

# Faculty of Agriculture & Forestry

The Faculty of Agriculture (under the name of College of Agriculture) was established in 1915. The first students to receive the Bachelor of Science in Agriculture degree (B.S.A.) graduated in 1918 while the present B.Sc. degree was first awarded in 1924.

A forestry program leading to the B.Sc. degree was started in 1970 and the initial group of students enrolled in the program began studies in the fall term of the 1970-71 academic year. The first degrees in Forestry were granted in April, 1974.

The professional programs in Agriculture and Forestry are four years in length and provide education

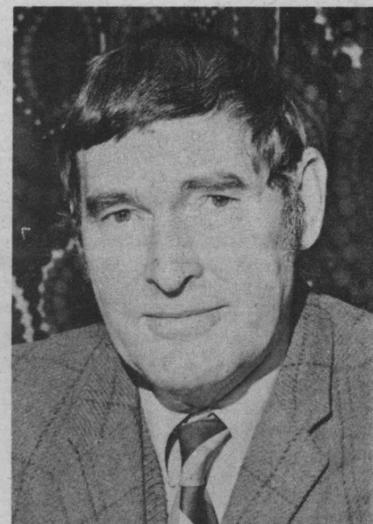
in numerous facets of the science of agriculture and forestry. The faculty is directly responsible for the administration of the departments of agriculture economics and rural sociology, agricultural engineering, animal science, entomology, food science, forest science, plant science, and soil science.

Many of the courses pertaining to the science of agriculture and forestry are taught in other departments of the university since the underlying scientific principles are similar to those in other fields. The departments in the Faculty of Agriculture and Forestry apply these principles to find solutions to current

problems and participate in research work to seek new information.

Graduates of the faculty are involved in teaching, research, extension, and administrative work related agriculture production, marketing, and processing; in the manufacture and distribution of such essentials as feeds, fertilizers, and machinery; in the handling of agricultural products; and in farming.

Forestry graduates are presented with employment opportunities with the federal and provincial governments and with industries associated with the production and marketing of forest products.



Dean

## MacHardy

The open house theme "Scientists at work for you" is well suited to the background of the Dean of the Faculty of Agriculture and Forestry.

Dr. Fenton MacHardy, an agricultural engineer, is known for his work in the development of improved farm machinery and farm building design.

In 1966, for example, he built a model tractor which operated without a driver. The tractor, run by a remote control guidance system, could drive itself over a prearranged path and bring itself back to the path automatically if it were forced out of its way through unforeseen circumstances such as a collision between the machine and a large stone.

Information stored on a magnetic tape was fed into the tractor drive system, telling it the steps it was supposed to perform. In order to detect unexpected occurrences, Dr. MacHardy tested heat sensitive devices placed at two corners of the field. These devices which would home in on the tractor's exhaust pipe and relay a message to the computer which would carry out corrective procedures and return the tractor to the correct path should it go astray.

In the operation of automatic machines an operator would only be needed to handle special problems such as a tractor getting stuck in the mud.

A native of Vermilion, Dean MacHardy farmed there for several years. At one time he directed a research study to determine the optimum level of farm mechanization for the average Alberta farm. The study found the number of working days made available by the weather and then related this to the size of farm machinery required for a given farm size.

Dean MacHardy holds degrees from the University of Saskatchewan; Northwestern University in Evanston, Illinois; and the University of Edinburgh, Scotland.

## Food science department studies food processing

How often have you missed the most spectacular view in miles because you weren't aware that it was only 200 yards off the main highway behind a bluff of trees?

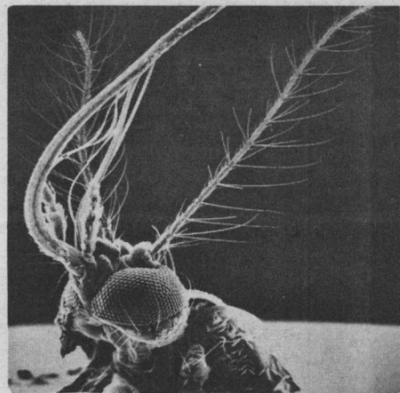
While not claiming to be the most spectacular view in miles, the department of food science is slightly off the beaten path for visitors to the open house.

But the slight detour to the South Lab number 11 on your map will introduce you to an interdisciplinary aspect of a specialized science: food processing, something of concern to us all.

There will be continuous demonstrations of the freeze-drying, the vacuum evaporation of fruit juice and the manufacture of cottage cheese in food processing pilot plants.

In addition, special displays showing the utilization of cheese when in various foods and of new products developed from soybean protein will be on exhibit. Visitors will be taken on guided tours of the laboratory facilities and questions will be answered.

