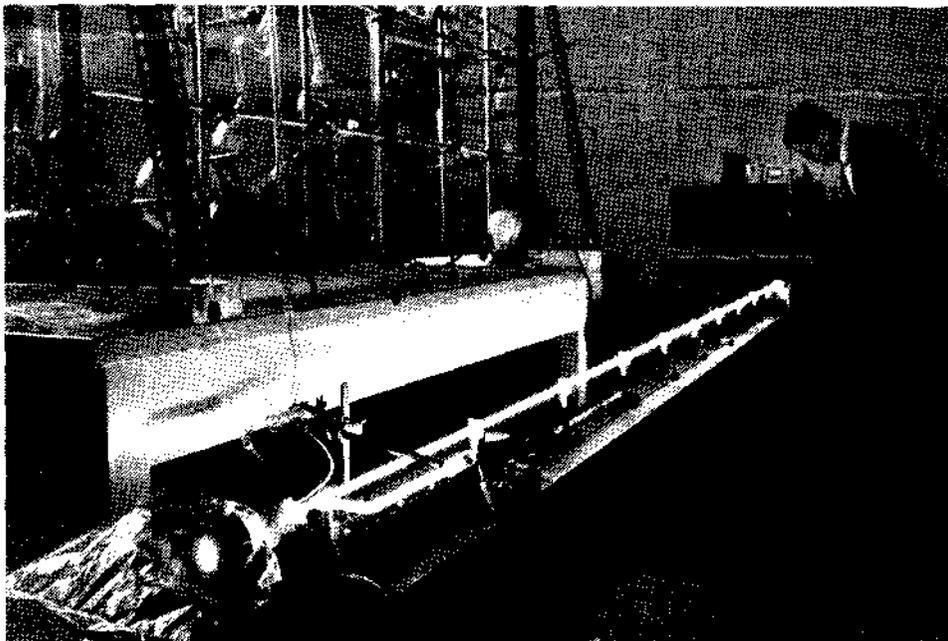
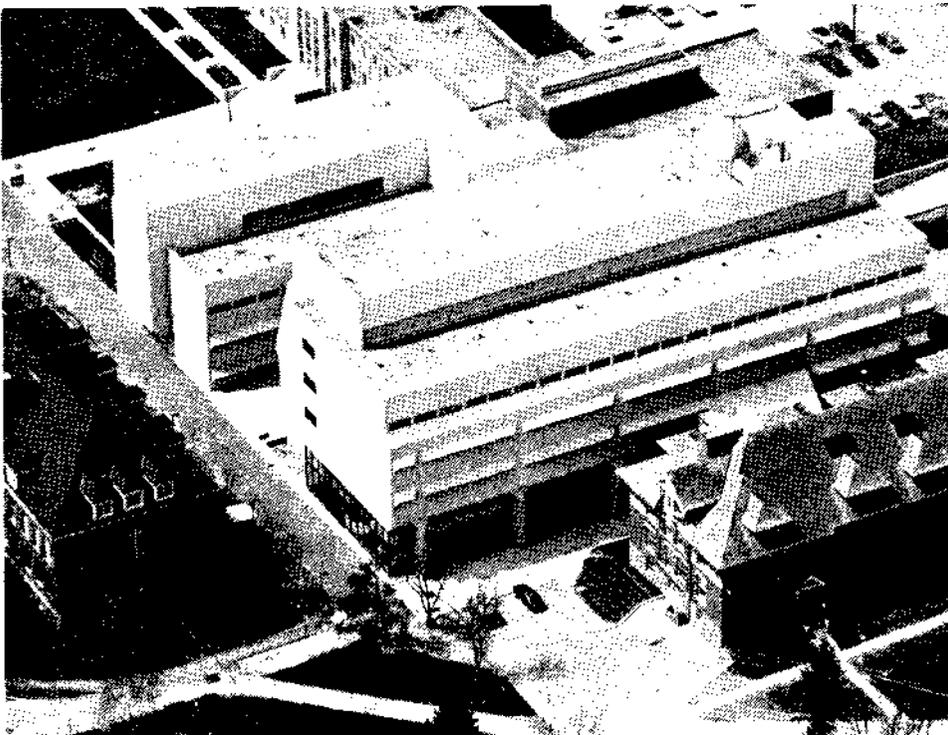




E.E. Stewart to cut ribbon

Physical Sciences to open



This helium-neon laser is about 10 feet long. Dr. J. L. Hunt adjusts a mirror at one end.

Since construction began the Physical Sciences building has turned heads, caused countless comments and won eulogies from students, researchers, teachers and architecture buffs.

Construction on this \$8 million building began in the late summer of 1967 and was completed for the 1969 fall semester. The Physical Sciences building contract was the first one signed by Dr. W. C. Winegard after he was installed as President.

The official opening will take place Saturday, June 20 at 2:45, everyone is invited. Tours will be held Sunday, June 21 at 2 — 4:30 p.m.

Mr. E. E. Stewart, Deputy Minister of University Affairs, will cut the ribbon in the Physical Sciences Quadrangle. Tours of the building, conducted by graduate students and faculty, will start immediately after the ceremony, and tea will be served.

These tours are a rare opportunity to see what actually goes on inside this massive edifice. Most research laboratories will be open and many will provide a demonstration for tour-goers. The proverbial white-coated researchers will stand at the ready with explanations.

In the Chemistry area, visitors will see computer-controlled X-ray Crystallography Equipment, an NMR (Nuclear Magnetic Resonance) Spectrometer, an IR (Infrared) Spectrometer, and an Amino Acid Analyzer. They will tour a suite of cold rooms, a centrifuge room and a radioactive preparation room and see a variety of chemistry teaching laboratories.

Visitors in the physics area will explore facilities throughout the building, from roof-top observatory to a 15-foot deep water-filled well in the basement. Assuming visibility of the

Continued on Page 2.

Physical Sciences Building

OPEN HOUSE

Sunday, June 21, 2 — 4:30 p.m.

- tours of building
- demonstrations of teaching and research equipment (*laser, spectrometers, telescope, X-ray cameras and many more*)

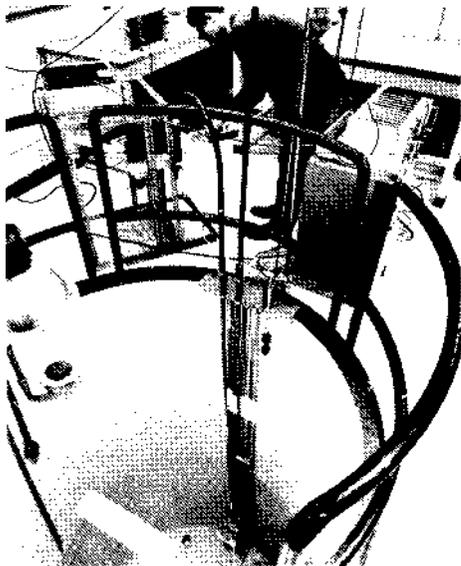
Everyone welcome.

