed, five were of less than one-and-a-half hour's duration, five were longer (the longest meeting lasted for 2 hours 10 minutes), and two lasted exactly one-and-a-half hours. On the other hand of the seven Senate meetings one meeting lasted exactly one-and-a-half hours, one went over that time (1 hour 50 minutes), and five were shorter meetings. The number of items on the agenda of Senate Council meetings ranged from four to twelve, and on the agenda of Senate meetings from seven to twelve. It would appear from these facts that discussion at both Senate and Senate Council can rarely be extensive, and that few matters coming before these bodies are likely to be discussed in any depth. While the Committee is aware of a distinction between length of discussion and level of discussion, it is nevertheless of the opinion that there must be some question whether the present bodies are well adapted to perform their deliberative functions.

One possible avenue of structural reform would involve the abolition of the present Senate Council. It would appear that there are, at least, a number of universities which do not have a body corresponding to our Senate Council. It is also questionable whether the Senate Council adds a significant component to our deliberative processes. The Committee feels itself precluded by its terms of reference from actually recommending the abolition of Senate Council. Nevertheless, this is its preferred option, and it is one which the Committee believes should be seriously considered.

If Senate Council were abolished, a number of alternative structures might be suggested, viz:

(i) A smaller Senate, without any replacement for Senate Council. Under this option, the membership of Senate might be fixed at 40-50 members, with the expectation that normal attendance would be in the range of 20-25.

(ii) A Senate, together with a number of functional standing committees — e.g. general academic regulations, degree programmes, discipline, planning, etc.

(iii) A Senate, together with a number of divisional committees which might, for example, correspond to the designations of our Vice-Presidents.

No doubt other possibilities might suggest themselves to members. Should Senate move in this direction, it would presumably be useful to establish a further committee to investigate alternative suggestions and to bring forward a recommendation.

## 8. Recommendations

The Committee, in making the following recommendations, would hope that they will be considered in the light of the observations made in the previous section. Since it feels itself bound, however, to bring forward recommendations that are compatible with its terms of reference, it assumes the continued existence of both Senate and Senate Council.

(i) **Senate:** The Committee recommends that Senate be reduced in size and that faculty representation should be based on elections. The composition recommended for the Senate is given below, but its various components may each be regarded as a separable sub-recommendation.

(a) **Ex officio members:** President, Vice-President, Presidents of affiliated universities and institutions, Deans of Faculties, the University Librarian, and the Registrar. (Total: 13).

(b) **Faculty Representation:** elected members on the following basis:

Faculty of Administrative Studies . . . . .	4
Arts and Science . . . . .	13
Dentistry . . . . .	2
Graduate Studies . . . . .	4
Health Professions . . . . .	2
Law . . . . .	2
Medicine . . . . .	5
	32

Elected at large . . . . .	12
President of D.F.A. . . . .	1
Total Faculty . . . . .	45

(c) Student representation, on the following basis:

Elected by Administrative Studies . . . . .	1
Arts and Science . . . . .	3
Dentistry . . . . .	1
Graduate Studies . . . . .	2
Health Professions . . . . .	1
Law . . . . .	1
Medicine . . . . .	1
	10

President of Student Union . . . . .	1
Total . . . . .	11
Total Senate membership . . . . .	74

## (ii) Senate Council

The main changes contained in the following recommendations are found in the reduction proposed in the ex officio component. This reduction is inevitable if the faculty membership is to be brought into balance with the ex officio members without at the same time expanding the total membership to an unrealistic size.

(a) **Ex Officio:** President  
1 Vice-President appointed by Vice-Presidents

2 Deans elected by the Deans  
1 Registrar  
Total: 5

(b) **Faculty:** 6 members elected by the Faculty members of Senate from among their membership.  
1 President of D.F.A.  
Total: 7

(c) **Students:** 2 students elected by the Student representatives of Senate from among their membership.  
1 President of Student Union  
Total: 3

Total membership: 15

(iii) It is recommended that students should be elected annually for one-year terms; and that faculty members of both Senate and Senate Council should be elected for three year terms (except in the first instance), and that one-third of the membership should retire each year.

