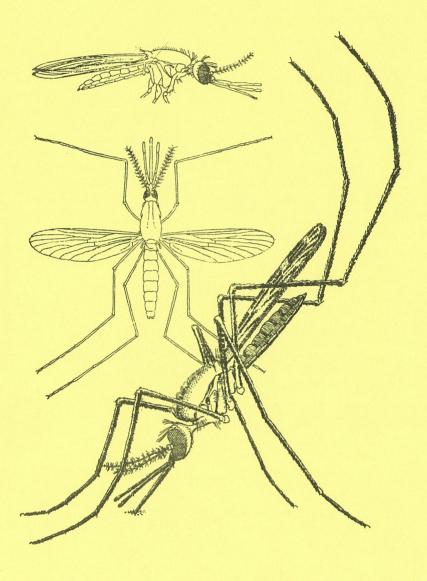
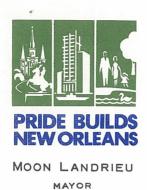
New Orleans Mosquito Control



Mosquitoes are flying insects with a damnably poisonous bite which everyone except hotel managers has seen, heard or suffered from.

Edward Lucas 1868-1938

Annual Report 1974



CITY OF NEW ORLEANS

ORLEANS PARISH MOSQUITO CONTROL

10TH ANNUAL REPORT

1974

MAYOR'S ADVISORY COMMITTEE ON MOSQUITO CONTROL

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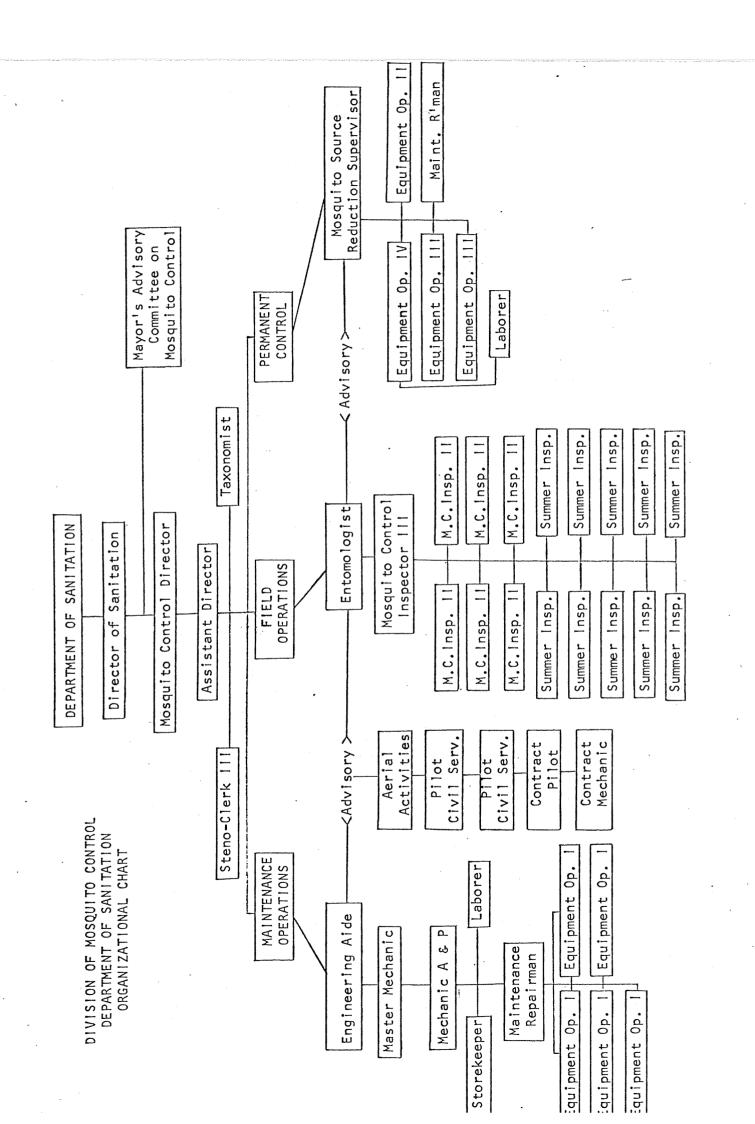


TABLE OF PERSONNEL

1 Director Assistant Director 1 Entomologist Engineering Aid 1 Source Reduction Supervisor 1 Equipment Operator IV Master Mechanic 1 2 Equipment Operator III Steno-Clerk Taxonomist 1 Mosquito Control Inspector II 6 2 Maintainence Repairmen 2 Mosquito Control Inspector I 5 Equipment Operator | 2 Laborers 10 Seasonal Part-time Works