Physical Sciences — from Page 1.

sun, the telescope will be focused on sun spots, which most visitors have never seen. The well in the basement contains a radioactive neutron source, for which the water provides shielding.

Elsewhere, visitors will see another X-ray set-up, a Helium-Neon Laser, a PDP-9 on-line Computer, an NMR/EPR (Nuclear Magnetic Resonance/Electron Paramagnetic Resonance) Spectrometer, Nuclear Activation Analysis equipment and X-ray Fluorescence Equipment. Many of these complex electronic instruments will be operating during the open house.

Besides the exotic research instrumentation, the names of which would scare anyone but a



A neutron source rests at the bottom of a 15 foot deep water filled well. In the background Dr. J. F. Pleva makes adjustments.

scientist, the physical science departments are eager to show off their undergraduate laboratories and carefully planned teaching facilities. These range from first-year physics and chemistry laboratories to individual graduate research laboratories.

If you have admired (or criticized) the Physical Sciences building from afar, Saturday is your chance to see what transpires within its stark concrete walls. You may even collect some catchy phrases, such as "Electron Paramagnetic Resonance" to casually interject in a cocktail party conversation.

LIBRARY NEWS

Mrs. N. Goring is now the Subject Librarian on the Fifth Floor — Natural and Applied Sciences — Ext. 2426. Mr. Bernard Katz has been transferred from the Catalogue Department, replacing Mrs. Goring as Subject Librarian of the Fourth Floor — Physical Sciences, Ext. 3629.

Circulation Information Desk Telephone — Ext. 3618.

REPORT FROM SENATE

June 9th Meeting

The 1969-70 Senate cleared the deck for its successor last week with a full meeting combining unfinished and new business. The only matter left outstanding was the question of the controversial biological sciences report which was discussed at a special meeting Tuesday and which will be reported in next week's Bulletin

Senate agreed to the institution of a fine schedule for overdue books at the library and stuck to the present policy which forbids journals to be circulated.

During the discussion on the fine system, the question was raised about thefts and chief librarian Florence Partridge said that while it was difficult to estimate accurately the number of volumes illegally removed, she did not think it excessive in relation to other universities. Miss Partridge did suggest that if the library staff was advised in advance of a class assignment requiring considerable usage of certain volumes, relevant sections could be photocopied for students' use.

Dr. E. B. Anthony, Zoology, who had requested circulation of journals, felt library copying of scientific materials in some cases was imperfect and maintained that non-circulation policies encouraged mutilation of journals.

The proposed revision of a Senate bylaw to cover future disruptions from the visitors' gallery prompted some discussion. Much of it centred around the rewording of the bylaw which would permit the Senate chairman to "cause the gallery to be cleared" if requests for order and voluntary withdrawal went unheeded.

Several faculty felt if this meant bringing in police, it should not be approved. Most seemed to feel that Senate business was of paramount importance. An amendment that would have substituted university disciplinary procedure instead of clearing the gallery was lost and the original bylaw revision carried.

The only change made by Senate placed the authority of clearing the gallery on a discretionary rather than a mandatory basis.

In presenting the report on the past year's activities of the Centre for Resources Development, chairman, Prof. Norman Pearson underscored several points which President Winegard suggested be discussed by the Centre's incoming faculty policies committee.

It was pointed out several times that the availability of research funds has curtailed many plans but Prof. Pearson felt the Centre hopefully would be asked to do some interesting and challenging work on environmental studies in the near future.

Senate agreed with the Look-In '70 evaluation committee's conclusions that no further campus-wide Look-Ins be held for "a year or

two" and that it be suggested that additional programs undertake their own analyses such as has been done by the veterinary medicine and landscape architecture programs.

Prof. Thomas Settle, Philosophy, committee chairman, said a widely-held conclusion was that the lack of a major issue affecting the entire campus seriously affected the needed spontaneity of the 1970 program.

A recommendation from the board of undergraduate studies that as of May, 1972, graduates of the family and consumer studies program be granted Bachelor of Applied Science (B.A.Sc.) degrees was adopted. Dean Janet Wardlaw explained the new degree seemed most appropriate of all considered and Dr. Winegard, himself a holder of the degree from University of Toronto, assured her other programs would probably be delighted to follow Macdonald Institute.

An interim report from the committee on teacher education was received by Senate. Authority was given the committee to continue to study the implications and possibilities of teacher education on the campus.

Prof. R. J. Hathorn, Languages, committee chairman, said Guelph's three semester system and other features would put it in a favorable position to host one of the 10 provincial teachers' colleges if it were decided the University should try to attract one.

Dr. Winegard, commenting on the report from the committee on teaching and learning presented by Prof. Harvey Caldwell, extension education, said the committee would be receiving "fair financial support" from the administration this year because of the importance of its work.

Senate adopted a recommendation from the committee on academic priorities that approval be given to establishing an MA program in contemporary China studies at Guelph, probably to start in September, 1971.

Approval is contingent on the availability of outside financing; co-operation from either the University of Toronto or York University; that the program be administered by an inter-departmental committee reporting to the dean of graduate studies and that if the program is not self-supporting within three years, that Senate should decide whether it should be phased out.

Presenting the report of the advisory committee which studied the feasibility of the program, Prof. John Melby, political studies chairman, emphasized the need and importance for such a program and how Guelph could become well known in this field.

Dr. Melby admitted that the cost of setting up library material was perhaps the "stickiest" problem but he didn't think it unsurmountable. It was noted that future faculty hired specifically to augment the Chinese studies program

would have to hold departmental appointments and would clearly understand that these depended on the availability of outside financing.

Dr. Melby noted that there is a growing interest in mainland China especially among high school students who need a place where they can follow up this interest.

MOTIONS

Library Committee

A fine system for overdue books and the current policy of non-circulation of journals were both approved.