# Who's on Senate now

I. (a) Ex Officio — President, Vice-Presidents, Deans, Registrar	17
Affiliated Institutions	
Kings 3	
Mt. St. Vincent University 5	
Nova Scotia Technical College 12	20
(b) Chairmen — Heads of Departments, Directors of Schools or Institutes	57
(c) Professorial Rank — (other than as in (b))	136
(d) Other Academics — Elected Representatives of Faculties	27
Rep. of Dalhousie Faculty Association	1
(e) Students — President Student Union	1
Elected Representatives 5	6
	264
BREAKDOWN	
II. (a) Ex Officio	17
Affiliated Institutions	
Kings 3	
Mt. St. Vincent University 5	
Nova Scotia Technical College 12	20
(b) Chairmen — Heads of Departments, Directors of Schools or Institutes	
Arts & Science 23	
Medicine 18	
Dentistry 6	
Administrative Studies 4	
Graduate Studies 2	
Health Professions 4	57
(c) Professorial Rank — Full Professors	
Arts & Science 70	
Law 16	
Medicine 29	
Dentistry 4	
Administrative Studies 6	
Graduate Studies 8	
Health Professions 3	136
(d) Other Academics — Elected	
Arts & Science 16	
Law 1	
Medicine 5	
Dentistry 1	
Administrative Studies 2	
Health Professions 2	27
President of D.F.A.	1
(e) Students — President Student Union, 5 elected reps.	6
	TOTAL 264

(cont'd from p. 1)

## Cut Senate plea

1 — Senate (to be reduced from 264 to 74 members).

i — Inclusion of University Librarian in ex-officio membership.

ii — Exclusion of Heads of Departments, Directors of Schools, etc. (at present this category amounts to 57 members).

iii — Reduction in representation of affiliated institutions from the present 20 members to three (the presidents of such institutions or, presumably, their alternates; if Nova Scotia Technical College became amalgamated with Dalhousie, its faculty members would presumably qualify for separate Faculty representation).

iv — Abolition of right of full professors to be members, and substitution of a system of elected faculty representatives (this involves reducing the present number of 164 Faculty members, not counting chairmen, etc.).

v — Increase of student representation from six to 11. This is recommended not so much on grounds of principle as on the more pragmatic ground that representation of students by faculty would make that representation more meaningful.

2 — Senate Council (reduced from 29 to 15 members)

i — Reduction in number of ex officio members from 17 to five.

ii — Exclusion of presidents of affiliated institutions (can be present when appropriate).

iii — Reduction of Faculty representation from nine to seven (student representation remains as it is now).

## Corporate aid up 8.5%

Corporate contributions to higher education rose by 8.5 per cent in 1974 over the previous year. The Council for Financial Aid to Education estimates that in 1974 business and industrial corporations in the United States gave a total of \$445m to higher education.

But the rise in corporate profits — 14.7 per cent — outstripped the rise in gifts to higher education. Based on a survey of 799 major corporations, the council calculates that corporate profits went from \$122.7 billion to \$140.7 billion during the same period. \*

(cont'd from p. 9)

British Columbia was elected for one year to fill a vacancy caused by the death of W.C.D. Pacey.

The full board is as follows: President, Dr. Oliver; Vice-president, Dr. Duckworth; Past-president, Dr. Kerwin; Executive director, Dr. Claude Thibault (ex officio).

Nine university presidents, principals or rectors:

(Until 1976), Dr. R.W. Begg, University of Saskatchewan; Dr. J.R. Evans, Toronto; Rev. Malcolm MacDonell, St. Francis Xavier;

(Until 1977), Dr. A.N. Bourns, McMaster; Dr. H.N. Gunning, Alberta; Dr. Pauline Jewett, Simon Fraser;

(Until 1978), Dr. J.M. Anderson, UNB; Dr. R.J. Baker, UPEI; Dr. E.J. Monahan, Laurentian.

Twelve directors-at-large:

(Until 1976), Dr. Louis Berlinguet, Quebec; Joe McGhie, Alberta; Dr. B.E. Riedel, UBC; Dr. Pierre Senay, Quebec; (Until 1977), Dr. Vianney Decarie, Montreal; Luc Giroux, Sherbrooke; Mrs. Marquita Riel, Quebec; Dr. W.H.M. Selby, Memorial;

(Until 1978), Dr. L.E. Devlin, Victoria; Mrs. Arlene Dick, Toronto; Prof. W.A. MacKay, Dalhousie; Prof. Evelyn Moore, Calgary.

## DFA community relations survey form circulated

The Dalhousie Faculty Association has established a Community Relations committee to generate ideas for building better bridges between the human resources of Dalhousie and the community groups which need them. In addition they're looking at Dal's physical resources.

To obtain ideas and an assessment of faculty opinion on community involvement, a questionnaire was circulated to faculty just before the holidays. If you have not received one, use this one and return to Prof. Michael Bradfield, Economics, as soon as possible.

### DFA COMMUNITY RELATIONS COMMITTEE

#### General

- Should the university put more resources into:
 

Yes	No
a) evening courses	
b) off campus courses	
c) non-credit short courses	
d) free tuition for senior citizens	
e) campus tours	
f) other (specify)	
- Where should these resources come from?
 

a) outside funding (suggestions)	
b) switch funding from other areas (e.g.)	
c) other	

- Should the community be able to use Dal's physical facilities, such as:
 

Yes	No
-----	----

- |                            |  |
|----------------------------|--|
| a) libraries               |  |
| b) recreational facilities |  |
| c) meeting rooms           |  |
| d) theatres                |  |
| e) audio/visual equipment  |  |
| f) computer                |  |
| g) faculty club            |  |
| h) other (specify)         |  |

- Should Dalhousie charge for the use of these resources?
 

