

NEWS BULLETIN



D. Nightingale,
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UNIVERSITY OF GUELPH

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September 30, 1971

New approach to chemistry research

Integrated laboratory favored by faculty and students

A plea for more relevant university courses resounds on campuses throughout North America. Students, disillusioned with traditional university training, call for learning experiences which more closely correspond to the real world, not the sheltered academic world. They object to the isolated packages of information which fit so neatly into traditionally defined pigeonholes; but which bear little, if any, relation to the world as it is today.

This division of information into artificial categories applies in all disciplines. To counter the tendency in chemistry, the department at Guelph has instituted a new approach to the chemistry laboratory. "Integrated Laboratory," a third year course for Honors Chemistry and Honors Science students, attempts to do away with the artificial distinctions between the five traditional subdivisions of chemistry (Analytical, Biological, Inorganic, Organic and Physical). It combines the laboratory sessions which used to accompany many of the third year chemistry courses. Drawing its material from all the divisions of chemistry, the lab course requires students to utilize diverse techniques and skills to solve research problems. A single experiment, for example, could involve a physical chemistry approach to a biological system.

While this type of chemistry laboratory is more realistic than isolated laboratories with each lecture course, it is relatively rare having been tried in only a few American Universities. The program at Guelph involves a series of 20 experiments, drawn up and rigorously tested by the faculty. The material comes from various sources, and emphasizes theory as well as techniques. The faculty hopes to offer 25 experiments so that students could select 16-18 to complete during the course of the year.

Dr. A. K. Colter, Chairman of Chemistry, explains that the primary motivation in establishing integrated laboratory was that most of the best research in chemistry is problem-oriented. This means that a research chemist uses all available techniques to solve his problem, which usually involves crossing the traditional discipline divisions. By "integrating" these divisions into one laboratory course, students also have the opportunity to do problem-oriented (instead of discipline-

oriented) research. Classical chemistry laboratories, by reinforcing the traditional discipline divisions, are poor models for modern research. The integrated laboratory comes closer to duplicating modern research situations.

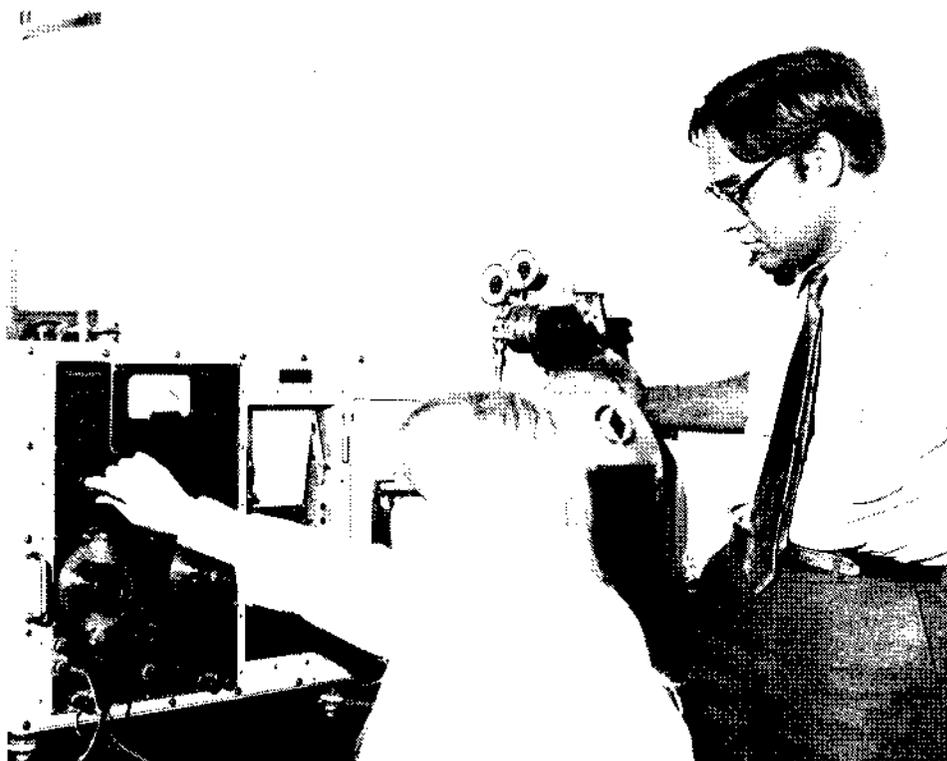
Science laboratory courses have always had an artificial time limitation in that experiments fit tidily into the three-hour laboratory period. Second consideration in designing the integrated laboratory was to do away with this time limitation. Integrated laboratory is flexible enough so that the students could spend the entire day, if necessary, in pursuit of data. This also more closely duplicates modern research situations.

The third factor in the plan was to expose future professional chemists to the sophisticated, expensive instrumentation on which chemistry research increasingly depends. Providing such instruments to large groups of students is economically impossible, but the relatively

small number of students in integrated laboratory have access to the same sort of instrumentation they would use in industrial or graduate research.

Because this course utilizes a broader approach to laboratory problems, it also requires a broader approach to instruction. Four faculty members, representing the subdivisions of chemistry, are available for consultation. One of the four, Dr. R. G. Goel, said that they stress the *interdependence* of the divisions of chemistry, so that students will overcome the psychological barrier of trying to fit problems and people into artificial categories where they don't really fit.