The following schedule of fines will apply to overdue books:

- (a) books on regular loan — 10 cents per day (b) books on limited loan (due at 12:00 noon on the day indicated by the date stamp) — 25 cents for each of the first two hours or part of an hour based on the hours the Library is open (c) Books on recall — \$1.00 per day computed from the due date shown on the Recall note.
- This schedule of fines will apply equally to all users of the library.
- Notices of recall placed in the University mail will be considered fair notice.
- Fines on overdue books are deemed to be University Accounts Receivable, and will be credited to the University Endowment Fund.

The Library committee has reconsidered the present policy of non-circulation of journals. It was pointed out that complaints have been received from students because journals are sometimes locked in carrels or studies and thus not available immediately to other users. Such journals can be retrieved on request. However, the problem would be increased several fold if circulation of journals from the main library were permitted. The committee agreed that under the present conditions of a restricted budget, there is no alternative to the present policy of non-circulation of journals.

Committee on Awards

The Senate accepted the Elgin County Council Scholarship of \$100; the four Canadian Restaurant Association Foundation Scholarships of \$125 each and the 33 Alma Mater Scholar Entrance Awards in the amount of \$150 each.

Graduation Ceremonials

Honorary Degree Nominations: Senate carried the motion that for the purpose of voting on candidates for an honorary degree, Senate go into closed session.

Committee on Bylaws

Because of the creation of two offices, one of the Dean of Graduate Studies and the other Dean of Research, the words "and Research" will be omitted in all references to the Dean of Graduate Studies and Research and the Faculty of Graduate Studies and Research.

Senate approved a motion that the Dean of Research be an *ex officio* member of Senate.

Senate accepted the rewording of Bylaw 47 to read: "If interference or disruption of Senate proceedings occurs by occupants of the Visitors' Gallery, the Chairman shall first call for order, and failing restoration, shall then order the visitor(s)

causing the disruption to withdraw from the gallery; failing compliance with this order, the Chairman may cause the gallery to be cleared.

Senate accepted the wording of Bylaw 94 part 5 (and 95 part 5) to read "preparing and countersigning of all official documents as pertaining to undergraduate (graduate) students described in Senate bylaws."

Senate accepted a change in Bylaw 88 so it would read " Committee on Student Petitions shall consist of the Chancellor, the President, the Registrar, and 15 members of Senate not fewer than 8 of whom shall be elected members. Members of the Committee shall not simultaneously hold membership on any Board of Review Deans, Directors of Schools, and Chairmen of Program Committees shall be added to the Committee as non-voting consultants."

The Report of the **Faculty Policy Committee** of the Centre for Resources Development was received for information.

The Report from the **Evaluation Committee** for Look-In '70 was passed. A motion that no campus wide Look-In's be held for a year or two passed.

A motion "That it be recommended that B.A., B.Sc., and B.Sc.(Agr.) etc., program committees undertake studies of the kind recently undertaken by the B.L.A. and D.V.M. programs" passed.

The report of the **Striking Committee**, as amended and corrected passed. A motion that Senate nominations to the Board should be for a non-renewable term of 3 years was defeated.

A motion from the **Board of Undergraduate Studies** that the degree Bachelor of Applied Science (B.A.Sc.) be granted to graduates in Family and Consumer Studies passed. The approval for the following course changes was given: French Canada 1534-1763; Chemistry and 73-303 Clinical Laboratory.

A motion that the **Committee on Teacher Education** study the implications and possibilities of teacher education on the campus passed.

Approval was given to the recommendation of the **Committee on Academic Priorities** for an M.A. program in Contemporary China Studies.

The report from the **Committee on University Structure, Organization and Government** passed. The report recommended a study be made to determine whether practices of academic granting of tenure ought to be retained at Guelph.

STRIKING COMMITTEE

Senate approved the following list of memberships of Senate Committees, Boards, and appointments. A chairman is to be elected (unless otherwise stated) and names with asterisks indicate student members.

Executive Committee of Senate — Ex officio: Chancellor; President; Vice-President, Academic; Dean H. S. Armstrong; Dean D. G. Howell; Dean M. H. M. MacKinnon; Dean J. W. Skinner; Dean N. R. Richards; Dean E. B. MacNaughton; Dean Janet Wardlaw; Chair-

man, Board of Undergraduate Studies; Chairman, Board of Studies for Undergraduate Diplomas. *Appointed:* H. M. Dale; W. Hughes; D. McKinney, F. J. Milne; * M. Phelps; Mrs. D. M. Robinson; R. B. Walker. *Chairman:* President.

Striking Committee — Ex officio: Chancellor; President. *Appointed:* C.A.V. Barker; E. P. Benson; R. A. Fletcher; F. N. Hainsworth; J. F. Melby; M. H. Miller; Marjorie B. Phillips; K. Ronald; H. Tiessen; R. G. Thomson; * S. Whiston.

Board of Undergraduate Studies — Ex officio: Chancellor; President; V.P. Academic; Dean, Macdonald Institute; Dean, Ontario Agricultural College; Dean, Ontario Veterinary College; Dean, College of Arts; Dean, College of Social Science; Dean, College of Physical Science; Registrar, Mr. H. W. Pettipiere. *Chairmen of Program Committees:* B.Sc.(Eng)-H. D. Ayers; B.L.A.-V. Chanasyk; B.Sc.(P.E.)L. A. Cooper, D.V.M.-T. J. Hulland; B.A-M. H. M. MacKinnon; B.Sc.-E. B. MacNaughton; B.Sc.(Agr.)-N. R. Richards; B.H.Sc.-J. M. Wardlaw; Hotel & Food Adm-G. D. Bedell. *Appointed:* G. Bartocci; N. Bowen; H. M. Dale; * B. MacLean; H. J. Malik; * M. Phelps; A. R. Robinson; D. Simpson; * G. Slater; J. R. Stevens; J. Tanner, R. G. Thomson; H. Wiseman; * S. Whiston.

Board of Graduate Studies — Ex officio: Chancellor; President; Vice-President, Academic; Dean of Graduate Studies; *Chairmen of Area Committees:* A. K. Colter; F. A. Dahms; D. Odegard; C. M. Switzer. *Appointed:* * P. Desai; D. E. Elrick; C. Gyles; L. H. A. Karstad; R. W. 011erhead; K. Ronald; W. W. Straka; F. Vaughan; R. Vosberg; *Chairman:* Dean of Graduate Studies or designate.

Board of Studies for Undergraduate Diplomas — Ex officio: Chancellor; President; Vice-President, Academic; Dean, Ontario Agricultural College; Heads, Diploma Courses; Registrar. *Appointed:* L. V. Busch; D. R. Arnott; J. D. Bandeen; R. A. Curtis; * T. Heeney; P. R. MacPherson; J. Pos; D. A. Riggs; B. J. E. Teskey.

