

The Battalion

Warm,
cloudy,
humid

Generally fair thru Friday.
Maximum temperature 95 degrees,
minimum temperature 70 degrees.

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Telephone 845-2226



Donald Jones gathers insects for research
Green lacewings prove 'big things come in small packages'

Cotton farmers' hopes lie with predator insect

By Pat Little

Developing an economical and effective method of raising a predator insect which preys on cotton bollworms and tobacco budworms is the goal of scientists at the Entomology Research Laboratory.

Their attention is centered on a graceful and delicate insect, the green lacewing and its offspring, a ferocious larva with formidable pincers and an appetite so aggressive it is called the aphid lion.

The aphid lion has been known to be a natural enemy of the cotton insect for many years, but the laboratory is the first to recognize its practical use as an insect control after extensive field tests. The next step is to develop a low cost method of producing the larvae.

The larvae would have to be

raised today on grain moth eggs, the cheapest natural food, which would cost the farmer about \$200 per acre, plus \$15 for distribution.

Long weekend ahead for 4th

A long weekend for students begins Friday, adding Monday to the July 4 holiday since Independence Day falls on Saturday this year.

Classes dismiss at 5 p. m. Friday and will resume at 8 a. m. Tuesday, July 7. With the institutional observance of Independence Day Monday, classes are dismissed that day, Academic Vice President H. R. Byers announced.

Monday also will be a faculty-staff holiday.

The Three-day holiday will cut the final week of the first summer session to three class days. Session final exams begin Thursday evening, July 9, and conclude July 10.

An artificial food was developed by Dr. Erma S. Vanderzant, United States Department of Agriculture (USDA) biochemist and insect nutrition specialist, and the liquid is encapsulated in "eggs," which are tiny capsules about 20 thousands of an inch in diameter.

The aphid lion feeds effectively on both the artificial eggs and the natural food. Sam House, biological technician in charge of rearing the insects, said the development of the larvae is slower when the artificial food is used, but it is still very effective.

The problem on encapsulating the dietary fluid was handled by the Southwest Research Institute (SWRI) on the basis of its extensive experience in that field.

Clarke E. Schuetze, SWRI senior research chemist, Dr. Leon Adams, manager of the organic and polymer chemistry section of the Institute's Department of Chemistry and Chemical Engineering, and Research Chemist

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Directors award contracts

contracts total more than \$9.3 million

Contracts totaling \$9.3 million were awarded Tuesday by the Board of Directors.

The board also sold a \$5 million revenue bond issue to Halsey, Stuart & Co., Inc., and Associates of New York, low bidder, at an effective interest rate of 7.5030 percent.

Largest contract was a \$7,197,000 award to Houston-based Manhattan Construction Company of Texas to build a new low-density dormitory complex on campus. Revenue from the bond issue will help finance the project, designed to accommodate nearly 1,000 students.

Another large project included six contracts for improvement of water system facilities on campus. Contract winners were Panhandle Construction Co., Inc., Lubbock, \$562,220; R. B. Butler Inc., Bryan, \$388,838; R. B. Hodgson & Co., Inc., Dallas, \$285,466;

Gorbett Bros., Inc., Fort Worth, \$41,669; Smith Pump Co., Waco, \$32,865; and Delta Machine Co., Inc., Houston, \$16,680.

The Jarbet Co. of San Antonio was awarded a \$357,041 contract for construction of new parking facilities for the northeast section of the campus and pavement repair around the System Administration Building.

Contracts totaling \$256,149 were awarded for two construction projects at Prairie View. Rowe and Mayfield, Inc. of Houston received a \$129,700 award to construct an eight-classroom building. Chappell Hill Construction Co. of Brenham won a \$126,449 contract to build a new fire station and campus security office.

Other contracts included \$84,261, Commercial Kitchens Divi-

sion of Industrial Industries, Inc., Houston, portion of Kitchen and food-serving equipment for new dormitory; two awards totaling \$49,898 to J. A. Callaway, Bryan, construction of portable animal shelter complex; \$17,830, MarCal, Inc., Bryan, replacement of windows at P. L. Downs Natatorium.

Also \$17,826, Mabry, Inc., Bryan, fish tank temperature control system in Biological Sciences Building; \$17,450, Sentry Construction Co., Bryan, convert Dairy Breeding Center to Ruminant Nutrition Laboratory; and \$16,934, W. E. Kutzschbach Co., Bryan, outdoor lighting for veterinary medicine complex.