MOSQUITO CONTROL EQUIPMENT LIST

1	1970	4-dr. Ford Sedan	A-1
1	1970	Ford Station Wagon	A-2
1	1973	4-dr. Ford Sedan	A-4
1		Douglas DC-3	AC-1
1		Grumman Ag-Cat	AC-2
2		Allis-Chalmers Backhoe	BH-1
1		350 Case - Crawler	C-1
1		Little Giant Dragline	DL-1
1	1962	Chevy Dump Truck	DT-1
6	1964	Ford F-250 Fog Truck	F-1 - F-6
1	1965	Ford F-250 Fog Truck	F-7
5	1971	International Pick Truck	1-1 - 1-5
5	1971	International Pickups	S-1 - S-5
		GM Pickup Truck	S-6
1 2		Ford Pickup 4-Wheel Dr.	S-7 - S-8
4-2	1975	GMC Pickups	S-9 - S-12
2	1965	Ford 3/4 T Larv. Truck	L-1 - L-2
1		Wheel Buggy	MB-1
1_		Track Buggy	MB-2
1		Caterpiller Forklift	FL-1
1		Allis-Chalmers Forklift	FL-2
1		Tractor Mule	M-1
3 2		Utility Trailer	T-1,T-2, T-5
		Tank Trucks	T-3,T-4
1		Tractor Trailer	TR-1
2		Gasoline Tank Trucks	TT-1, TT-2

1		Boat, 15' Fiberglass Boat trailer	
1		30 HP Outboard Motor	
1		5 HP Outboard Motor	
1		Flatboat	
Ļ		Honda CT70 Motorcylces	H-1 - H-4
2	19 7 3	Ford Econoline Vans	V-1 - V-3
1	<u> 1960 </u>	International Van	V-2
L_{r}		Electrical Power Plts.	P-1 - P-4
2		Lawn Care Mowers	

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GENERAL

The year of 1974 will be recorded as one of varied activity in the Orleans Parish Mosquito Control Program. The mild winter of 1973, coupled with above normal rainfalls, produced heavy populations of mosquitoes throughout much of the year, which resulted in control activity being maintained on an active basis throughout the 12 month period.

The highlight of 1974 would be the 10th anniversary of our Mosquito Control Program. This was celebrated with a special June monthly report in which a summary of the 10 years of mosquito control activity was included. The July meeting of the Mosquito Control Advisory Committee included the Mayor and City Council who were invited to attend the presentation of this 10 year report. The Times-Picayune had a very complimentary editorial on our 10 years of operation, as did radio station WNOE in a 10 minutes segment in their "Magazine of the Air", which complimented the 10 years of mosquito control for the City of New Orleans.

Hurricanes also played a part in the highlights of 1974 when a "nearmiss" of Hurricane Carmen occurred during the early part of September. This brush with Hurricane Carmen left a 4" rainfall which was responsible for increased mosquito production during the month of September. Following Hurricane "Fifi", which struck the coast of South America, the Director went to Honduras to evaluate the mosquito infestation that was produced by this hurricane. This trip was made in October, and the damage from the hurricane was evaluated. Plans were made to spray a large segment of this country with our DC-3, but the unavailability of chemicals forced the cancellation of this operation.

Training played an important part of our year's operation with the major endeavor being a mosquito control short course, which was held at Delgado Junior College. Fifty-one mosquito control personnel in La. received a certificate from this course. Delgado also held a four-day course in safe handling of pesticides; which was attended by the majority of the people at Orleans Parish Mosquito Control Program. Another training course which OPMC personnel attended was the U.S. Civil training course in 'Marine and Estuarine Water Quality Management'. We also participated in the Gulf States Council on Wildlife, Fisheries and Mosquito Control two-day seminar in Baton Rouge.

The return of the Aedes aegypti to New Orleans brought about the addition of A. aegypti surveillance program to our operation. The installation of 191 ovitraps was programmed through the second half of the year, and four employees have been designated to work specifically in this program. The results of this surveillance program have indicated beyond a shadow of a doubt that the A. aegypti have become well established within the City of New Orleans and can be found in many different segments of Orleans Parish. Control operations for this particular species were evaluated and have been instituted in certain target sections of Orleans Parish. Urban mosquitoes and permanent water breeding mosquitoes continue to require additional attention and the Orleans Parish Mosquito Control Program will have to bring additional resources to bear on these areas in the coming years.