After one semester of operation, integrated laboratory has met with very favorable reception from faculty and students. Both sides complained a little about the time required, but felt that, for the time spent, they accomplished a great deal.



Pat Titus and Dr. R. G. Goel check voltage measurements on a polarograph for an integrated laboratory project in the new third year chemistry program.

REPORT FROM SENATE

September 21, 1971 Meeting

The first meeting of Senate for the new academic year drew a full attendance of members and even the visitors gallery was virtually full. The Senators were faced with a long and important agenda that required an over-time sitting to complete.

A major item of business was a brief to the Committee on University Affairs, containing comments on the current situation and the view of long term plans, 1971-1976. As was the case last year, the brief's format was designed to provide answers for a series of questions posed by the Committee of University Affairs. The brief met the approval of Senate, although several members suggested some specific revisions be made to the brief before it was presented to the Board of Governors, for final approval. The principal recommendations of the brief are:

- action be taken immediately to establish an interim capital entitlement for the Ontario Veterinary College;
 - cost allowance of \$55 per net assignable square foot be revised upward;
- the basic allowance of 96 net assignable square feet per student be re-examined;
- the present allowance for students in the third semester be revised upward;
- the original application of the capital formula which excluded dining facilities in university residences be reverted to; (alternatively, if dining facilities are to be included in the University's inventory, the formula be modified so as to establish an allowance related to the total number of students, the size of the community and the percentage of the student body in residence).
- funds be made available to assist the University in undertaking a thorough appraisal of its three-semester system.
- the present funding and contracting system for student housing be re-examined with a view to making decisions possible and shortening the lead times involved.
 - the Committee on University Affairs consider the desirability of greatly increasing the scope of Continuing Education programs throughout Ontario and of requesting that funds be made available to universities for support of such programs.

Reporting on the recently held 70th meeting of the Council of Ontario Universities, was Professor Eugene Benson, the President's Academic Colleague on the Council. Included on the COU agenda was a brief to the Committee on University Affairs on a comparative analysis of University calendar systems. Professor Benson pointed out that while he could not project what changes will be made, "it is obvious that the traditional calendar system is to be modified." Some other items on the COU

REPORT FROM BOARD OF GOVERNORS

September 24, 1971 Meeting

APPOINTMENTS

COLLEGE OF FAMILY AND CONSUMER STUDIES

Maureen R. Benedict, Consumer Studies, lecturer.

COLLEGE OF PHYSICAL SCIENCES

Patrick H. Henry, Chemistry, Associate Professor.

Thomas W. Holden, Physics, Visiting Professor.

ONTARIO AGRICULTURAL COLLEGE

Dugal R. MacGregor, Food Science, Associate Professor.

ALUMNI AFFAIRS AND DEVELOPMENT

Rosemary Clark, Senior Alumni Officer.

ADMINISTRATION

A. G. Holmes, Registrar.

David C. Murrury, Assistant to Director of Personnel.

LIBRARY

Marion D. Cameron, Assistant Librarian for Personnel.

Lawrence T. Porter, Assistant Librarian for Systems.

John B. Black, Assistant Librarian for Services.

BOARD MEMBERSHIP COMMITTEE REPORT

Appointments

E. I. Birnbaum, Vice-Chairman, effective immediately.

W. W. Lasby, Vice-Chairman, effective January 1, 1972.

R. S. Hurlbut, effective immediately.

Dr. A. Secord, effective immediately.

Resignations

J. M. Lindley, effective immediately.

Dr. J. W. Smith, effective immediately.

MOTIONS PASSED

Brief to the Committee on University Affairs
The Board approved the Brief to the Committee on University Affairs as submitted.

Faculty Policies on Appointment, Tenure and Promotions

The Board approved the Faculty Policies on Appointment, Tenure and Promotions, subject to editorial revision.

Laboratory Animal Building

The Board approved the final design and instructed the Director of Physical Resources to proceed with the working drawings of the Laboratory Animal building.

University Centre/Administration Building

The Board approved the retention of E. G. M. Cape Co., Ltd, as construction manager of the University Centre/Administration building.

University Policy Committee on Human Rights
E. I. Birnbaum was named Board of Governors representative on the striking committee that will nominate members for the University Policy Committee on Human Rights.

University Research Advisory Board

K. G. Murray was appointed a Board of Governors member of the University Research Advisory Board.

agenda, which Professor Benson stated would be completely reported in the monthly Bulletin, were: embargoed programs in graduate studies; new criteria governing integration of part-time study programs; and the Ontario Universities Application Centre of which H. Pettipiere has been made Director.

MOTIONS

Executive Committee

The Membership Committee was directed to discuss the topic of absenteeism of members from Senate meetings, and bring forward a recommendation to Senate.

A change in title of Chairman of the Centre (i.e. for International Programs) to Director of the Centre was approved.

