

WINTER SESSION 1989-90 REGISTRATION

Calendars and Registration Materials Are Now Available

Don't forget to pick up your materials from your current Faculty Office at the times noted below.

If you are unable to pick up your materials at these times or have someone pick them up for you, they will be available for purchase at cost from the Bookstore.

REMEMBER: Even if you are planning on changing Faculties and/or Programs for next Winter Session, you **MUST** pick up your registration materials from your current Faculty Office.

THIS IS YOUR ONLY OPPORTUNITY TO OBTAIN THESE AT NO COST!

PROGRAMS:	LOCATION:	ROOM:	DURING:
Agriculture & Forestry	Agriculture-Forestry Centre	2-19	March 15 - April 7
Arts	Humanities Centre	5-20 6-7	March 15 - 21 only April 24 - 28 only
Business	Business Building	2-20	March 15 - 31
Education	Education Building - South	833	March 15 - April 28 only
Engineering - obtain materials as follows: for counselling dates, refer to the information in the procedures booklet.			
Current 1st Year and 2nd Qualifying Year Students			
	Mechanical Engineering Bldg.	5-1	March 15 - 31
Current 2nd & 3rd Year Students			
Chemical	Chem. & Min. Engineering Bldg.	536	March 15 - 31
Civil	Civil & Electrical Engineering Bldg.	220	March 15 - 31
Electrical & Computer	Civil & Electrical Engineering Bldg.	238	March 15 - 31
Mechanical	Mechanical Engineering Bldg.	4-9	March 15 - 31
Mineral	Chem. & Min. Engineering Bldg.	606	March 15 - 31
Home Economics	Home Economics Bldg.	115	March 15 - 31
Medical Laboratory Science	Clinical Sciences Bldg.	B117	Commencing March 15
Nursing			
Post R.N.	Clinical Sciences Bldg.	3-116	March 15 - 31
Basic		3-118	March 15 - 31
Physical Education & Recreation			
Bachelor of Physical Education	Van Vliet Phys. Ed. & Rec. Centre	Pav-421	March 15 - 24
B.A. Recreation Administration	Van Vliet Phys. Ed. & Rec. Centre	E-401	March 15 - 24
Rehabilitation Medicine			
Occupational Therapy	Corbett Hall	316	March 15 - April 11
Physical Therapy	Corbett Hall	316	March 15 - April 11
Speech Pathology & Audiology	Corbett Hall	316	March 15 - April 11
Faculté Saint-Jean	8406 - 91e rue	102B	du 15 mars au 21 avril
Science			
(Honors & Special)	Biological Sciences	CW223	March 15 - 29
(General)	Biological Sciences	CW223	March 15 - April 7
Graduate Studies & Research (Graduate students should contact their Departments first)	University Hall	2-8	Commencing March 15

Other Faculties: to obtain registration information, please contact your Faculty Office after March 15

THE TIMETABLE WHICH CONFIRMS YOUR REGISTRATION MUST BE CLAIMED AT THE TIMES NOTED IN THE REGISTRATION PROCEDURES BOOKLET. TIMETABLES WHICH ARE NOT CLAIMED WILL BE CANCELLED. ONCE CANCELLED, REGISTRATIONS CANNOT BE RE-INSTATED.

Scientists study why swallows gobble young

by Hugh Westrup
from *Canadian Science News*

Finding a suitable nesting site is so difficult for tree swallows that male swallows will kill the chicks of others to clear a nest and breed their own offsprings, two Queen's University biologists recently found.

In an effort to protect her own biological investment, the female in the nest often will immediately copulate with the new male to fool him into thinking the eggs are his own offspring.

Dr. Raleigh Robertson and graduate student Bridget Stutchbury (now a Ph.D. student at Yale University) discovered the infanticide among the tree swallows. In an experiment, they erected bird nests in hayfields near Kingston, Ontario. Once a male and female tree swallow had mated and inhabited the nest, the two scientists removed the male and watched what happened.

In several cases, a new male entered the nest and killed any young nestlings, or dumped them out of the nest onto the ground. One of these males continued to live in the nest with the original female. Two other males brought in new females.

Robertson says biologists have only recently begun to study infanticide among animals. So far, they have found infanticide in a number of mammal species, including lions, several primates, and many small rodents. Now they're finding it in birds.

"My guess is that as we study more bird species, we'll find infanticide occurring there, too," Robertson says.

What drives the male swallow to kill the nestlings of other families? Robertson says one factor is the perpetual housing shortage among tree swallows. These birds don't build their own nest sites; instead, they move into vacant sites — normally holes in old trees — made by other birds.

What drives the male swallow to kill the nestlings of other families?

Because vacant holes are hard to find, there are always many male (and female) swallows looking for a place to nest and breed. Males without a nest are called 'floaters.'

"When there are lots of birds looking for a place to breed, there is severe competition for nesting sites, which leads the males to extremes of behaviour such as killing nestlings," says Robertson.

Besides, the swallow's average life span is only about two years. "Because their life span is short, the males are under enormous pressure to pass along their genes as quickly as they can," he adds.

Robertson says that he never observed male tree swallows destroying eggs, only nestlings. Whenever a new male entered the nest while the eggs were being

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incubated, he would wait until the eggs hatched, then kill the chicks. "Perhaps the males weren't able to pick up the eggs. And if they broke the eggs in the nest, it would probably foul the nest," says Robertson.

While doing his experiment, Robertson always kept in mind that what is good for the gander — or male tree swallow — is not always good for the goose — or female swallow. Though it may be to the male's advantage to kill nestlings, it's not in the best interests of the female, who has invested so much energy in raising them.

Indeed, whenever a new male occupied a nest, the resident female would immediately copulate with him even if she had already laid her eggs and was incubating them, Robertson says. This strategy sometimes stopped the male from killing the nestlings at hatching time.

"If the male arrived less than two days after the eggs had been laid it abandoned its infanticidal behaviour. If it arrived later than two days after the eggs had been laid, it killed the nestlings at hatching time," he says.

"By copulating with the male, the female is able to 'fool' the male. He doesn't kill the nestlings because he considers them his own," he adds.

Already, Robertson's research has received praise from bird-watchers in the U.S. and Canada. "Many birdwatchers have been puzzled by the frequent disappearance of young nestlings from tree swallow nests. They asked themselves, 'What kind of predator would snatch away the nestlings — a snake perhaps, or maybe another type of bird — and why would it happen immediately after the nestlings had hatched?' My study gives them an answer," says Robertson.

This research was funded by the Natural Sciences and Engineering Research Council.