No	Nominal Charge	Full cost
Depends		

#### Specific

- Given your present commitments, what type of assistance would you be able to provide for community groups or the community-at-large?
 

a) current information	
b) informal lunch-hour discussion groups	
c) laboratory demonstrations	
d) write newspaper articles	
e) media interviews	
f) organize-workshops field trips	
g) Speakers Bureau	
h) supervise students' research papers on community issues	
i) act as Departmental contact between the community and your department	
j) other (specify)	

- In the normal course of your work, are there activities which the public might find interesting and could attend without interfering with the academic process, such as:
 

Yes	No
a) lectures	
b) laboratory demonstrations	
c) field trips	
d) other	

- Should the University
 

a) provide additional funding to support community-related projects?	Yes	No	Depends (on)
b) recognize community work as a legitimate University contribution to be considered in matters of salary, promotion, and tenure?	Yes	No	Depends
c) recognize community work as a legitimate duty to be considered in matters of administrative work load?	Yes	No	Depends
d) other (specify)			

- In the event that the University provided no additional incentives to work with the community, how would this affect your willingness to become involved?
 

Not at all	Some	A lot
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- Additional comments:

#### Personal Information:

Age: Under 35      35-45      Over 45  
 Rank Full      Associate      Assistant      Instructor  
 Faculty:  
 Part-time      Full-time  
 Male      Female  
 Do you accept consulting work? Yes      No  
 If interested in working with our committee, please add your name.

Please return to M. Bradfield, Economics Dept.

# TAH-DAH traditions continues

## ARTS CENTRE SPECTACULARS FOR WINTER, SPRING

Tonight and Saturday evening at 8:30 p.m., the Rebecca Cohn stage will see giant puppets and other strange props as MUMMENSCHANZ appears!

MUMMENSCHANZ is a Swiss mime group...a witty trio of delightful artists whose clever antics are guaranteed to bring forth giggles from children and loud guffaws from their elders. So says the Cultural Activities new Winter/Spring brochure.

We're inclined to believe them, the group that presented a spectacular TAH-DAH fall season! This term there are 19 major events scheduled, not including the Sunday afternoon concerts, music and theatre department offerings and the great film screenings most Sunday and Wednesday evenings.

The VIENNA CHOIR BOYS, one of the world's best loved choirs will be at the Cohn next

Friday (Jan. 16) at 8:30 p.m. Founded over 450 years ago, the group is known for consistently presenting an enchanting evening of costumed operettas, sacred songs, secular and folk music.

The Winnipeg based CONTEMPORARY DANCERS have established a high standard of excellence in their performances across Canada. Their appearance on Jan. 17 at 8:30 p.m., at the Cohn, will appeal to all dance

enthusiasts.

Other highlights over the months to come include Bob Greene's World of Jelly Roll Morton, The Royal Winnipeg Ballet, and the Hank Snow Show, not to mention one of Halifax's favorite sell-outs, the Preservation Hall Jazz Band.

On Jan. 15, "Music of the Great Classic Composers" will be performed by the Dalhousie Piano Trio, 8:30 p.m., Cohn Auditorium. Harmon Lewis gave a free organ recital in St. Mary's

Basilica Thursday evening and William Valleau and William Tritt performed last Sunday; all three are with the department of music.

Now at the Art Gallery — the First Dalhousie Drawing Show, a study of drawing as a medium used by some contemporary Canadian artists who do not regularly exhibit these drawings.

Complete information on Art Centre happenings can be found in the 1976 schedule, available at the Arts Centre.

## No discipline code

No attempt will be made at present to draw up a University Code of Discipline.

Professor E.T. Marriott, Dean of Student Services, was asked by Senate to consider whether or not such a code was needed. He reported back last month: No.

## Harvard fund up \$1.32 billion

Harvard University increased its endowment fund last year by \$1.32 billion according to the university's annual financial report. This represents a 13 per cent increase over the previous year's \$1.19 billion endowment. The rise in the value of the endowment marks a significant reversal of the 16 per cent drop during the previous fiscal year.

## Nuclear medicine Institute topic

"Nuclear Medicine — What's That?" is the topic Dr. R.H. Martin, guest speaker, will cover at the fourth ordinary meeting of the Nova Scotian Institute of Science.

The meeting will begin at 8:30 pm on Monday, Jan. 12 in Room 101 of the Sir James Dunn Science Building.



R.J. Smith

## R.J. Smith takes over culture committee

After a year without leadership, the General Committee on Cultural Activities at Dalhousie is back in business with the presidential appointment of Dr. Rowland J. Smith, Department of English, as chairman of the committee.