Library Committee — Ex officio: Chancellor; President; Vice-President, Academic; Dean H. S. Armstrong; Dean D. G. Howell; Dean M. H. M. MacKinnon; Dean E. B. MacNaughton; Dean N. R. Richards; Dean J. W. Skinner; Dean Janet M. Wardlaw; Chief Librarian, Miss F. G. Partridge. *Appointed:* * J. Barr; J. B. Black; * D. Easton; F. N. Hainsworth; C. Hindson; J. Madden; B. J. McSherry; W. W. Straka; R. L. Thomas; C. M. Warner; A. D. Wilshere; *Consultants:* N. M. Sullivan; M. Beckman, F. G. Stewart. *Chairman:* President.

Committee on Membership — Ex officio: Chancellor; President. *Appointed:* W. K. Bilanski; K. E. Chamberlain; E. E. Gamble; P. D. Little; G. Leibbrandt; J. Elizabeth Miles; W. D. Morrison; A. M. Ross; * D. Simpson; L. V. Busch.

Committee on Graduation Ceremonials — Ex officio: Chancellor; President; Dean H. S. Armstrong; Dean D. G. Howell; Dean M. H. M. MacKinnon; Dean E. B. MacNaughton; Dean N. R. Richards; Dean J. W. Skinner; Dean Janet M. Wardlaw. *Appointed:* E. P. Benson; D. H. Bullock; P. W. Couse; G. W. Friars; R. B. Truscott; H. W. Pettipiere; * G. Slater; Mrs. Helen G. West; P. A. Wright; H. Wiseman.

Committee on Student Petitions — Ex officio: Chancellor; President; Registrar. *Appointed:* G. W. Anderson; G. H. Bowman; W. J. Carroll; E. Cameron; * P. Desai; A. M. Evans; R. P. Forshaw; D. G. Ingram; W. Hughes; R. M. Liptrap; * B. McLean; M. Sanderson; A. Salvadori; F. H. Theakston; K. C. Tan.

Committee on Awards — Ex officio: Chancellor; President; Chairman of Board of Governors; Dean H.

Continued on page 4.

Dr. Tossell appointed Dean of Research

Dr. William E. Tossell has been appointed Dean of Research of the University of Guelph. In making the announcement University President W. C. Winegard stated that Dr. Tossell is one of the best known crop scientists in North America. Dr. Tossell, who was first appointed to OAC's Crop Science Department in 1948, became its Chairman in 1961, a position he held until 1966 when he was appointed to his current position — Associate Dean of the Ontario Agricultural College.

The position of Dean of Research was recently created by the Senate because of the great importance research is assuming in the rapid growth of the University.

A native of Binbrook, near Hamilton, Dr. Tossell graduated from the Ontario Agricultural College with the B.S.A. degree in 1947 and a year later was awarded an M.S.A. degree in genetics and plant breeding. He later pursued post-graduate studies at the University of Wisconsin where he earned a Ph.D., again in genetics and plant breeding.

Dr. Tossell is a member of a number of professional and scholarly societies including the American Society for the Advancement of Science, the Crop Science Society of America, the Sigma Xi, an international society for the promotion of scientific research. He has also served on a great number of University committees as well as being a member of the University of Guelph Senate.

Dr. Tossell has travelled extensively in North



Dr. W. E. Tossell

America and abroad. In 1956 he made a study tour of Europe with particular reference to research organization and crop science programs. In 1968 he attended the International Genetics Congress in Japan and the following year he visited Mexico and Culp and presented an invited paper at the Congress of Animal and Plant Science in Cuba. Early this year he attended the International Genetics Congress in Australia.

During his term as Associate Dean of OAC, Dr. Tossell has been the main liaison between the University and the Agricultural Research Institute of Ontario. In this period there has been a spectacular growth in the volume of research in agriculture and resources management. Dr. Tossell developed a system of research

planning to assure that research funds were channelled into high priority areas. He was also involved with the reorganization of the budgeting system for agricultural research in the Province.

Dr. Tossell played a leading role in the reorganization of agricultural research stations of Ontario, and especially the organization of the 1000 - acre Elora Research Station which is being operated by the University.

Referring to his role as Dean of Research at the University of Guelph Dr. Tossell had this to say in a recent interview: "It is my firm belief that research is an integral part of a mature university. Clearly the first function of a university is teaching, but a university with little research is not likely to provide the stimulating, relevant kind of teaching that our modern university students clearly want.

"Faculty searching for new knowledge on the edge of the unknown are likely to project their enthusiasm for knowledge and truth to their students; faculty grappling with the big problems facing society today are likely to project relevance through their courses.

"Of course, careful selection of research areas can result not only in meeting these goals but also in a significant flow of research from the University to improve the social, economic and technical base for Canadian society.

"As I see it," Dr. Tossell concludes, "my role will be to assist the faculty in achieving these things."

SENATE — continued from page 3.

S. Armstrong; Dean D. G. Howell; Dean M. H. M. MacKinnon; Dean E. B. MacNaughton; Dean N. R. Richards; Dean J. W. Skinner; Dean Janet M. Wardlaw; Mr. H. W. Pettipiere. *Appointed:* C. A. V. Barker; A. Falconer; C. L. McGilvray; T. Settle; J. B. Stone; * S. Whiston.

Committee on Bylaws — Ex officio: Chancellor; President; *Appointed:* H. Caldwell; C. Gyles; H. Kirby; D. Masters; E. J. Miles; J. D. Milliken; W. Minshall; D. Ormrod; T. K. Warley; F. Vaughan.

Centre for International Programs — Appointed: H. R. Binns; H. D. Branion; S. H. Collins; L. H. Karstad; J. F. Melby; D. R. Murray; R. W. Shuel; S. J. Slinger; M. A. Soltys; K. C. Tan; Janet M. Wardlaw; A. S. Wood; * Tissa Amaraturunga; J. C. M. Shute; G. G. Van Beers; 2 students.

Centre for Resources Development

H. D. Branion; P. Chrisholm; D. W. Hoffman; P. D. Keddle; H. R. McCrimmon; N. Pearson; N. R. Richards; R. S. Rodd; D. W. Smith; J. B. Sprague; Marion Steele; J. R. Wright; 3 students.

Centre for Educational Disabilities

D. A. Barnum; Norma V. Bowen; H. D. Branion; J. E. Callagan; C. T. M. Hadwen; G. F. Hartman; J. Charter's; Kathryn Kopf; B. M. McCraw; H. S. Sandhu; D. H. Stott; H. W. Kirby; ; 3 students.