Striking Committee

- The following faculty were appointed to the various committees and boards as listed:
- Professor R. W. 011erhead, Physics, and Professor R. B. Truscott, Veterinary Microbiology and Immunology, to Striking Committee; Professor W. H. Hughes, Philosophy, to Board of Undergraduate

Studies; Professor W. H. Brown, Chemistry, as Chairman of Physical Science Area Committee of the Board of Graduate Studies; Professor E. Herold, Family Studies, to Library Committee; Dr. W. H. Minshall, Alumni, and Mr. A. G. Holmes, Registrar's Office, to Committee on Graduation and Ceremonials; Professor G. Ferguson, Chemistry, to the Student Petitions Committee and the Research Advisory Board; Professor D. C. Jordan, Microbiology, and Mr. D. Truman, Student, to the Awards Committee.

Board of Undergraduate Studies

The list of graduands submitted for convocations October 1 was accepted. Professor L. W. Abbott, History; Dr. N. Bowen, Psychology; Dr. J. Stevens, Physics; Professor D. H. Bullock, Food Science; and Professor R. G. Thomson, Pathology, were approved as nominees to a Sub-Committee on Course Duplication, effective immediately. Professor G. Bedell, was named chairman of a standing committee concerning Procedures and Guidelines of the Board (approved at the April 20, 1971, meeting.) Members of the

Continued on page 6

You and your United Fund

Please support these non-profit agencies

Big Brother Association of Guelph & Wellington County ... volunteer "Big Brothers" work with fatherless boys (Little Brothers) individually and personally to provide guidance and companionship.

Boy Scouts of Canada, Wellington District ... teaches citizenship and forms character through training in obedience, self-reliance, and loyalty. Largely self-supporting, *United Fund* dollars augment the program.

Canadian Arthritis and Rheumatism Society (C.A.R.S.) ... provides home service to arthritis patients, including physiotherapy, physical and social assessment, teaching, information, and counselling.

Canadian Mental Health Association ... provides care, treatment and rehabilitation of the mentally ill and disabled; strives to prevent mental illness; promotes research into causes, treatment and prevention.

Canadian National Institute for the Blind (C.N.I.B.) ... provides: training and employment of the adult blind; pre-school counselling services; a centre for residential, occupational and recreational services. In Guelph, a home-teacher trains recently blinded persons in new ways of living.

Canadian Red Cross Society ... dedicated to reducing suffering, improving health and preventing disease; local unit provides a free blood transfusion service, loans sickroom equipment; handles Meals on Wheels, emergency aid and enquiries for missing persons in Canada and abroad.

Crisis and Information Centre a volunteer organization dealing with the immediate problems of young people, from on-the-spot crisis situations (talk-downs, etc.) to information and referral service, working with the health unit, police, social services, and both Guelph hospitals.

Deaf and Hard of Hearing Association ... to assist the hearing-handicapped with employment, education, and rehabilitation.

Family Counselling Service ... works with families and individuals towards the rehabilitation of home life, rebuilding inner family relationships, easing domestic tensions, and helping solve emotional problems.

John Howard Society ... rehabilitates prisoners discharged from penitentiaries and reformatories with counselling and practical help.

Multiple Sclerosis Society of Canada ... assists multiple sclerosis patients, provides information to the community, and undertakes research to combat this disease.

Navy League of Canada ... provides training in discipline and good citizenship for boys. *United Fund* dollars support lads who otherwise could not be included in the program.

Rehabilitation Foundation (formerly March of Dimes) ... rehabilitates the physically handicapped through training, job placement, and necessary prosthetic appliances to assist the patient in becoming self-supporting.

To All Members of the University

Each year at this time we are asked to contribute to the Guelph United Appeal which raises funds for twenty organizations serving our community.

The total objective for Guelph is \$223,931.00 and the University Division has been requested to provide \$30,000.00. We feel confident that the University Division will exceed its objective again.

Please consider giving to the Guelph United Appeal. Contributions may be made in cash or by payroll deduction and the Canvasser will be calling after October 1st.


W. C. Winegard,
President

St. John Ambulance Corps ... teaches first aid, home nursing, and child care; provides uniformed attendants at events and parades. All services are free.

St. Joseph's Home ... a resident home for elderly people offering service to all citizens, regardless of religion or race.

Victorian Order of Nurses ... provides visiting nursing service under the direction of the family physician. Diabetics, cancer patients, and others, acutely or chronically ill, are given special care as required. Also offered: a homemaker service to care for children in the home during the temporary absence of the mother.

YMCA-YWCA ... concerned with the development of people in our society, through extensive social, recreational, and education program. *United Fund* supports day-care nursery, Outreach program in Guelph neighborhoods, and memberships and camping for Guelph youth.

Canadian Council on Social Development ... a national voluntary organization which analyzes social breakdown and social need, co-ordinates welfare facilities, both public and private, offers a forum enabling concerned Canadians to speak out on social welfare generally in discussions with government, and informs the public.

Ontario Welfare Council ... a voluntary association of individuals, agencies, organizations, municipalities, community funds and councils interested in social welfare and working toward needed social legislation affecting Ontario people.

Guelph and District Community Service Council ... a citizens' organization working to review the work of local social agencies to assist citizens and community groups in planning, developing, and co-ordinating efficient and effective health, welfare, and recreation services.