ENTOMOLOGICAL REPORT - 1974

Three years of warm, moderate winters and a surplus rainfall of 10 inches above average, at the end of 1973, set the conditions for a recordsetting beginning for Orleans Parish mosquito populations in 1974. January's adult female mosquito average per trap night was the highest for that month since 1966. February was the highest average catch in the 10 years of light trap records at Orleans Parish Mosquito Control. March produced the highest average mosquito collections for that particular month since 1966. In spite of record numbers of mosquitoes, the pestilence level for the first 3 months of 1974 was not very severe. Permanent water mosquitoes accounted for 95% to 99% of the total catches for this 3 month period and these particular species do not migrate great distances and they do not create near the annoyance level that floodwater mosquitoes As further evidence of a very mild winter, Culiseta inornata (the winter mosquito) accounted for less than 3% of the January, February collections. During a normal winter, this cold-tolerant mosquito species will account for 20% to 50% of the January, February light trap collections.

As illustrated by the 1974 Mosquito Correlation Graph (see fig. 1)
April, May, June and July were uneventful mosquito production months.
Floodwater mosquito conditions were enhanced during the month of June when only 1.93 inches of rain was recorded in Orleans Parish. July rainfall was also below average and these drying conditions exposed prime oviposition sites for the gravid female sollicitans to place her eggs. August began to reflect the consequences of the two previous dry months as the floodwater mosquito collections increased. The permanent water peak was not as high as fig. 1 would illustrate because 59% of the August floodwater collection were Uranotaenia species which do not normally feed on humans.

September was the most active mosquito control month of the year. Of the 6" of rain that fell during September 4" fell over a 48 hr. period as a result of the passing of Hurricane Carmen. These conditions produced the September floodwater mosquito peak (see fig.1) that pressed Mosquito Control's DC-3 into operation. A complete treatment cycle on the entire parish had to be made by the divisions' airplanes and ULV trucks. The ground adulticiding program treated 47,418 acres and the aerial adulticiding program treated 51,322 acres during the month of September. The presence of large numbers of Aedes sollicitans in September, a very dry month of October (.53 inches rainfall) and 6.83 inches of rainfall in November (double the 81 yr. average of 3.31) were the conditions responsible for a very active December. The warm days of December allowed the saltmarsh mosquito to complete its life cycle and migrate into the populated areas of Eastern New Orleans. Because of high winds and cool nights optimum treatment time was very restricted and control was difficult to accomplish.

The mosquito excess of 1974 will be carried over into 1975 and Orleans Parish Mosquito Control will continue to experience difficulty in controlling these unseasonably large broods of mosquitoes. Unfavorable climatic conditions were responsible for these winter broods and the winter excess will not be reduced until a more severe winter is experienced in the Gulf Coast area. The ten year light trap averages continue to indicate a substantial reduction in the target mosquito Aedes sollicitans, (see fig. 2). Permanent water mosquitoes have been on the increase since 1970 when 8,000 acres were impounded in Eastern New Orleans. As the floodwater mosquito problem is reduced and controlled more effort will be placed in the direction of these permanent water mosquitoes.

DOMESTIC MOSQUITO CONTROL REPORT - 1974

There were 3 large broods of mosquitoes during 1974. The first occurred in April and May when scattered spring thundershowers flooded areas too frequently to allow larviciding efforts to do an effective job. During this time 895 areas were checked for breeding; 32% of these areas were found to be positive for breeding, and required the application of nearly 600 gals of "T-2" larviciding oi! (50 gal. #2 diesel and 1 qt. surfactant). The next problem was associated with the heavy rains in September, especially those that accompanied Hurricane Carmen. Carmen flooded many large areas, in particular, the parks that are very close to residential areas. Because of the high number of sites positive (over 40%) and the extensive area that had to be treated, the effort to control the mosquitoes hatched by this flooding took over 600 gals. of "T-2" oil. The last floodwater mosquitoe problem of 1974 coincided with the Christmas-New Year holidays when several days of rain necessitated the treating of over 100 rather large areas during the last 2 or 3 days of the year.

Permanent water mosquitoes are an annoyance in New Orleans although they do not cause the problems associated with the floodwater species. Over 2,000 miles were traveled this year inspecting permanent water breeding areas. Of the 1,100 areas checked 12% were positive.