As well, a film "Science of Survival" on careers in food science will be shown every hour, on the hour, in Room 229, South Lab Number 11.



Mosquito head magnified

### AGRICULTURE & FORESTRY

#### ANIMAL SCIENCE

1) Animal Physiology Ag. Bldg., 9 - Rm. 245  
Genetics, nutrition and biochemistry Room 245

General Section on Functions & Size of Department

#### PLANT SCIENCE

1) Horticulture Ag. Bldg., 9 - Rm. 327, Rm 342

2) Plant Breeding

3) Plant Pathology

4) Plant Physiology & Biochemistry Ethylene

5) Range & Pasture Research

6) Weeds; Wastes and Waste

#### AGRICULTURE ENGINEERING

1) Irrigation & Drainage Chem./Min. Bldg. 3 - Rm. 244

2) Farm Buildings - Design

- Environmental Control

- Manure Management Rm. 244

3) Safety & Work Science Rm. 244

#### FOREST SCIENCE

1) General Forestry Option Chem./Min. Bldg. 3 - Rm. 768

2) Forest Management Rm. 752

3) Forest Soils Rm. 723

4) Forest Hydrology Rm. 723

5) Forest Recreation Option Rm. 752

6) Grazing Option Rm. 723

7) Student Participation Rm. 741

#### ENTOMOLOGY

1) Insect Sculpture Ag. Bldg. 3 - Rm. 275

2) Scientific Publication Rm. 272

3) Areas of Specialization in Entomology Rm. 269

4) Insect Biochemistry Rm. 241

5) Aspects of Entomology Rm. 263

#### SOIL SCIENCE

1) What does a Soil Scientist do? (slides) Ag. Bldg. 9 - Rm. 240

2) What does a soils lab get used for? Rm. 210

3) What is remote sensing? Rm. 475

4) Heavy Metal Pollution of the soil. Rm. 460

#### FOOD SCIENCE

1) Lab Facilities

2) Film "Science of Survival" South Lab. 11 - Rm. 229

#### FACULTY OF AGRICULTURE AND FORESTRY

1) Entrance Requirements Ag. Bldg. 9 - Rm. 150

2) Pre-Veterinary Medicine Rm. 150

3) Agronomy Display Rm. 150

4) Grazing Management Program Rm. 150

#### AGRICULTURAL ECONOMICS

1) Farm Management and Production Economics Ag. Bldg. 9 - Rm. 155

2) Agricultural Marketing Rm. 245

3) Land Use Competition and Forestry Economics

4) Agricultural Ec. in International Devel. Rm. 345

5) Rural Sociology (Social Issues and Change) Rm. 155

# Animal research for ecology

The initial reaction of open house visitors might be similar to that of the kid in the candy store that is an uncertainty of what to go after first.

However, increasing interest in the ecology situation as it pertains to animals should lead many visitors to the displays related to animal research whether they are in the department of zoology, animal science or even electrical engineering.

The zoology department is located in one wing of the Biological Sciences complex (15d on the centre fold map). A mixture of teaching and research displays, a tour through a typical vertebrate biology laboratory (zoology 326-second year course) featuring demonstrations of mammalian adaptations using live animals, counselling for prospective

students on "careers in zoology" and discussion with undergraduate and graduate students are the activities available to visitors to this department.

Six major zoology displays, located in Room M-145 of the Biological Sciences Centre represent research efforts of staff and graduate students. A prominent display illustrates the phenomenon of mammalian hibernation, an energy conserving strategy used by the local Richardson's ground squirrel (often called gopher) to survive Alberta's harsh winters.

Researchers in the department are actively studying the physiological adaptations associated with natural hibernation because of its potential contribution to understanding other areas in low

temperature physiology. These include artificial hibernation or temporary suspension of life and the preservation of organs, embryos and organisms.

The zoology museum (room number Z-1013) maintains a strong interest in the distribution of animals within Alberta and, under the direction of Wayne Roberts, will feature the animals of southeastern Alberta. Museum staff will discuss the zoogeographic and adaptive features of displayed vertebrates restricted to the arid or semi-arid life zones of southeastern Alberta.

The "behavior" group's display has the social organization of the Columbian ground squirrel as its theme. Social structures, seasonal changes in the behavior of males, females and young, and the influence

of scent marking on social organization will be demonstrated through the use of live animals and placards.

Brief descriptions of the social systems of five other species of ground squirrels along with live animal representatives of each species will be included.

The display was organized under the direction of Keith Kivett.

A unique graduate research program on movements of striped skunks using radio telemetry will utilize a "collared" live (but descended) skunk and the receiving unit. This project, directed by Ron Bjorge, will emphasize the cooperative efforts necessary to collect data for most zoology research projects, in this case those of the Alberta Department of Agriculture, Alberta

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