Kyba heads United Fund campus drive

Dr. P. Kyba, Political Studies, has been named chairman of The University Division of the 1971 Guelph United Fund. The Fund is a committee of the Guelph and District Community Service Council.

The slogan of the United Appeal this year, "If you don't do it, it won't get done," is the same as last year. In the present economic situation the slogan is even more appropriate, states Dr. Kyba. "It will be difficult, but if all contribute their "Fair Share" (one hour's pay per month) our objective can be reached," he continues, "and each of the 20 participating agencies will be able to continue their indispensable work in the community."

A native of Saskatchewan, Dr. Kyba completed his doctoral studies at the London School of Economics and Political Science, and joined the Department of Political Studies at the University of Guelph in 1967.

United Fund Campus Division Co-Chairmen

Prof. G. Manning	- College of Arts
Prof. J. Mottin	- College of Social Science
Prof. P. Pennock	- O.V.C.
Mr. P. Lafferty	- College of Physical Science
Prof. B. Miles	College of Family and Consumer Studies
Prof. R. J. Douglas	College of Biological Science
Prof. L. Thomas	O.A.C.
Mr. I. White	Administration
Mr. F. J. Stewart	Library

El Greco's priceless oil painting on exhibitio:

The art exhibition program at the University of Guelph operates 11 months of the year, closing for the month of August only. Mrs. Judith Nasby, Curator of Art at the University, who has a talent for arranging exhibits, has made the University a well known centre for its art shows.

Openings of exhibitions, most of which are displayed in the gallery area on the main floor of McLaughlin Library and occasionally in the main corridor of the Arts building, attract great numbers of Guelph and area citizens.

Mrs. Nasby has been able to acquire a masterpiece by El Greco (1541-1614) entitled *St. Francis of Assisi and Brother Leo Meditating on Death* to be shown on the main floor of McLaughlin Library September 30 — October 6. The National Gallery of Canada is loaning this priceless oil painting to the University. The showing here will be the first in a special tour which will take

the painting to London, Ontario, Queen's University at one million dollars.

Yorkshire Printmakers will be shown simultaneously exhibit includes silk screen lithographs and mixed Yorkshire. The exhibition is on the main floor of

The work of a contemporary master, British sculpture. This exhibit of rare pre-1950 bronze sculptures and his work will be shown on the main floor of McLaughlin Library. The exhibit will begin in

For British Arts Festival (November 7 — 13) the *of British Theatrical Prints, Playbills and Posters (17th century)* by Dr. and Mrs. D. H. Stott.

An exhibit of prints from the Nova Scotia College of Art and Design. Organized by the National Gallery of Canada, this Canadian and International artists produced at the Lithography Workshop.

December will feature a selection of work in a variety of media. Highlighting the winter and spring themes. Symbols and large sculpture by Robert Downing.

About half of the University's exhibits are organized by the National Gallery of Canada. Examples of this are the works of John Elderfield, Drawings and Paintings; and the works of the 1970-71, are examples of this.

The other half comes from institutions like the National Gallery of Ontario and the Art Gallery of Ontario. The National Gallery of Canada Limited (Contemporary touring exhibit program. Others may be organized by the University of Guelph, such as "Life Style of Our Forefathers" or "The Life of St. Francis" shown at the University in May 1971.

Smaller exhibits include student work; period sculpture; National themes (objects from Ghana); and literary exhibits. A support program of public lectures and seminars is also organized. Admission to exhibits and lectures is free.

Some of the exhibits organized by the University of Guelph are: "Beethoven, the Composer" a tour which took it to eight Canadian centres in 1971.

In addition to directing the art exhibition program, Mrs. Nasby is also administering the University Collection. A portion of the collection is housed on the main floor of McLaughlin Library.



'Saint Francis' is this year's

Through the majestic and mystical strokes of El Greco's famous composition *Saint Francis and Brother Leo Meditating on Death*, Saint Francis of Assisi will become the National Gallery's new ambassador on a tour.

In keeping with its policy of arranging a yearly travelling exhibition of a painting by one of the masters, the National Gallery is presenting to the public this famous work by El Greco, which depicts two figures in brilliantly illuminated high relief against a dark and majestic background. Portrayed is Saint Francis meditating with his favourite disciple on Mount Laverna in the Tuscan Apennines.

Born in Candia on the island of Crete, El Greco (1541-1614), whose real name was Domenikos Theotokopoulos, is said to have first learned painting in a monastic studio which produced icons. At the age of about twenty he left for Venice to become a pupil of Titian, Crete at this time being a Venetian colony. There he came under the influence of Tintoretto and later, in Rome, studied the art of the great

Lon

ersity and York University. The work is valued

aneously with the El Greco masterpiece. This
xed media graphics by contemporary artists from
of McLaughlin Library.

sculptor Henry Moore will be shown in November.
s and prints by Moore and large photographs of
McLaughlin Library beginning October 20. Organ-
in its Canadian tour at the University of Guelph.
l there will be smaller exhibits in the Arts building
rs (18th and 19th century) on loan from faculty
try English Delph Pottery from the collection of

college of Art and Design starts November 20.
this exhibit includes 57 lithographs by well-known
the Nova Scotia College of Art and Design's

i a variety of media by University of Guelph Fine
ing will be German Expressionist Graphics, Signs and
ling.

organized on campus. The War Etchings of Otto
; and George Wallace, Sculpture, all shown in

the National Gallery of Canada (Dü"rer and His
io (3D into the 70's); or organizations like Roth-
rary French Tapestries), and are part of their
sized by another institution for the University of
s" organized by the Royal Ontario Museum and

ad shows (Dr. and Mrs. Stott's Art Nouveau
a); explanations of techniques (woodcut, engraving);
ublic lectures, gallery tours and films is also
is free.

ersity of Guelph are circulated to other Canadian
en, the Man and His Time" which is now concluding
in 1970-71.

rogram the Curator of Art is also responsible for
llion of the Collection can be seen on the 5th

year's art ambassador

masters of the Renaissance.

