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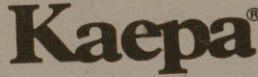
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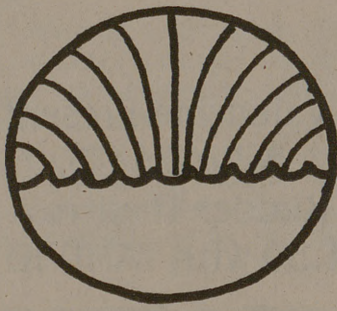
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Entomologists working to combat the mosquito

By **KATIE DICKIE**
Reporter

A Texas A&M entomologist is combining the expertise of entomologists, ecologists, aerospace engineers and Mother Nature to fight mosquitoes.

Jim Olson heads up a program attempting to combat mosquitoes in rice-producing areas. The team is made up of entomologists, ecologists, behaviorists and engineers from Arkansas, Louisiana, Mississippi, Texas, and California.

More than half of the 160 mosquito varieties can be found in Texas. Olson is studying the *Psorophora columbiae* and *Culex salinarius* types.

Though the *columbiae* variety has been linked in cattle deaths, the *salinarius* type is mainly an annoyance, Olson said.

Texas' mosquito problem lies mainly in the coastal, rice-producing regions.

The rice fields have been estimated to be the home of 500,000 mosquito larvae per acre.

Though mosquitoes are physically small, their large numbers cause a big problem, Olson said.

A female mosquito can ingest about five times her body weight in blood. After a blood meal she lays about 120 to 160 eggs.

"Our goal is to develop the most accurate survey techniques and forecasting models to predict what our enemy is doing out there," Olson said, "or simply a system of strategies that are going to suppress these populations to levels that can be tolerated by humans."

Olson said these tolerance levels vary.

"Right now 12 bites a night make people say mosquitoes are bad down here," Olson said, but human attitudes toward the annoyance change.

"The freer the environment is of mosquitoes, the less tolerant they (area residents) are of a few," he said.

The research team hopes to lower the number to the level of two or three bites per night.

Olson said the team's major concern is to ensure that anything it uses to eradicate the mosquitoes will not adversely affect nature.

"Nature is already doing one whale of a job out there in controlling mosquitoes," he said.

It is estimated that only 25 percent of all mosquitoes hatched ever get to the adult stage.

Predatory beetles, backswimmers and mosquito-eating fish help control the pests.

Physical factors such as temperature or even methods of irrigation may affect the lifespan of a mosquito, Olson said.

"The higher the temperature, the faster they grow; the cooler the temperature, the slower they grow," he said. "But they are still growing, they're just waiting for a little warmer temperature."

Mosquito eggs survive winter.

Early attempts to control the mosquito problem proved too expensive or failed to take care of the dormant winter egg problem.

But ten years ago a bacterium was



Photo by ELIZABETH LEE

Texas A&M entomologist Jim Olson examines mosquito which are enclosed in a cold air environment.

discovered in Israel which was the answer to all the environmental problems. *Bracillus thuringiensis israelensis* is a toxin that is only harmful to aquatic fly larvae.

Mosquitoes are stricken with a fatal case of diarrhea after ingestion of the BTI toxin.

"It blows their guts apart," Olson said.

Until this past summer, the application of the BTI was too expensive to use commercially. The process cost \$5 to \$7 per acre and had to be applied several times to get rid of the mosquito larvae.

Modifications in the application methods by Olson and a group of engineers have dropped the application costs to a base cost of \$1,800 and 23 to 40 cents per acre.

The application involves spraying an infested area with BTI. Olson said any spray plane can be utilized. The project engineers developed a portable system that whips the BTI out over the rice fields.

The team plans to initiate the BTI process in Arkansas this summer. In Texas, a more limited attempt will be introduced in Chambers County on the coast.

Olson said the ideal time to concentrate the application is at the larval stage.

"The main objective is to answer before they get to town," he said.

The mosquitoes are easier to control while they are swarming, said male mosquitoes swarm 300-foot columns are not common. A plane developed by the council has swarms will help them fly through the MSC. Include different levels and capturing plings.

Olson and his army of entomologists are studying where and how mosquitoes are concentrated. The spot treatment will eradicate many as possible through the BTI toxin. In the fall, the team wants to indicate most of the population of the wintering eggs. This organization crease both the number of mosquitoes going into winter and the population.

"The major emphasis is on the late fall and early spring," Olson said.

"If this works, particularly *Psorophora columbiae*, we're going to put a heck of a dent in a mosquito problem that occurs in a rice-producing area. It should be a better plan if it works," Olson said.

Population figures indicate B-CS's 'metropolitanization'

By **ROD RICHARDSON**
Reporter

The latest census figures reveal Bryan-College Station has become one of the fastest growing areas in the United States.

Robert Cornish, associate professor in the Department of Urban and Regional Planning at Texas A&M, agrees.

The 1980 Census of Population and Housing shows a 61 percent population increase in Brazos County which translates into about 36,200 more people in the area since 1970.

Cornish says these growing population figures represent an essential phase of "metropolitanization"

which occurs when large numbers of people move into an area and begin looking for more and better entertainment and service facilities.

Cornish says once basic services such as adequate sewage treatment, road repair, and public transportation are provided for, then attention can be focused on fine arts and entertainment.

Dr. Donald Sweeney, interim head of the Department of Urban and Regional Planning, says A&M has a significant role in the overall development of the region.

The University has started to place more emphasis on research, Sweeney says, and that emphasis has

led to an increase in the number of graduate students living in the College Station.

"Graduate students are likely to play active roles in the community, since they often live with their spouses and children," Sweeney said.

Cornish says the size and growth of the student population at A&M are attractive to businesses and industries.

However, he says population growth in this region will be because of reduced operations in the oil industry and University designed to limit undergraduate enrollment.

Gramm predicts political conversions

Associated Press

AUSTIN — Sen. Phil Gramm, calling 1984's sweeping Republican victories "a political earthquake," predicted Tuesday many Texas Democratic officeholders soon will be switching parties.

"I intend to work to encourage conservative Democrats who share our values — and who are in a party that does not share theirs — to come over and join our party and to help us become the new majority party in Texas," Gramm said.

Speaking to the Travis County Republican Party, Gramm poked fun at Democratic Gov. Mark White's failure to convince three Dallas County Democratic judges from switching parties last week.

"Our governor, hearing of their possible change, summoned the judges to Austin to tell them they ought to stay in the Democratic Party because he was going to be at the head of the ticket in 1986," Gramm said. "They joined the ranks of the largest and fastest-growing element of the Texas Democratic Party — former Democrats."

"Those three judges are the tip of the iceberg. We're going to see many elected officials that currently hold office in the Democratic Party come over to the Republican side."

Two years to the day after he won election to the House as a newly converted Republican, Gramm said the GOP now stands closer to the average Texan than does his old party.

Last year's victory "occurred because we gave a positive program to the people of Texas, because we gave them candidates who shared their philosophy and their values," he said.

Gramm said a key reason for new Republican popularity is President Reagan's economic program. The combination of tax cuts and its on government spending creases is exactly what was wanted, he said.

He said the Reagan policies overhauled the nation's political logue, and he noted House Majority Leader Jim Wright, D-Texas, Monday traveled to Austin to propose his own spending freeze deficit reduction plans.