A HALF CENTURY OF PROGRESS IN THE FIELD OF MEDICAL ENTOMOLOGY IN THE STATE OF FLORIDA

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Florida could be classed as the Crown Jewel of the North American Continent, in that it stands out as a shining light by the brilliance of its sunshine and by the pointed fact that it is a peninsular, giving life to a luxurious flora and to an abundant and unique fauna.

It would seem natural that the Great Creator should have guided the first explorers to the land of sunshine and flowers with all of its splendor and beauty which became a mecca for the naturalists in the early days following her discovery.

The cradle of American democracy with its pearly white beaches bathed by the blue-green waters of the briny deep surrounding the great paradise now known as Florida was also to experience the bitter with the sweet.

The early settlers were to suffer crippling losses from the stings of mosquitoes which caused the people to stagger and fall under the yoke of malaria; to have their bones seemingly break from the scourge of dengue fever and to go into panic at the mention of yellow fever, all known today to be transmitted by mosquitoes.

Malaria, under a variety of names, has been a terrible scourge to the people of Florida. Until very recent times it was, in fact, the pestilence of Florida. By coincidence, or otherwise, the early settlements were almost entirely within what was later defined as the “Malaria belt” of the State. Tallahassee, the capitol, was in the midst of this region. The following statement from an early work (“Views and Recollections of North America” by the Count of Castienau, 1842) reveals what malaria meant to the Tallahassee of a hundred years ago. “But unfortunately in opposition to these numerous advantages there are the greatest plagues that can afflict a new settlement; and unhealthful climate; every year bilious fevers of a most dangerous nature spread consternation in the whole region. Then all the shops are closed, the fear of the epidemic and the stifling heat caused the planters of the neighborhood to leave the city, and all the inhabitants who can afford the expense of this kind

1 Presidential address given at the 33rd Annual Meeting of the Florida Entomological Society, December, 1950.
go to the northern part of the United States to seek a more salubrious climate; the merchants take advantage of this season to go to New York or Philadelphia to place their orders, and the planter goes to Niagara or Saratoga Springs to display his luxury and spend in three months his year’s revenue.

“However, although the climate is dangerous for strangers at all times, the most insalubrious months are August, September, October, and November; then no one can be sure of escaping the plague, neither the planter who has been settled in the country for years, nor the negro born in the midst of the miasma of Carolina or under the burning sun of Georgia. The comparative extent of the huge cemeteries is a sad warning for one who, charmed by the beauty of the sight, would want to establish himself in this region.”

The insalubrious situation prevailed in a vast number of Florida towns and rural areas until as recently as twenty years ago. Malaria, the greatest of debilitating diseases, caused misery, poverty, and general economic distress on a scale hardly to be appreciated by the people of today’s Florida.

The story of yellow fever in the State is one of fright and panic which gave birth to the present State Board of Health. The epidemic of yellow fever in Fernandina and Jacksonville in 1877 is inscribed in the archives of the rich history of this State as the greatest holocaust to ever strike the State. Time does not permit to review in detail this great catastrophe but it can be said that a census of Fernandina, taken on September 20, had shown a population of 1632, with 1146 cases of fever reported. There are 24 deaths, a mortality rate of about 5½ percent of the total population. Among the white people the mortality rate was about 16 percent while among the colored it was less than one percent.

The direction of approach to the control of malaria was recognized in Florida as early as 1900 by Dr. Porter, the State Health Officer, when he stated, “It was observed that the attacks (of malaria) were more than usually fatal along the river bottoms, marsh lands, and in the flat woods country.—It now is seen that it is not the germ itself which rises from the soil or water but the carrier of the germ.”

However, despite this early recognition of the means at hand for controlling malaria, no concerted effort was made in the direction until World War I period. At this time, drainage and larvicidal measures were introduced at Camp Johnston in
a joint effort of Army, U. S. Public Health Service, and State Health Department as a part of the general sanitation program around military establishments.

After this initial start, the State Health Department undertook its first malaria control project, in the City of Perry, a typical malarious community in Florida. At that time it was one of the largest projects of the kind in the country and involved the removal of 47,000 cu. yds. of earth for drainage canals and ditches at an expenditure of $28,000. The cost of the project was borne by the City of Perry, the county of Taylor and the Burton Swartz Cypress Company with the State Board of Health supplying the technical supervision. A subsequent letter from the lumbering plant stated that they had been more than repaid for their share of the cost by increased output resulting from the better health of their employees.