In 1577 he came to Toledo where he painted
several altar-pieces for churches or religious
institutions and produced a series of portraits,
including that of the Grand Inquisitor.

During his lifetime, El Greco was considered
the greatest painter of Saint Francis, and there
is no doubt that at the time of his death he was
the most famous artist in Spain. However,
before long the naturalism of the new schools
of Seville, Madrid and Valencia replaced El
Greco's style of fantasy and mysticism, and he
came to be regarded as a misguided eccentric.

Spain later reappraised El Greco's work and
an exhibition of it was held in the Prado in
1902. In 1910, the publication of Maurice
Barres *Greco ou le Sacret de Toledo* introduced
the artist to a much larger public. When man-
nerism came back into vogue in the 20th
century, undoubtedly as the result of expres-
sionist and surrealist art, El Greco suddenly
achieved universal recognition and his works
were avidly collected throughout the world.



The Departments of Family Studies and Psychology presented a seminar on nutritional factors affecting biological and behavior development. Dr. Louis V. Ekpechi, Faculty of Medicine, University of Nigeria, gave the seminar attended by faculty and students of both departments. Dr. Ekpechi's area of interest is the study of food goitrogens and effects on the development of behavior in animals and man. Shown from left; Dr. Kathryn Kopf, Chairman of Family Studies, Dr. Ekpechi, and Dr. H. M. B. Hurwitz, Chairman of Psychology.



Mr. R. H. G. Suggett, Vice-Principal of East Riding of Yorkshire College of Agriculture visited the campus. Winner of a 1971 Winston Churchill Trust Fellowship, Mr. Suggett has been travelling in North America studying dairy production. Shown from left, Dr. Bruce Stone, Mr. Suggett, and Dr. W. D. Morrison, Chairman of the Department of Animal and Poultry Science.

FACULTY ACTIVITIES

Dr. Jean H. Sabry, Family Studies, attended the special dinner of the sixth annual meeting of Editorial Advisory Board of Nutrition Today. The meeting was held at Le Chateau Montebello in Montebello, Quebec, in honor of the forthcoming special issue of Nutrition Today devoted to Nutrition in Canada.

Mr. R. P. Gilmor, Provost, was the featured speaker at the Building Research Institute fall conferences and workshops in Washington, D.C., speaking on changes in the institution's planning and participating in panel discussion.

Dr. J. R. Geraci, Zoology, has returned from a field trip to Herschel Island, Yukon Territories, where he participated in a Fisheries Research Board of Canada program on Western Canadian Arctic ecology. Dr. Geraci was specifically involved with ringed seal physiology, as a prelude to a forthcoming research program involving ringed seal metabolic studies which will be carried out on the University of Guelph campus in 1972-73.

Dr. R. J. Hilton, Horticultural Science, is attending the II international Symposium on Ecology and Physiology of Root Growth, in Potsdam, East Germany. An invitational paper on the research utilization of the Guelph Rhizotron, by R. J. Hilton and H. Khatamian, will be presented.

Dr. N. O. Adedipe, Horticultural Science, recently attended meetings of the American Society of Agronomy in New York City. Following the meetings he visited plant science laboratories and field research facilities at Cornell University and the University of Maryland, College Park.

Dr. E. C. Alyea and Dr. N. J. Bunce, Chemistry, attended the recent national meeting of the American Chemical Society in Washington, D.C. A paper entitled A mercury salt pathway for the degradation of carboxylic acids to alkyl halides by halogen and mercuric oxide, was presented by Dr. Bunce.

Dr. R. Goel, Chemistry, presented a paper entitled, Preparation and Structure of Triphenylbismuth (V) Compounds containing Bi-O-Bi Bond at the V International Conference on Organometallic Chemistry which was held at Lomonosov Moscow State University, Moscow. The paper was co-authored by Professor G. Ferguson, Dr. Frank March and Dr. H. S. Prasad. During this trip he also visited the following laboratories: (i) Laboratories of the Chemistry Department of Lomonosov Moscow State University, (ii) Laboratories of the Institute of Organoelement Compounds of the Academy of Sciences of the USSR, and (iii) the Laboratories of the Institute of Inorganic Chemistry of Technische Hochschule, Vienna.

Professor Elizabeth Waterston, English, addressed the opening luncheon of the Western Fair, Women's Division, in London, Ontario. She spoke to an audience consisting of executive members of all women's organizations in London and area on the topic Six worlds of women.