AEDES AEGYPTI REPORT - 1974

Aedes aegypti, the historical yellow fever mosquito, is not a stranger to the New Orleans area. One need not look too far back into history to recall the tremendous yellow fever epidemics prior to and during the turn of the century. Besides the loss of thousands of lives, the economy of the nation's #2 port city was critically curtailed. In recent years protection from yellow fever seems assured (the last major epidemic in the United States occurred in 1905), although increasing international travel may instigate a re-occurrance of yellow fever at any time.

The <u>Aedes aegypti</u> mosquito, after being absent for nearly two decades was found to have re-infested the New Orleans area in September, 1972, during a routine larval inspection. Further investigations during the summer of 1973 revealed the presence of <u>Aedes aegypti</u> throughout New Orleans area cemeteries. This information was the principle factor for formulating an <u>Aedes aegypti</u> program based on the philosophy of obtaining a maximum of surveillance and control while incorporating a minimum of manpower.

With the arrival of two Ford Econoline vans, four "Honda 70" trailbikes, and specially constructed oviposition traps (offering ideal conditions for egg-depositing by the <u>Aedes aegypti mosquito</u>), an innovative surveillance program was initiated by early June, 1974. Based on information obtained during 1973 cemetery inspections, a total of 7 oviposition surveillance routes, consisting of 174 ovitraps, were

established throughout Orleans Parish. Using cemeteries as focal points, cvitrap surveillance was conducted in the Algiers, Garden District, Mid-City, Mount Olivet, St. Roch, and St. Vincent de Paul areas. Due to the frequent arrival of foreign ships, 54 ovitraps were located along the 11.5 mile riverfront area. Besides ovitrap surveillance, junkyard and individual premise inspections were undertaken in areas where phone-in citizen complaints (during periods of low floodwater mosquito infestations) revealed possible undetected Aedes aegypti populations.

Control operations during the year were conducted mainly through ULV adulticiding trucks (see general fogging report). During early August, localized control inside the walls of the St. Roch and St. Vincent de Paul Cemeteries was attempted through the application of Abate larvicide to over 6,000 cemetery vases. In conjunction with the larviciding operations, Honda mounted ULV "mini-foggers" adulticided the interior of the five square block cemetery complex. These localized control operations proved to be quite effective in controlling cemetery-bred Aedes aegypti populations, although premise-bred populations increased (probably due to pressure on the cemetery populations). Future control operations based on these control experiments will be conducted mainly through scheduled ULV fogging truck operations.

Due to the highly domesticated habits of the <u>Aedes aegypti</u> mosquito, a public relations program became mandatory as an integral part of the operations. Lecutres and films were presented throughout New Orleans area Jr. and Sr. High Schools in hope that an informed public will greatly compliment control efforts in fighting the Aedes aegypti mosquito.

Inspections:

Cemetery	469	
Premise	921	
0ther	70	
Ovitraps in operation	174	
Paddles collected & read	3,973	
Paddles found positive	601	% Positive: 15%
Total Aedes aegypti eggs	11,342	

Adulticiding:

Hours		2.7
Gals. of insecticide		3.98
Cost of insecticide	Ś	24.08

Larviciding:

Hours	36
Gals. of larvicide	28
Cost of larvicide	\$ 4.42

AVIATION REPORT - 1974

Aviation activities can best be summarized by observing the Orleans Parish Mosquito Control Adulticiding Zones and Treatment Frequency Illustration (see figure 3). Treatment zone 2 received the most aerial attention and this was expected because this zone is a buffer between the marsh and the nearly populated area. The treatment frequency illustration also points out the fact that the marsh area of St. Bernard Parish penetrates between Zone one and the Algiers Zone, to within six miles of the center of New Orleans. Proper utilization of light traps and truck trap runs with subsequent aerial adulticiding assignments have prevented these very proximate breeding grounds from causing severe annoyance to center city residents.

Aerial activities for 1974 also illustrate an important fact that Orleans Parish Mosquito Control stanchly subscribes to the idea that Aedes sollicitans are the most pestiferous mosquito species in the parish. The small September peak of floodwater mosquitoes was responsible for making that month the most active month for aerial adulticiding during the past year. The Ag-Cat flew 25.9 hours and treated 8,400 acres, the DC-3 flew 8.5 hours and treated 43,000 acres. The small September peak of less than 40 floodwater mosquitoes per trap night (see fig. 1.) was the indicator of a very serious Aedes sollicitans problem. January was next most active aerial adulticiding month with 18.0 Ag-Cat hours, August followed with 15.4 Ag-Cat hours and December was next with 6.43. When the months of January and December are in the four most active aerial adulticiding months, it was truly a strange and difficult mosquito control year.