Dr. Henry D. Hicks announced in late December that Dr. Smith, who has recently returned from sabbatical leave at Oxford, had agreed to accept the helm of the working committee.

The committee has four sub-committees — art, theatre, film, music — that work with permanent coordinator and general administrator Erik Perth and his staff to produce a balanced cultural activities program for the Arts Centre.

Representatives from Dalhousie, other educational institutions in Halifax sit on the committee while liaison with culturally-oriented metro groups is an ongoing endeavor.

### DALHOUSIE WOMEN FACULTY

Second Meeting  
January 13, 11:30 a.m.  
Senate Board Rm. A & A

PLEASE COME and help establish the priority action items that will help women become a visible and viable force on the Dalhousie campus.

If you have a schedule conflict but want to have input into the establishment of priorities, please fill out the form below. Part-time faculty are particularly important, so let us hear from you.

Name: \_\_\_\_\_ Dept: \_\_\_\_\_

Rank: \_\_\_\_\_ Phone: \_\_\_\_\_

Full-time \_\_\_\_\_ Part-time \_\_\_\_\_ Tenured? \_\_\_\_\_

List your concerns:

Will you accept a committee assignment? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, what type of work are you happiest doing?

Return to:

Dorothy Broderick, School of Library Service,  
Killam Library, ext. 3656.

### FACULTY SEMINARS ON

#### New Approaches to University Teaching

Tuesday, Jan. 13

12.30 pm

Lecture Theatre A, Tupper Building.

Curriculum Innovation in the University

Coffee on tap; bring your own lunch. \*

### UNIVERSITY TEACHING and LEARNING SERIES

for graduate students and faculty members

"Course Outlines and Student Evaluations"

3:30 p.m. Jan. 23, Great Hall, Faculty Club

[cont'd from p. 1 ]

"However, in view of the difficulties of persuading people to accept a different format as proposed in each of the past few years, I suspect that neither students nor faculty concerned in any of these faculties would willingly forego a separate convocation at this stage," said the Vice-President.

Following is the convocation schedule:

Wednesday morning, May 12 — Cohn — Dentistry (DDS, Dip. Dental Hygiene, & MSc (oral surgery).

Wednesday afternoon, May 12 — Kings's).

Thursday morning, May 13 — Rink — Arts & Science (BA, BMus, BEd).

Thursday afternoon, May 13

— Rink — Arts & Science (BSc, BSc Eng-Phys, MA, MSc, PhD.)

Friday morning, May 14 — Cohn — Health Professions

(BSc Pharm., BPE, BN, Dips. PHN,

OPN, Physiotherapy; MSc Pharm, and MPE.

Friday afternoon, May 14 — Cohn — Administrative Studies

(BComm, MBA, MPA, Dip. PA, Cert. PA, MLS, MSW, Dip. SW)

Monday afternoon, May 17 — Cohn — Law (LLB, LLM).

Tuesday morning, May 18 — Cohn — Medicine (MD).

(Morning events are expected to begin at 10; afternoons at 2).

## DAGS publishes Newsletter

The Dalhousie Association of Graduate Students (DAGS), in an effort to keep graduate students informed of the activities and policies of the DAGS council, publishes a monthly newsletter.

Contributions to the Newsletter and copies of the latest issue are available at the Grad House, on the corner of University Avenue and LeMarchant Street.

[cont'd from p. 9 ]

had limited use as few places had computers large enough to handle the equations.

"Now that these are widely available many stress problems that couldn't be solved prior to the invention of the method can be solved with relative ease. In effect, this means that machine parts and larger structures can be designed with more reliability and greater safety."

Both Professor Bowes and Russell have used the book in their teaching through the Carleton continuing education program. It is designed for use as a text and also for those engineers who have completed their training.

\*\*\*\*\*

*Stress Analysis by the Finite Element Method for Practising Engineers*, by W.H. Bowes and L.T. Russell, is published by Lexington Books, Toronto, 1975. 195 pages. \$16.95 hard-cover. R.A.

[cont'd from p. 3 ]

J.R. Keyston, 1958, a physics researcher.

R.H. March, 1960, chairman of the physics department, Dalhousie.

D.W. Stairs, 1961, former director of the Centre for Foreign Policy Studies at Dalhousie, now professor of political science.

R.A.G. Lines, 1961, of Bermuda, who was awarded the scholarship for that country.

R.E. McAllister, 1963, professor of physiology and biophysics at Dalhousie.

George Cooper, 1965, Halifax lawyer.

I.G. Chambers, 1966, Halifax lawyer.

J.A. Titerle, 1973, having been in his first year of law school when awarded the Rhodes Scholarship, Mr. Titerle took a degree at Oxford, and returned to Dal to complete his law program.

Phillip Bryden, 1976, Dalhousie history major.

Laurence Dunbar, 1976, law graduate.