Professor J. R. Wright, Landscape Architecture, was recently elected chairman of the Recreation Institute of Canada, comprised of professionals engaged in the planning, development and management of recreation resources, programs and services. Members are representative of both the public and private sector.

Dr. M. J. Nye, Chemistry, attended the Third International Congress of Heterocyclic Chemistry at Tohoku University, Sendai, Japan. He chaired an afternoon session on azines and presented a paper entitled Synthesis of the anhydro-4-hydroxy-1,2-diazolium hydroxide system — a new class of mesoionic compounds by M. J. Nye, M. J. O'Hare and W. P. Tang. The work reported was a truly international effort, since the co-authors have degrees from Canada, U.S.A., Britain, Japan and Hong Kong. Dr. Nye was also a guest of the Pharmaceutical Institute, Tohoku University, during his visit.

Mr. R. A. Martin, Chemistry, attended the annual meeting of the American Society of Biological Chemists in San Francisco. He presented a paper, with Dr. A. Mellors as co-author, on the radio-assay of heme catabolism.

Dr. S. G. Fushtey, Environmental Biology, attended the annual meeting of the Society of Nematologists held in Ottawa, and also participated in a work-planning meeting of Canadian nematologists.

Dr. W. H. A. Wilde, Environmental Biology, at the request of the State of Massachusetts Pesticide Advisory Board, outlined the benefits of minimum chemical usage in the environment at Waltham, Massachusetts. It was reported at this meeting that the University of Guelph's film Integrated Control of Orchard Insects in Ontario has been shown over 100 times in the state and has become a part of the visual instructions in various agricultural and environmental studies programs in Massachusetts.

Members of the Chemistry Department participated in the 14th annual meeting of the Canadian Federation of Biological Societies in Toronto. Dr. R. M. Epand presented a paper on conformational transitions of glucagon. Mr. A. Kyaw and Dr. A. Mellors with Dr. W. J. Vail (Microbiology) reported the effect of corticosteroids on lysosomal enzymes. Dr. J. B. M. Rattray, Mr. M. Szewczuk and Dr. R. K. Boyd described ligand-induced conformational changes of bovine serum albumin. Mr. A. Schibeci and Dr. J. B. M. Rattray reported on the composition of yeast protoplast membranes. Dr. H. J. Suderman and Mrs. C. Yeh-Ku gave a paper on some physicochemical properties of harp seal hemoglobin. Dr. A. Mellors was the chairman of a half day session on enzymes.

Report from Senate (Continued)

committee include: Professor D. H. Bullock, Professor J. H. Malik, Professor H. Wiseman, Mr. A. G. Holmes and Mr. S. Whiston. Professor D. H. Bullock's appointment to the Senate Committee for the Centre for Resources Development was announced. Approval was given for change of schedules of studies of the B.A.Sc. program; a new course, Marine Resource Utilization was approved in the Department of Zoology; and two courses, Applied Kinesiology I and Applied Kinesiology II were approved in the School of Physical Education.

Proposed Calendar changes, that would include reference (and official recording on a student's Transcript) of some skill courses carrying no Academic Credits in the B.Sc. (P.E.) program were referred to the Board

- for further study.
- The roster of the membership of program committees was accepted.

Board of Graduate Studies

The list of graduands submitted for the October 1, 1971, convocations was accepted.

Board of Studies for Undergraduate Diplomas

Proposed regulations for the Board were referred back for reconsideration. Approval was given a graduand in the Associate Diploma in Agriculture.

Committee on Membership

Senate membership for the Chairman of the Centre for Resources Development was turned down for the present. (The Committee noted that Senate was a large enough body at present and adding another position would bring additional requests.)

Committee on Bylaws

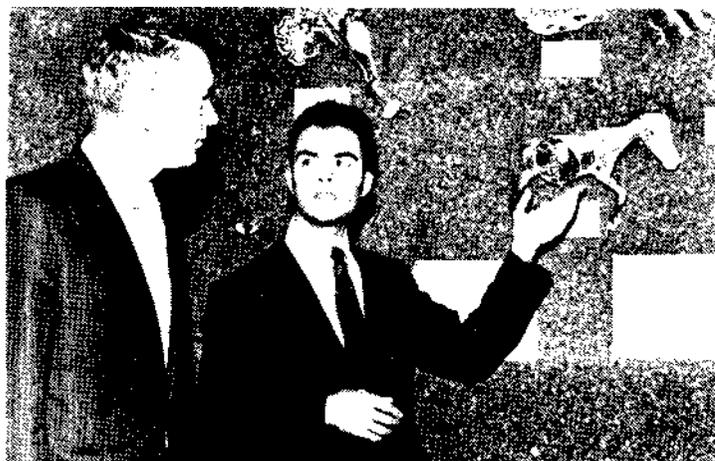
A general revision of the Bylaws of Senate was tabled for debate at the October meeting of Senate.

Committee on Student Petitions

The report that eight petitions were granted and 12 were denied was accepted by Senate.

Research Advisory Board

Senate received the report on Co-operative Programs between Human and Veterinary Medicine at the OVC.



Graduate student develops preservation procedure

A procedure for preservation of anatomical and pathological organs has been developed by Dr. Francisco Soto, Department of Animal and Poultry Science.