AVIATION REPORT (STATISTICS)

	AG-CAT		
Hours flown	67.68		\$ 5,076.00
Gals. Adulticide DIBROM 3% MALATHION 8%	5,899 932	gals. gals.	\$ 5,609.70 \$ 752.87
Gals. Larvicide T-2	1,030	gals.	\$ 298.58
Diesel	161	gals.	\$ 49.80
			\$ 11 ,7 86.96
	DC-3		
Hours flown Gals. Adulticide	65.75		\$ 9,205.00
DIBROM 14	196.0		\$ 4,174.80
			\$ 13,379.80

RENTAL AIRCRAFT

Hours flown

147.25

\$ 2,547.97

GROUND ULV REPORT - 1974

Ground ULV units completed treatment on 39 occasions during 1974. The areas requiring greatest attention were the Little Woods section of the City, and the Chef Camps area (see fig. 3). Lesser problems were encountered in the Gentilly section and in Algiers.

Over 3,700 miles (134,680 acres) were treated with 95% Malathion and 2,600 miles (94,640 acres) with 10% Dibrom and HAN for a total cost of nearly 4.3 cents/acre.

A more complete cost breakdown follows:

Total man-hours Hours adulticiding Gallons technical Malathion used Gallons 10% Dibrom-HAN used Total miles traveled Miles adulticided	٨	895.3 633.3 625.6 1,159.5 9,637.2 6,333.0 6,699.25
Insecticide cost Labor cost Oil & gas cost	\$ \$ \$	2,620.03 494.20
Total cost of ground adulticiding	\$	9,813.48

ENCEPHALITIS SURVEILLANCE - 1974

Encephalitis Surveillance is conducted in Orleans Parish on a 12 month basis. Surveillance consists of bleeding wild birds in the summer months when an epidemic is most likely to occur. During the winter when an epidemic is less likely to occur, migratory birds and wild mammals are bled in an attempt to find the reservoir hosts for the Encephalitis virus. All blood samples are checked by the State Board of Health for encephalitis antibodies.

Encephalitis is not primarily a disease of humans, but results from an overflow of virus activity in the bird population. High levels of virus activity in the bird population coupled with the presence of a suitable mosquito vector could result in a human epidemic.

Since there is a 14-day incubation period in humans, the only early warning signal we can use is the virus activity in the bird and animal population. In the event a high percentage of the blood samples were positive we would deploy all available larviciding and adulticiding

equipment into the suspect area. Without the proper mosquito vector to transmit the disease from the bird population to humans, the epidemic would be broken.

This program in cooperation with the State Health Department has been termed one of the most positive examples of preventive medicine the City of New Orleans could practice.

In 1974 a total of 1,244 birds were bled with a total of 20 blood samples positive for Encephalitis antibodies or a 1.6% positive. A total of 51 mammals were bled with 2 positive yielding a 3.9% positive for Encephalitis antibodies. In addition to these, a total of 6 turtles were bled with no positive blood results.

The following is a list of birds, mammals, and reptiles bled in 1974:

Common Name		Scientific Name	Number
House Sparrow		(Passer domesticus)	858
Blue Jay		(Cyanocitta cristata)	8 2 .
Brown Thrasher		(Taxostoma rufum)	1
P i dgeon		(Columba <u>livia</u>)	17
Mourning Dove		(Zenaidura macroura)	20
Redwing Blackbird		(Agelaius phoemiceus)	36
Bronzed Grackle		(Quiscalus versicolor)	8
Orchard Oriole		(leterus spurius)	2
Cowbird		(Molothrus aterater)	2 2 1
Crested Flycatcher		(Mylarchus crinitus)	
Loggerhead Shrike		(Lanius ludovicianus)	5 1
Barn Swallow		(Hirundo rustica)	
Mockingbird		(Minus polyglottos)	2
Red Bellied Woodpeck	er	(Centurus carolinus)	1
Robin		(Turdus migratorius)	2
Starling		(Sturnus vulgaris)	1.
Brewers Blackbird		(Euphagus cyanocephalus)	2
Boat Tailed Grackle		(Cassidix mexicanus)	21
Cardinal		(Richmondena cardinalis)	7
Downy Woodpecker		(Dendrocopus pubescens)	1
Pipit		(Anthus spinoletta rubescens)	1
Carolina Wren		(Thryothorus ludovicianus)	1
Grosbeak		(Guiraca caerulea)	1
Wood Thrush		(Hylocichla mustelina)	1
White eyed vireo		(Virio griseus)	1
Rufus sided Towhee		(Pipelo erythrophthalmus)	1
Nutria		(Myocastor coypus)	28
Raccoon		(Procyon lotor)	17
Rabbit		(Sylvilagus aquaticus)	6
Snapping Turtle		(Chelydra serpentina)	3
Musk Turtle Migratory Waterfowl		(Sternothaerus odoratus)	6 3 3 168
Birds	1,244		
Mamma 1 s	51		
Reptiles	6		