Continuing Education — Ex officio: Vice-President, Academic; Dean D. G. Howell; Dean M. H. M. MacKinnon; Dean E. B. MacNaughton; Dean N. R. Richards; Dean J. W. Skinner; Dean Janet M.

Wardlaw. *Appointed:* H. W. Caldwell; H. C. Carlson; T. J. Hulland; M. A. King; C. E. McNinch; J. C. Shute; G. L. Warlow; W. Woodside; W. S. Young; Louise Colley.

Study Committee on Teacher Education --

Appointed: Nancy I. Bailey; Lorna Brown; B. M. McCraw; A. I. Dagg; A. Margaret Evans; C. T. M. Hadwen; R. J. Hathorn; P. M. Harney; M. H. M. MacKinnon; J. Neill; J. C. M. Shute; D. H. Stott.

Committee on Teaching and Learning

Vice President, Academic; Appointed: A. E. Austin; Kathleen H. Brown; R. S. Downey; S. G. Fushtey; T. J. Gillespie; J. Harrison; Kathryn Kopf; P. Leppmann; J. P. Lautenslager; D. H. Pletsch; J. C. Shute; 6 students.

Committee on Academic Priorities

Ex officio: President; Vice-President, Academic; Vice-President, Administration; Dean, Faculty of Graduate Studies; President, Students' Union Council; President, Graduate Students' Association. *Appointed:* D. G. Ingram; J. F. Melby; D. R. Murray; * M. Phelps; Marjorie Phillips; J. R. Stevens; C. M. Switzer; R. L. Thomas; *Chairman:* Vice-President, Academic.

Advisory Management Committee of the University Bookstore — A. E. Austin, P. W. Pennock, L. P. Sydor.

University Structure, Organization and Government — C. L. Gyles; T. D. Newton; T. Settle.

Faculty Leave Committee — F. Dahms; M. V. Smith;

Research Advisory Board — Dean of Research; R. C. Anderson; B. R. Christie; A. K. Colter; J. J.

Madden; R. Nicholson; J. M. Raeside; R. Richards.

Faculty Reclassification & Tenure Committee — J. E. Callagan; M. Miller.

Search and Review Committee for President and Vice-President, Academic -- J. Archibald; J. R. Stevens.

President's Budget Advisory Committee

C. A. V. Barker; M. A. MacGregor; J. D. Summers.

Faculty Representation on Board of Governors — G. K. McLeod; P. A. Wright. (T. D. Newton, A. M. Ross, J. R. Stevens — one to be elected).

C.P.U.O. Academic Colleague — E. P. Benson, D. R. Murray (alternate).

Faculty Policy Committee — J. B. Robinson; R. G. Thomson.

Parking Notice

It will be necessary to reserve part of Textiles Lot P.23 on June 22nd in connection with the opening of the Elora Research Station and again on June 24th for Nurses Graduation — General Hospital, Guelph. Alternate parking may be found in Lots P. 6, P.10, and P.42.

U.S. scientists visit campus

A team of five U.S. scientists paid a brief visit to the campus last week as part of a tour to assess and study research programs related to natural resources.

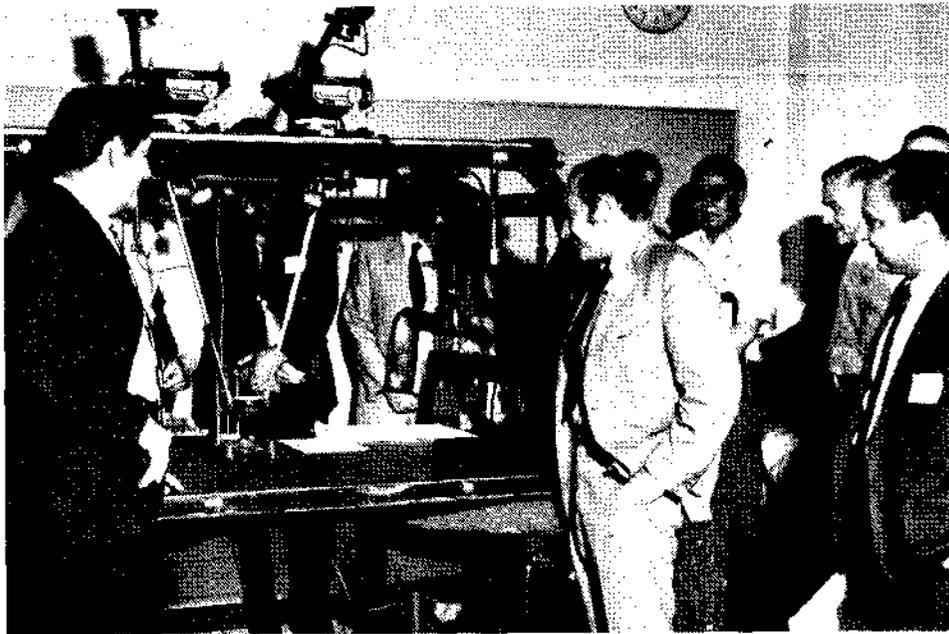
The group constitutes a sub-committee of a larger group working under the auspices of the U.S. National Academy of Sciences. The over-all group is known as the Committee of Space Programs for the Earth Observation Satellite, an advisory committee to the U.S. Department of Interior. They are studying the potential utilization of information to be gained from a series of earth observation satellites, now being planned.

The ultimate objective is the integration of current field studies and other research with the photo information which would be available from such satellites. In some cases the photos might add a new dimension to studies being carried out on the earth's surface. In others, the surface studies might be used as bench marks for photo interpretation.

At Guelph, the visitors heard brief resumes of research projects from four scientists representing the Departments of Geography and Soil Science and the School of Engineering. They then visited a laboratory and a number of field sites.

Studies conducted at the University are also integrated with related studies conducted by the Ontario Water Resources Commission, and the Canadian Inland Waters Research Centre, Burlington. The visitors also visited these while in Ontario.

Scientists making presentations to the U.S. Committee included: Professor Trevor Dickinson, Engineering, on watershed hydrology; Professor Al Falconer, Geography, on experimental geomorphology; Professor Stan Collins, Engineering, on airphoto interpretation; and Professor Dick Protz, Soils, on the Ontario Soil Survey.



In the top photo, Professor Trevor Dickinson, fourth from right, discusses run-off plots established by the Department of Soil Science to estimate water absorption and run-off under cropping conditions. Other locations deal with larger areas, including an entire stream basin. In the lower photo, Professor Stan Collins, left, explains new equipment for airphoto interpretation which permits "true" readings, and accurate stereoscopic height measurements.