A DVM graduate of the University of Mexico, Dr. Soto is taking graduate work in the Animal Science section of the Department.

The procedure involves the freeze-drying of the samples and using a special technique for their preservation. In this way the different samples can be preserved and colored in their original shape for a number of years.

The organs, which are being used for teaching purposes, are on display in the main foyer of the Animal Science — Nutrition building.

Dr. W. D. Morrison, Chairman, Animal and Poultry Science, inspects display with Dr. F. Soto

AG Week

Friday, October 1

.Semi-Formal — "Cactus Flower"

Physical Education Building

8:30 — 1:00

\$3.00/couple

.Dance to Continuous Music — 2 Great Bands

-The New Society

-Tom Jay and the Quick

Saturday, October 2

.Football Game — 2:00 p.m.

University of Guelph vs. University of Waterloo

.Chicken Bar-B-Q — 4:30 p.m.

Served after the game in Creelman Plaza

Only \$1.75/person

Everyone Welcome

.Saloon — 8 p.m. to 1 a.m.

In the Arena

Free with an Aggie Hat — Everyone else 50¢

Entertainment by the Countrymen

Don't Miss It!

Drama in workshop

The Division of Drama begins its fall semester production schedule on Wednesday and Thursday, October 6-7, at 8 p.m. in the Drama Workshop with two one-act plays.

Lewy Olfson's *Infanta*, a dramatization of a short story by Oscar Wilde, is directed by Jerrold Karch, and N. B. Simpson's *The Hole*, a modern British play, by David Corfield. Both are in Drama's first Honors class.

Admission will be 50¢ to all one-act evenings. Tickets for unreserved seats will be available from the campus box office during regular hours and from 7 to 8 p.m. on evenings of performance.

AUDIO VISUAL SERVICES

Ext. 3106

Reaches all services within the department.

Ghanaian art on display

The Ghana Project of the University of Guelph will present an exhibit of Ghanaian arts and crafts in the south wing of the Arts building from Friday, September 24 to Tuesday, November 2.

The cooperative agreement between the University of Guelph and the University of Ghana is one of several such schemes now being supported by the Canadian International Development Agency in various corners of the world. Since the beginning of the Project in September of 1970, the University of

Guelph has assisted in the development of the University of Ghana by supplying faculty members, equipment, books, and opportunities for post-graduate study for Ghanaian graduate students and veterinarians. Five departments in three colleges of the University of Guelph are involved in the program.

CONTINUING EDUCATION COURSE
ENGLISH AS A SECOND LANGUAGE

Starts October 6

For further information contact: Mr. Don Amichand, Ext. 3505.

PUBLICATIONS

Eggens, J. L. and R. J. Hilton, 1971. Growth responses of ground cover plants to varied pH in nutrient cultures. *J. Amer. Soc. Hort. Sci.* 96 (4): 474-476. (Horticultural Science)

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Kelly, K., 1971. The transfer of British ideas on improved farming to Ontario during the first half of the nineteenth century. *Ontario history.* 63: 103-111. (Geography)

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Matthews, V. J., 1971. Report on the 10th European Track and Field Championships. *Ontario Track Monthly.* September. (Languages)

Piggins, David, 1971. *Worm Runners Digest.* Vol. 12, no. 2. Cartoons & Verse. (Psychology)

Arthur, D., 1971. *Principles of animal nutrition.* Second Edition. Published by University of Guelph Office of Continuing Education. (Nutrition)

Wilson, W. A. & W. H. A. Wilde, 1971. Some effects of Gamma radiation on earwigs in Ontario, Canada. *Canadian Entomologist*, 103, pp. 1201-1206. (Environmental Biology)

Wilde, W. H. A., J. Carpenter, J. Liberty, J. Tunncliffe, 1971. *Psylla pyrucola* vector relationships with *Erwinia amylovora* (fire-blight). *Canadian Entomologist* 103, pp. 1175-1178. (Environmental Biology)

Bartels-Schooley, Janice and Blair H. MacNeill, 1971. A comparison of the modes of action of three benzimidazoles. *Phytopath.* 61: 816-819. (Environmental Biology)

Yadava, R. P. S., and M. V. Smith, 1971. Aggressive behaviour of *Apis mellifera* L. workers towards introduced queens. II. Role of the mandibular gland content of the queen in releasing aggressive behaviour. *Canadian Journal of Zoology*, Vol. 49, No. 8. (Environmental Biology)

NEXT WEEK AT GUELPH

THURSDAY, SEPTEMBER 30

- Seminar COMPARISON OF PLANNING LEGISLATION: ISRAEL AND ONTARIO, by Professor J. Adler, Haifa Technion, Israel. 2 p.m. Room 238, Arts.
- Club UNIVERSITY DUPLICATE BRIDGE. 7:30 p.m. 8th floor lounge, Arts.
- T.V. SPOTLIGHT ON UNIVERSITY OF GUELPH. Cable 8 at 2 and 5:30 p.m.
- Music AGGIE WEEK CONCERT PRESENTS STAMPEDERS AND TRUCK. 8:30 p.m. Physical Education building. Free with Impact card.
- Art EL GRECO EXHIBITION. Main floor gallery of McLaughlin Library. Remains on view until October 6.