The first great forward step in the control of mosquitoes in this State was the organization of the Florida Anti-Mosquito Association in 1922. This organization has performed a momentous duty in the promotion and coordinating of the mosquito control activities in the State.

Another milestone was reached in 1931 when the Rockefeller Foundation established a Malaria Control Research Station at Tallahassee, Florida, to work in conjunction with the Florida State Hospital at Chattahoochee and the Florida State Board of Health. This station from 1931 until its termination in 1947 performed work in the malaria field of inestimable value not only to the State of Florida, but to the world as a whole.

Florida received further recognition in the mosquito control research field when the United States Department of Agriculture, Bureau of Entomology and Plant Quarantine established in 1932 a mosquito research station at Orlando which is still functioning today and has received world-wide recognition. This recognition was quite evident during World War II when practically all of the research work pertaining to insects of medical importance was carried out in the Orlando laboratory. The work of this station has been of great value to the mosquito control districts and also the citizens of Florida. Their counsel and advice, as well as the investigations which they have carried on in the field of mosquito control has assisted greatly in alleviating diseases transmitted by mosquitoes in Florida as well as helping those in charge of mosquito control work to carry
out more effective and economical control procedures in the State.

In 1941 a Bureau of Malaria Control was established in the State Board of Health to study and make recommendations for controlling malaria in the State. The Bureau of Malaria Control gave way in 1946 to the present Division of Entomology whose scope of activity was to cover all activities pertaining to all arthropods transmitting human diseases, or annoying man by their bites.

Next to the mosquito, the rat flea has brought about a considerable blight on the State in recent years. In 1920, 10 cases of plague were reported in Pensacola. During this outbreak, seven deaths were reported. No cases have been reported in the State since this outbreak. Endemic typhus fever began to appear in 1918 and by 1944, 483 cases were reported with 32 deaths. In some of the larger cities, 83 percent of the rat population was found infected with typhus.

It can be said that great strides have been made in the eradication of human diseases transmitted by mosquitoes. It has been over fifty years since a case of yellow fever was transmitted in the State. The last big epidemic of dengue fever occurred in the early thirties. The City of Miami and Tampa both had epidemics in 1932. The last evidence of transmission of malaria occurred in Naples, Florida, in 1948.

It would seem safe to say that the disease malaria has been eradicated from the State. It must be remembered, however, that as long as malaria is alive in other southern states and also in the world, the disease could spring up in a localized area in the State.

The eradication of malaria from the State, in my opinion, is one of the classic accomplishments which has occurred in the State in the past 50 years. When we look back as recently as 1929 and find that 470 individuals died from the malady and for every death there is an estimated 400 cases, it can be seen that the disease malaria cost this State a tremendous sum.

The disease endemic typhus is being brought under control in Florida and in a few more years it may be completely eradicated from the State. This year up to the present time there have been only 34 cases reported. The main tool that has been so effective in eradicating malaria and bringing typhus under control is DDT.
The one great problem which still confronts the State is the mosquito and human-biting fly problem. This is a gigantic problem and one that affects the economy of the State, not only from the standpoint of transmission of diseases to animals, but also by annoying and destroying animals by their bites. The greatest economic loss, however, brought about by mosquitoes is their annoyance to humans and most especially to summer tourists who come to the State to enjoy our wonderful beaches and the many other great attractions found in the State.

It is true that great strides have been made in organizing mosquito control districts. At the present time there are 19 mosquito control districts in the State. The counties and State are spending approximately one million dollars a year on mosquito abatement.

There is a tremendous amount of investigational work which must be performed if we are to find a solution to this mammoth problem. We do not have the tools at our command today which would enable us to even consider eradication of some of the pest species of mosquitoes. In fact, we do not have tools which are sharp enough at times to give us satisfactory control and until we find ways and means of economically controlling pest mosquitoes, the State will continue to lose thousands of dollars each year in driving people from the State, most especially during the summer months.

The citizens as well as the visitors who come to the State will continue to be annoyed by the bites of mosquitoes and other arthropods, but there should be some consolation to the individual to know that their chances of contracting an arthropod-borne disease in Florida is considerably less than any other southern state or any other state having similar climatic conditions.

The State, which was at one time considered a teeming jungle full of mosquito-borne disease, is now becoming the haven for old folks as well as a winter and summer playground for many people from all over the United States as well as from the countries to the south of us. Yes, I think we can say that it is becoming the nation’s choice.

We must never relax our efforts in the field of medical entomology, but should continue to try and develop more effective means of controlling arthropods of medical importance so that Florida may become not only disease free, but pest free as well.