Computing Science News

The University of Guelph Advisory Committee on Computers has established a policy that requires all purchases of computing facilities to be monitored and reviewed by the Institute of Computing Science.

This ruling is interpreted to include programmable desk calculators, which are being used in various departments. The Committee expressed concern that in some cases the expensive electronic calculators are being used essentially as simple desk calculators, a function that can be performed adequately by much less expensive equipment. At the same time, the recent availability of time-sharing computer terminals has put large scale computing facilities within easy reach of every department, and into direct competition with the programmable calculators.

Dr. Anil Sheth, Supervisor of Scientific Systems, will be responsible for reviewing all requests to purchase or rent programmable machines. Departments are urged by the Committee to seek approval of planned acquisitions before an order is sent through Purchasing.

Another new development in computing services on campus is the establishment of a Research and Teaching Support Group within the Institute of Computing Science. Under Mr. Olaf Kraulis, this group will concentrate on applied research. They will seek solutions to computer operational problems, solutions which can lend to improved performance of the present installation. This new group will also co-ordinate activities related to teaching uses of computers, in response to the consid-

erable interest developing in this area and the potential impact computers can have in teaching.

Telephone Changes

Department of Agricultural Economics

Prof. J. H. Clarke
from Ext. 2773 to 2765

Dr. M. L. Beckford
from Ext. 2771 to 2773

Please make these changes in your telephone book.

TEACHING & LEARNING

Are you interested in demonstrating that you do teach? A method of answering this question was provided by Dr. Lawrence Alexander, Acting Director of the Learning Service, Michigan State University. Dr. Alexander lead in a seminar and workshop recently at the University of Guelph.

Recent advances in the psychology of learning and teaching have been used to formulate a set of principles and techniques for the design of an effective learning environment. How best to use the technique of writing instructional objectives was the theme of Dr. Alexander's presentation.

An instructional objective is not a course description but rather a statement that describes an intended outcome of instruction. It may be devised for various unit sizes, such as a curriculum, a course, or a lecture. The usefulness of the instructional objective method depends on accepting the following postulates:

1. Learning can be demonstrated (ie. observed or measured) only by a change in behaviour.
2. Individual students learn.
3. The criterion of effective teaching is

student learning.

The instructional objective is composed of three parts. One part states what the student will be doing to demonstrate that which he has learned. The expected performance is stated in operational behaviour terms (eg. solve, identify, discriminate, assemble) that can be observed or measured. Another part of the instructional objective specified the conditions under which the student will demonstrate that he has learned. Specifically, the aids or references the student will or will not be able to use along with any restrictions that will be placed on him are specified. The third part of the instructional objective specifies a standard by which the student's terminal behaviour will be judged. The lower limit for each terminal behaviour is stated as well as the lower limit for the whole test. The instructional objective is entirely learner oriented; it does not describe what the teacher will do or by what procedural means instruction will be given.

Instructional objectives can be used in the design of courses and curricula thereby helping to choose the kind and amount of inform-

ation needed, the conditions of testing and the sequence of topics. The terminal behaviour and conditions of test serve as guides for test design, permitting the instructor to answer the question: "Which students have attained which objectives?" Such tests also provide answers to the questions "Which objectives did students not attain?", "How should instructional procedures be changed?" Instructional objectives help guide students because the students understand what is expected of them. They can evaluate their own learning progress and allocate their time more efficiently. The instructional objectives also help in communicating unambiguously with colleagues so that curriculum sequences can be agreed upon and team activities coordinated.

The workshop conducted by Dr. Alexander gave the participants the opportunity to develop and write an instructional objective in their choice of subject matter. The practice problems were discussed by the group. Dr. Alexander gave considerable time to counseling individuals on their own problems arising from the system approach to instruction.



"Canadian Trees"

Professor F. H. Montgomery, former Head of the Department of Botany, has had his most recent book entitled "Canadian Trees" accepted for publication by Ryerson Press. Professor Montgomery's earlier books include "Weeds of the Northern United States and Canada," "Native Wild Plants of Eastern Canada and Adjacent Northern States," and "Plants From Sea to Sea." The book "Canadian Trees" will be available for the first time this fall.

GRANTS

James H. White, Psychology, has been awarded a grant of \$10,088 by the Canada Council for research into the effects of injustice on delinquency.

Organize Guelph 'Pollution Probe'

Pollution Probe is now at the University of Guelph. An organizational meeting was held June 10, and an executive elected with Professor N. F. Stewart, Mathematics and Statistics, as chairman. The group was represented at a national "Earth Day" meeting in London on June 14, in an attempt to coordinate the efforts towards Canada's first "Earth Day" which is to be held on October 14.

The group's next regular meeting will be held on June 24 at 8:00 p.m. in Room 105 of the Physical Sciences building. The delegates of the London "Earth Day" conference will

report at this time and local arrangements and efforts will be discussed. Other possible projects will also be discussed and it is hoped that project coordinators will be established on a voluntary basis. A membership plea will also be made.

This meeting will be followed by one on July 8 at 8:00 p.m. in the CIAG Hall, and it is hoped that this downtown location will attract interested citizens and local professional and business people.

Probe welcomes new members from all walks of life.

Director Named

Dr. A. W. H. Needler, Deputy Minister of Fisheries and Forestry for Canada, will become the first Resident Director of the Huntsman Marine Laboratory in St. Andrews, New Brunswick, upon his retirement from the public service in March, 1971.

The appointment was recently announced by Fisheries and Forestry Minister Jack Davis and Professor Keith Ronald, Chairman of the Department of Zoology of the University of Guelph and President and Chairman of the Board of Directors of the Huntsman Marine Laboratory.

Dr. Needler will act as chairman of a marine pollution symposium when the new laboratory is officially opened on August 24, 1970.

The Huntsman Marine Laboratory is a non-profit corporation whose aim is to promote

teaching and research in the marine sciences. The corporation has a current membership of 19 Eastern Canadian Universities, including the University of Guelph, and the Fisheries Research Board of Canada.

PHYSICAL EDUCATION NOTICE

ALL — Lockers and Tote Baskets must be cleared out prior to **August 8, 1970**.

The Department of Athletics will not assume responsibility for any articles left in lockers or tote baskets after August 8th, 1970 on which date all remaining articles will be removed.