FRIDAY, OCTOBER 1

- T.V. SPOTLIGHT ON UNIVERSITY OF GUELPH. Cable 8 at 7 p.m.
- Film HANDS UP MR. R ESNICH I, THE PISTOL, THE UTOPIES & A MAN AND HIS DOG, Free Film Theatre. 8 p.m. Room 105, Physical Science. Admission free.
- Students CONVOCATION. 10:30 a.m. Hon. Emmett M. Hall to be installed as Chancellor. 2:30 p.m. Chester Ronning will receive an honorary degree.

SATURDAY, OCTOBER 2

- Sports FOOTBALL — WATERLOO AT GUELPH. 2 p.m.

SUNDAY, OCTOBER 3

- Worship R.C. MASS. 11 a.m. War Memorial Lounge.
- Worship ANGLICAN EUCHARIST. 9:30 a.m. 9th floor lounge, Arts.
- Film KELLY'S HEROES, 6 & 9 p.m. War Memorial Hall. Free with Impact Card.

MONDAY, OCTOBER 4

- Lecture PLANNING FOR ENVIRONMENTAL QUALITY, by Dr. Stanley A. Cain, Institute for Environmental Quality, University of Michigan. 8 p.m. Room 121, Arts.
- Lecture KARL MARX, by J. McMurtry. Great Recent Philosophers series of the Learning for Living program. 8 p.m. 8th floor lounge, Arts. Admission \$1.50, adults, and 50¢ for students.

TUESDAY, OCTOBER 5

- Social COLLEGE WOMEN'S CLUB MEMBERSHIP TEA. 2:30 to 4 p.m. and 7:30 to 9:30 p.m. Home of Dr. and Mrs. W. C. Winegard. Memberships available.
- Course JOB CONTROL LANGUAGE. Institute of Computer Science training course. Instructor: David Oldacre. Room 212, Institute of Computer Science building. 1 p.m.
- Course IN-SERVING TRAINING — COMPUTER PROBLEM SOLVING. Contact: Professor R. Irwin, Engineering. Continues to Wednesday, October 6.
- Colloquium SOLUTION OF OVERDETERMINED SYSTEMS OF EQUATIONS, by Dr. W. Fraser, Department of Mathematics and Statistics. 4 p.m. Room 201, Physical Science.
- Meeting GUELPH FILM BOARD. 4 p.m. Public and general meeting. Room 114, Arts. Discussion concerns granting of Board's funds to campus film makers. Contact M. Lopex — 824 - 5133 or Peter Briggs, Ext. 3273, for further information.

WEDNESDAY, OCTOBER 6

- Drama TWO ONE ACT PLAYS. INFANTA, directed by Jerrold Karch, and THE HOLE, directed by David Corfield. 8 p.m. Drama Workshop. Admission 50¢. Tickets available at the Campus Box Office. Both directors are in Drama's first Honors class. Repeat performance on Thursday, October 7.
- Film INFORMATION RETRIEVAL, by IBM. Free film sponsored by the Institute of Computer Science. 12:15 p.m. Room 212, ICS building.
- Worship ANGLICAN EUCHARIST. 12 noon, 2nd floor lounge, Macdonald Hall.

THURSDAY, OCTOBER 7

- Drama TWO ONE ACT PLAYS. (See Wednesday notice)
- Seminar ISRAELI NEW TOWNS, by Professor J. Adler, Haifa Technw, Israel. 2 p.m. Room 238, Arts.
- Music JOY HYMAN, British Folk Singer. First of the Thursday Noon Hour Concerts. 12:10 to 12:45 and 1:10 to 1:45. Free admission. Music Room 107, Arts.



Noon concert series starts

Miss Joy Hyman, celebrated British folk singer will open the very popular Thursday Noon Hours Concert Series on October 7. Concerts are held in the Music Lecture Room of the Arts building from 12:10 to 12:45 and again from 1:10 to 1:45 p.m. to coincide with lectures. There is no admission charge and concerts are open to the public.

Miss Hyman is a mezzo-soprano, whose wide repertoire ranges from Elizabethan songs, through folk songs in 33 languages to 20th Century songs, self-accompanied on her Spanish guitar. She has given concerts and lecture-recitals since 1958 and has broadcast and televised regularly throughout the British Isles and abroad.

Miss Hyman has just completed two recitals in the Purcell Room of Festival Hall and St. Paul's Cathedral in London, England.

The Music Department of The British Council reports that "Joy Hyman is an established and very experienced artist, a very vivacious person, popular with an audience and puts her programs across in a highly professional manner".

This outstanding artist is on a trip to New York to do some recording and is making a special trip to Guelph to meet Miss Jean Little, Guelph author, whose works have been set to music by Miss Hyman. Miss Little plans to publish her latest book during Miss Hyman's visit.

The News Bulletin is published every Thursday by the University of Guelph's Department of Information. News items must reach the editor, Mrs. Betty Keeling, at the Information office, Room 361, McLaughlin Library (Ext. 3863) by noon Friday. Articles and news items may be quoted or reproduced in full.

Gryphons Games Broadcast

Gryphons football games both home and away, are broadcast on CJOY-Am, 1460. Hear the play by-play with Terry Spear in along with color by special guests.