In other action, the board appropriated \$297,990 for projects here and Tarleton State College.

A \$122,000 appropriation was earmarked for hot water service to the southeast portion of the campus, where the new dormitory will be constructed.

The board allocated \$120,000 for detailed design of a new office and classroom building, \$25,000 for detailed design for a new educational television building and \$20,000 for landscaping in the central campus mall area. A \$7,000 appropriation was approved for detailed design for electrical service for the proposed Oceanography and Meteorology Building.

Tarleton State received a \$2,990 appropriation for continued Administration Building remodeling and \$1,000 for a program of requirements to utilize unfinished attic space in the Tarleton Student Center.

Vice President says 14,900 due during fall

Dr. Horace R. Byers, academic vice president, told the Board of Directors Tuesday to expect an enrollment of 14,900 in the fall term.

"This figure is imprecise—I wouldn't be surprised if we went below 14,000 or above 15,000," Byers said. He added that the figure would be approximately 900 higher than last year's enrollment.

Byers said he anticipates approximately 3,180 (or 21.4 per cent of total enrollment) graduate students and about 1,350 (9 per cent of total enrollment) women. He added that approximately half of the women will be graduate students.

"We anticipate the corps of cadets to maintain its present level," Byers added.

He emphasized that the University of Texas is already in trouble with the Coordinating Board, Texas Colleges and University System, because of its large enrollment. Byers pointed out that A&M is slightly above its projected enrollment.

"This is one thing we should worry about—as time goes on, we're going to have to level off," he said. Byers added enrollment will have to be held at 20,000 by 1980 in accordance with Coordinating Board's figures.

He added A&M is limiting enrollment by applying a double standard for undergraduate students—one for out-of-state students and one for resident students.

"However, in graduate school, the name of the game is to not discourage non-resident graduate students because this builds up a colleges' reputation on its ability to draw students from throughout the world," Byers said.

Department develops studies for Post Office

Finding the best route between buying elaborate, highly reliable equipment and less costly machinery that may require constant maintenance is the purpose of campus investigations for the U. S. Post Office Bureau of Research and Engineering.

Known as maintainability engineering, it involves measuring and predicting maintenance needs of postal equipment systems in terms of repair costs and lost operating time.

The Industrial Engineering Department headed by Dr. A. W. Wortham conducts the research under a 16-month, \$98,863 contract to develop a reliability and maintainability analysis program for the Post Office. Wortham directs the project.

Dr. Wilbur L. Meier Jr., industrial engineering professor in charge of various project phases with Dr. Robert L. Street, said work will be completed in December and that interim reports are being eagerly snapped up by postal officials.

"They are so interested that they are pressuring us, taking our draft reports and circulating them throughout the department," Meier said. "It's surprising the way these are welcomed, even by people in the maintenance division."

Final product of the contracted study will be sets of training manuals and reports on how to use maintainability programs.

The post office problem is keeping in operation highly complex machinery in the large mail processing centers. To keep abreast of burgeoning mail loads, the post office has automated many aspects of mail handling, including machine sorting and cancellation of envelope and package mail, Meier explained.

Extremely sophisticated types

of further automation are being studied, but such equipment must be highly reliable or have rapid built-in maintenance capabilities.

"A three-hour down period for repairs just can't be tolerated," Meier noted. Besides building up massive backlogs, breakdowns require mail storage for which the post office does not have warehouse facilities.

Postal authorities realize, he added, the best answer is to keep mail in constant motion, to never let it stop in the processing stage.

It is believed the maintainability program can help prevent bottlenecks. Maintenance would be considered in the machinery design process, to minimize life cycle costs.

Students propose Mars trip design

A preliminary design for means of placing 12 men on Mars for 75 days has been proposed by 17 students.

Four spacecraft—an earth-orbit shuttle, space station, command ship and Mars lander—were designed to meet requirements of a proposal request by Prof. Stanley H. Lowy in an aerospace engineering course.

During the 4½-month project, student groups headed by William C. Brown of Zephyr; Larry B. McWhorter, Bedias, and Kenneth R. Payne, Midland, considered aerodynamics, trajectory, propulsion, guidance-navigation-control, structures, materials and environmental control, life support and power systems for each of the vehicles.

The seniors' proposal was evaluated by a board composed of government and industry representatives.

Lowy said the 155-page proposal also including three-view drawings of the vehicles and a final design budget was "very good."