SOURCE REDUCTION REPORT - 1974

Dragline activities in 1974 began in area X-4, a marsh area of approximately 700 acres located less than seven miles from downtown New Orleans. The project was abandoned in early February when we learned the area was to be a future hydraulic spoil site for a Corps of Engineers dredging project.

The machine was then moved to area Y-15, a tidal marsh area of approximately 300 acres located adjacent to the Venetian Isles residential community in eastern New Orleans. The area is approximately 14 miles from downtown New Orleans well within the flight range of the saltmarsh mosquito. The area was already encircled by man-made imbankments of one kind or another which made the area a perfect mosquito breeding site.

Our plan was to dig a system of access ditches throughout the area, utilizing the natural ponds as a focal point. From these ponds the access ditches radiated outward into the previously isolated breeding sites. Work continued in area Y-15 until late August.

We then moved to area X-30 (this is another tidal marsh area directly across the Chef Highway from area Y-15). The machine operated in this area for the remainder of the year. The work done in this area consisted of redigging of our old ditch system. The initial ditches were rapidly becoming overgrown by the marsh vegetation.

The compatability of mosquito control, through consciencious water management, and wildlife conservation is becoming increasing more evident in area X-30. The area previously was a semi land-locked tidal marsh (high tides could and did periodically flood the area). The area near Hwy. 90 on the North was a mixed spartina and distichiles spicata marsh community with numerous swales and slight natural ridges which prevented water movement into the more natural tidally influenced marsh community at the southern end of the area. In numerous inspections of the area heavy mosquito breeding occurred regularly, but little wildlife was observed. Since construction of mosquito control access ditches a reversal of the previous marsh cycle has occurred. Now it is common to observe rabbits and nutria on the ditch banks and unusual to find the once numerous mosquito broods. Numerous species of fish occur in the ditches and three trappers, worked the area this winter.

Backhoe activities in 1974 were down considerable from the previous year. This was due to the operators being assigned to work on the dragline because of breakdowns and also to assist the dragline operators in the field operation. Thus when one backhoe operator is assigned to work on the dragline that leaves only one backhoe operator, and it is against our policy to send one heavy equipment operator in the field alone.

Total Hours	747.5
Total digging hours	419.3
% digging time	56%
Total linear feet	31,750
Total cubic yards	18,471.9
Cost of Fuel and Oil	\$ 188.15
Salary cost	\$ 6,279.85
Miscellaneous cost	\$ 603.21
Total cost	\$ 7,071.20
Cost per linear foot	\$.22
Cost per cubic yard	\$.38
Linear feet per digging hour	75.7

FIELD OPERATIONS - 1974

Adult surveillance was severly hampered this year due to broken equipment and lack of equipment. Both truck trap operation and CO landing rates were reduced due to the above reasons, leaving the twice weekly New Jersey light trap collection as the main indicator of adult density brought to the lab for identification and evaluation.

During March there was a one week Mosquito Control Workshop held at Delgado Jr. College. Nearly all Mosquito Control personnel attended this meeting which included information concerning recognition of adults and larvae, factors affecting permanent control, and proper ways to carry out surveillance methods. In addition to this training program, there was a Pesticides Safety course held at Delgado. This was sponsored by Delgado Jr. College and the U.S. Department of Labor.

CONTROL OPERATIONS REPORT

Total man-hours spent on control operations	16,988.00 hr.
Total number of light traps collected	1,9 <u>5</u> 6 Traps
Total number of landing rates taken	7,923 L.R.'s
Total number of mosquitoes collected (L.R.'s and	280,419 Mosquitoes
ligh t tra ps)	
Total number of gallons of larvicide used	4,398.4 Gallons
Total number of miles traveled	58,363 Miles
Total cost of operations	\$ 62,908.9

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