FACULTY ACTIVITIES

Graduate student enrolment up

Total graduate student enrolment in Ontario universities in 1969-70 increased by some 2,500 students, according to a report received by the Committee of University Presidents of Ontario at its April meeting.

The survey, which took into account the number of Canadian, landed immigrant, and foreign graduate students, was undertaken by the Ontario Council on Graduate Studies. A similar study was carried out last year making it possible to observe changes.

The 1969-70 graduate enrolment was 17,500 students, up 17 per cent from last year. Full time students numbered 12,100 or 69 per cent of the total. The number of full time students increased by 14 per cent, while part time students increased by 25 per cent.

The number of foreign students declined in 1969-70 from 20 per cent to 14 per cent, while landed immigrants increased from 13 per cent to 17 per cent and Canadians increased from 66 per cent to 69 per cent. Together, Canadians and landed immigrants accounted for 86 per cent of the total graduate student population in 1969-70. The largest groups of foreign students in both years were Asian at 6 per cent and American with 3 per cent of the total. 0

The yearly survey of non-Canadian graduate students was started in 1968-69 academic year in response to fears by public officials and others that there was an inordinate number of non-Canadian students enrolled at the graduate level in Ontario universities. It has been suggested by some people that the government should impose a quota on the number of non-Canadians but the survey served to alleviate much of the alarm that had arisen due to lack of information. The fact that the 1969-70 survey showed an increase in the numbers of Canadians and landed immigrants and a decline in the number of foreign students, should serve to further reduce the concern.

The Committee of Presidents believes that the overall proportion of foreign students in Ontario universities is not unreasonable, considering that Ontario universities, as part of an international community, have obligations to provide an opportunity for higher education to foreign students, particularly those from less developed countries.

Acceptance of foreign students in Ontario universities could also be viewed as redress of the situation prior to the recent expansion of Canadian graduate schools, when large numbers of Canadian students were obliged to go abroad for graduate education. Even at present there are some 5,000 Canadian students pursuing graduate work in the United States.

Dr. James H. White, Psychology, gave a paper entitled: An experimental study of injustice and children's moral behaviour at the annual meeting of the Canadian Psychological Society in Winnipeg.

Dr. L. N. Gibbins, Microbiology, attended the 20th annual meeting of the Canadian Society of Microbiologists, held recently in Halifax, N.S. He read a paper entitled The induction of non-pigmented variants of *Erwinia herbicola* Y46 by incubation of supra-optimal temperatures by A. K. Chatterjee and L. N. Gibbins.

The Department of Pathology, OVC, held a social hour to honour its first graduates from the new diploma course. **Dr. M. Anwar** and **Dr. J. H. Lumsden** were presented by Department Chairman, **Dr. R. G. Thomson**, with Alumni ties to mark the occasion.

Dr. R. G. Thomson, Pathology, travelled to Nigeria in June to act as an External Examiner for the University of Ibadan.

Dr. T. Lloyd Jones, Pathology, attended the Second World Food Congress at The Hague in June.

Dr. A. A. van Dreumel, Pathology, attended the 7th Biennial Convention of the British Caribbean Veterinary Association in Georgetown, Guyana early in June. As part of a three-man team which included **Dr. C. K. Roe**, of Clinical Studies and Prof. **R. P. Forshaw** of Animal Science, **Dr. van Dreumel** also presented talks in Trinidad, Tobago, and Jamaica.

Department of Food Science Faculty, Visiting Scientists and Graduate Students presented or were co-authors of five papers at the 13th National Conference of the Canadian Institute of Food Technology in Windsor. The papers given were: **Dr. A. N. Myhr**, and **Mr. M. A. Amer**, Modification of butter to improve low heat temperature spreadability. **Mr. M. A. Amer** and **Dr. A. N. Myhr**, Photochemical oxidation of a combined sunflower seed-oil - milkfat butter product. Miss M. Tanaka, Mr. M. Fukushima and **Dr. J. M. deMan**, Measurement of food texture with the cone-penetrometer. **Mr. A. Y. Shehata** and **Dr. J. M. deMan**, A Simple and rapid method for the preparation of methyl esters of fats in milligram amounts. **Prof. C. L. Duitschaever**, The antibody response of cows to *Streptococcus lactis* bacteriophage. In addition, **Dr. D. H. Bullock** acted as chairman for a Dairy Technology Session and **Prof. D. A. Biggs** presented a Report of the Study Committee on payment of milk on composition.

Dr. D. W. Stanley, Food Science, presented a paper, "Measurement of certain physical properties of muscle using the Instron Tester," at the 30th Annual Meeting Institute of Food Technologists in San Francisco.

Dr. Ann C. Noble, Food Science, co-authored and presented a paper entitled Identification of volatile products of autoxidation of highly unsaturated fatty acids at the joint Chemical Institute of Canada and American Chemical Society Meeting in Toronto.

Co-op Day Care Centre

An ad hoc committee of interested faculty and students is presently engaged in studying the feasibility of establishing a University Day Care Centre on campus.

The group has tried to read the needs of the University community and is therefore looking into the possibilities of providing care for the under-three-years age group. There are centres available now for older children, but not for those under three years of age.

The proposal being considered would include the following points: Centre hours would be from 7:30 a.m. to 5:30 p.m. with half-day options available. Trained baby-care staff including a nurse would be employed for guidance and programing. Meals and snacks would be provided in accordance with provincial law. Diaper and linen service would be provided. The facility would be on or near campus. The facility would be available for the children of women, who are students, or members of faculty and staff.

It is anticipated that the University will attempt to provide space and maintenance for

such a Centre, if the demand is large enough and if the facilities can be provided without seriously disrupting academic, student life or residence programs. Offers of assistance in furnishing a Centre have been received and it is hoped that it could be largely furnished through donations.

A preliminary examination of operating costs has already been made by the ad hoc committee and the figure of \$22 per week per child seems adequate to maintain a Centre's operation. However this is only so, providing some women students can co-operate by giving their free time to working under the guidance of the trained staff. Those unable to participate in the co-operative effort would be asked to pay an additional fee.

The committee is now soliciting responses from members of the University community concerning the Day Care Centre. If you are interested in having a Centre or have any questions concerning the preliminary considerations, please phone: 821-7291 or 822-1923 or write: Day Care, Provost's Office, University of Guelph.

NEXT WEEK AT GUELPH

THURSDAY, JUNE 18

Art TREASURES FROM GUELPH HOMES, continues on display in the main corridor of the Arts building.

SATURDAY, JUNE 20

Ceremony PHYSICAL SCIENCES BUILDING OFFICIAL OPENING, ceremony begins at 2:45 p.m. Main quadrangle. All welcome (see front page story in this issue of News Bulletin).