"I wouldn't call it perfect," he evaluated, "but the design has no

flaws. The system was designed from the standpoint of currently feasible materials and technology. It did not attempt to extend the state of the art, and for that reason did not entail too much creativity."

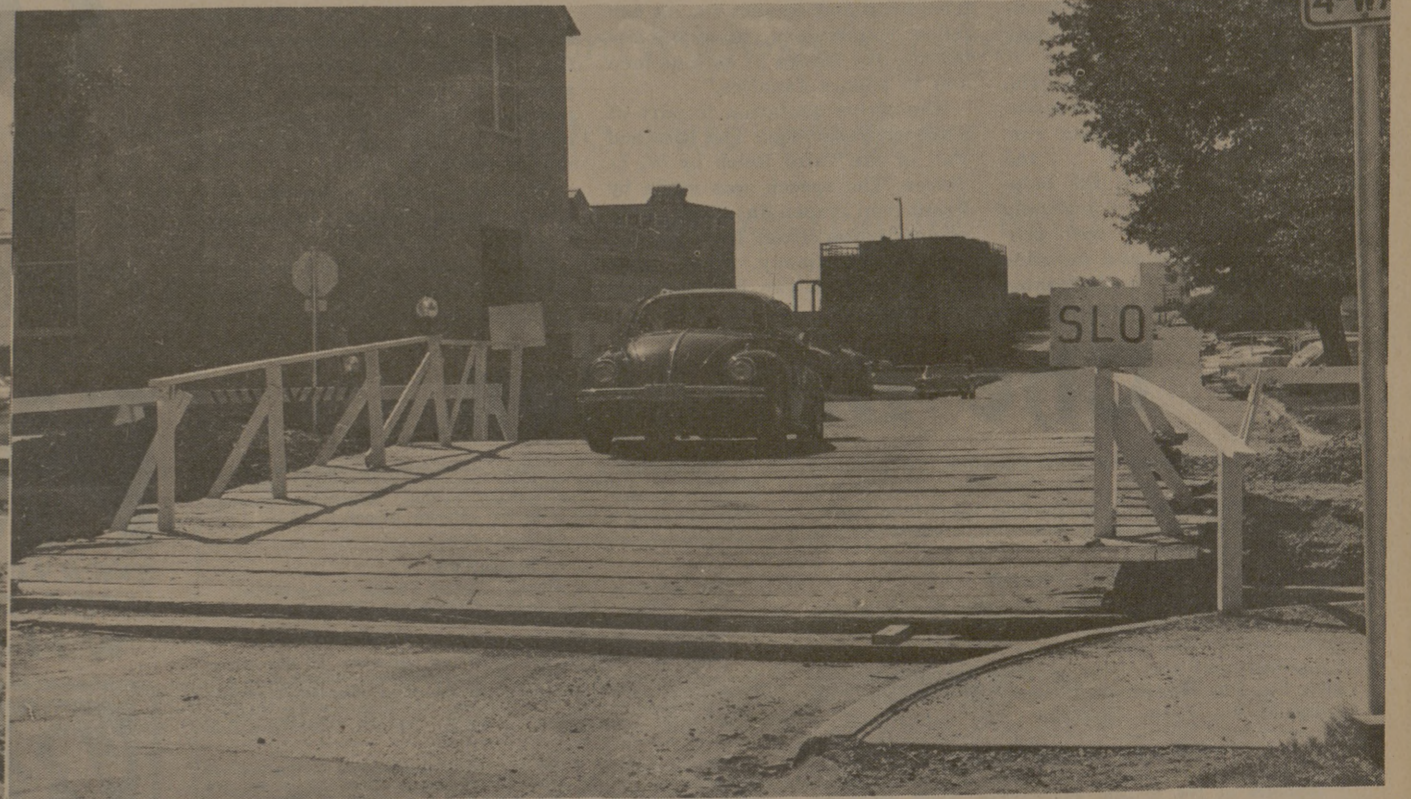
Rationale for the manned Mars mission was based on current scientific need for more information about the earth, solar system and other planets. Current space agency planning calls only for unmanned probes to tour the major planets within the next two decades.

Prediction of earth atmospheric properties many years in the future could be based on a study of Mars' atmosphere, Lowy noted.

"In addition, a manned expedition could make geophysical observations, collect soil and atmospheric samples, study life forms if they exist on Mars, study behavior of earth life forms in the Martian environment and search for usable material re-

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University National Bank
"On the side of Texas A&M."
—Adv.



Sign and bridge over Ross Street—no Aggie Joke