Reunion OAC-MAC ALUMNI DAY (see program in this issue of News Bulletin).

Music GUELPH CONCERT BAND, will present a program outside War Memorial Hall. 12:15 - 1:15 p.m.

SUNDAY, JUNE 21

Worship R.C. FOLK MASSES. 10:30 a.m., Music Room 107, Arts. 7:30 p.m. 9th floor lounge, Arts.

Tours GUIDED TOURS OF THE CAMPUS. Every Sunday, during the summer, guided tours leave from the foyer of McLaughlin Library at 2 p.m. and 3 p.m.

Open House PHYSICAL SCIENCES BUILDING. 2 to 4:30 p.m. All welcome.

MONDAY, JUNE 22

Ceremony OFFICIAL OPENING OF ELORA RESEARCH STATION. 2:30 p.m.

TUESDAY, JUNE 23

Lecture Series EDUCATION FREEDOM AND AUTHORITY SERIES, entitled Society, The School and You. Panel discussion lead by J. Douglas Stewart, Assistant to the Vice-President, Academic. Panelists: Anthony Barton, Ontario Institute of Studies in Education; Ben T. Hannan, Executive Director, Guelph YM-YWCA. Dr. K. Kopf, Chairman, Department of Family Studies; Dr. J. J. Mangalam, Department of Sociology, 8 p.m. Room 113, Physical Sciences.

Fashions FACULTY CLUB FASHION SHOW. No extra charge. Reserve tables now.

THURSDAY, JUNE 25

Meeting COLLEGE HEIGHTS CREDIT UNION SPECIAL MEMBERSHIP MEETING. 7:30 p.m. C.I.A.G. building. Regarding bylaw changes and personal chequing.

Meeting POLLUTION PROBE, 8 p.m., Room 105, Physical Sciences.

Guided Tours of Campus

Every Sunday, beginning June 21st, 1970 for the summer. Tours leave from the foyer of McLaughlin Library at 2:00 p.m. and 3:00 p.m.

Research Station opens Monday

The Elora Research Station will be officially opened June 22 by the Hon. William A. Stewart, Ontario Minister of Agriculture and Food, and the Hon. J. R. Simonett, Minister of Public Works.

With a total area of 970 acres, the Station provides many kinds of facilities, all of which are essential for modern agricultural research.

The Station is owned by the Ontario Department of Agriculture and Food, and operated under contract by the University.

PHYSICAL SCIENCES BUILDING

Open House

Sunday, June 21
2:00 p.m. - 4:30 p.m.

PERSONALS

For Sale or Trade — double bed for one set of bunk beds — 822-7875 after 6 p.m.

For Sale — 3 bedroom tri-level home. 15 min. from campus. Available Sept. I. 822-8922 after 5 p.m.

For Sale — modern wooden dining room table with 4 chairs, double mattress and base. 821-2423 after 5 p.m.

• For Rent — single room \$10 wk. Bernie, Ext. 2531.

• For Sale — 4 bedroom home near University. 2 fireplaces, study and recreation room. 824-6073.

For Sale -- modern brick cottage, off Edinburgh Rd. — 822-4556.

• For Rent — 3 bedroom house, Ext. 2486 or 821-7878 after 5 p.m.

• For Sale — 4 bedroom house, country club area, Ext. 2114 or 843-3090.

• For Rent — Cottage on Bruce Peninsula during July. Ext. 3863 or 822-4797.

• For Sale — Drapes, lined, abstract, 12 panels. Cost — \$250. Selling at \$40. Ext. 2401 or 822-1282.

Lost — Gold wrist watch in Horticulture gardens on June 9. Ext. 3370 or 822-3430.

• Wanted — ride from Guelph to Waterloo Lutheran and return daily. June 29 — Aug. 29. Will share expense. 822-5903.

For Sale — '67 Meteor Convertible. 822-6092 after 5 p.m.

For Rent — Camping Wagon, 1969 VW. Available from end of June till fall, Ext. 3649.

• Wanted for two — ride West in August break. Share expenses. 821-5778.

• For Rent — Large 1 bedroom apt. \$117, includes everything, even drapes. 824-6622, after 6 p.m.

Alumni Weekend 1970 Program

Friday, June 19, 1970

3:00 p.m. - 10:00 p.m.

Registration, Lambton Hall Lobby

5:30 p.m. - 7:00 p.m.

Cash Supper, Creelman Hall

Saturday, June 20, 1970

8:30 a.m. - 5:00 p.m.

Registration, Lambton Hall Lobby

7:30 a.m. - 9:30 a.m.

Cash Breakfast, Creelman Hall

9:30 a.m. - 10:00 a.m.

Coffee Reception for Mac Alumnae, Macdonald Institute Foyer

10:00 a.m. - 12:00 noon

Annual Meetings, Macdonald Institute

Alumnae Association, Room 106, Macdonald

Institute. OAC Alumni Association, War

Memorial Hall.

12:15 p.m. - 1:15 p.m.

Picnic Lunch and Band Concert, campus green near War Memorial Hall. Hosted by Deans of OAC and Macdonald Institute.

Music by the Guelph Concert Band. Conductor -- Mr. John Randall.

1:15 p.m. - 2:15 p.m.

Auction Sale of assorted pieces of crested or monogrammed dinnerware once used in campus dining halls. Inside War Memorial Hall. Proceeds to the Development Fund to help finance Alumni Office facilities in proposed University Centre. Auctioneer — Gord Bennett — OAC '43.

1:15 p.m. - 2:15 p.m.

Children's Races — campus green in front of Johnston Hall.

2:45 p.m. - 3:30 p.m.

Official Opening — Physical Sciences building. All alumni and guests welcome.

3:30 p.m. - 5:00 p.m.

Reception with tea, concurrent with tours of the building.

5:30 p.m. - 7:00 p.m.

Cash supper, Creelman Hall (for those not attending class banquets).

Sunday, June 21, 1970

7:30 a.m. - 9:30 a.m.

Cash Breakfast, Creelman Hall.

11:00 a.m.

Lay Worship Service — War Memorial Hall with Dr. N. R. Richards, '38; Dr. W. H. Minshall '33; Mr. M. G. Greer, '41; Mr. J. W. Pennington, '38.

The News Bulletin is published by the Department of Information and edited by Mrs. Betty Keeling. Copy for the next edition must reach the editor, Room 361, McLaughlin Library, not later than noon Friday, June 19, 1970.