

## ARTICLES

PRESIDENTIAL ADDRESS: THE BOTTOM LINE<sup>1</sup>

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My childhood years were spent in a small town on the East Coast of Florida. Salt marsh mosquitoes were accepted as a way of life during much of the year, with May through September being the peak months. This was before the days of air conditioning and many department stores had palm fronds made into what were called "mosquito brushes" hanging at their screen door entrances. It was the custom to brush as many mosquitoes as possible off of your body prior to entering. Often there were smudge pots inside the store that would emit a foul odor as the proprietor attempted to keep these insects at bay. I recall seeing lady shoppers who had wrapped their legs with newspapers before putting on their stockings so that mosquitoes could not bite their legs. My father owned a citrus grove near a salt marsh and he deliberately scheduled as little work as possible in the grove during the warmer months because of staggering mosquito populations that were there.

While working with my father in the grove, I witnessed a mosquito control event that I will never forget. During the early 1940s, the United States Navy utilized the local municipal airfield as a training station for new pilots. They, like the rest of the community, suffered from mosquito invasions. In the mid-1940s, DDT became available and the Navy equipped a torpedo bomber with a spray system to protect the air station. Since the flight range of these insects is so great, it was necessary that the Navy treat a considerable area surrounding the airfield. One morning we noticed the spray plane making long, low passes near my father's grove and it eventually sprayed the grove. The hordes of mosquitoes that had been plaguing us suddenly disappeared. It was the closest thing to a miracle we had ever observed.

The ability to control mosquitoes over large areas, inexpensively and effectively, had become a reality and has forever changed mosquito control. The small town of my childhood has grown into a high density residential and resort community. I am confident this dramatic transformation was possible because of two major contributors, air conditioning and mosquito control.

Mosquito control in this country has become an accepted and expected service by the citizens who reside in mosquito-prone environments. Our society demands this quality of life as well as freedom from diseases vectored by mosquitoes. My observations around the country in recent years suggest that mosquito control programs are alive and well, particularly those that depend on concomitant efforts against economic or pest mosquitoes as well as disease vectors.

Today's mosquito control programs have been provided an unusually varied and successful array of control tools. Third generation chemicals, application techniques, and equipment have largely resolved environmental concerns that were associated with earlier control efforts that did have some undesirable trade-offs. These new tools are the direct result of an expressed need and serve as a fine example of cooperation between the academic, commercial, operational, and regulatory interests. Even though tremendous strides have been made in mosquito control over the past several decades, the future may make them pale in comparison.

It does appear that world-wide problems with mosquito-borne diseases are not enjoying the optimism that has been welcomed in the United States and Canada. I understand malaria is making a resurgence in many areas of the world which is going to require a new commitment by the peoples of the world if it is to be successfully combated. With the introduction of *Aedes albopictus* into the United States, certainly the potential for dengue and possibly other mosquito-borne viruses will have to be

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readdressed in this country, if not all of the Western Hemisphere. Also, the decreasing role of the Federal government in mosquito control, particularly in vector-borne disease work and related research, has generated concern.

These are some of the challenges that face us in the future; however, I am truly optimistic about how these and many other problems will be met and resolved. I sense a new spirit in the membership of the American Mosquito Control Association. There is a refreshing newness being mixed with the status quo that I feel will become a driving force for future sustained growth that will be international in scope.

A social forecaster, John Naisbitt, published a book in 1982 entitled *Megatrends*. In his book he reflects on the changes that are occurring in our society. He states that the United States has gone from an Industrial to an Information Society. Other observations are that business structures, at least those that are more successful and competitive, have altered their management practices from Hierarchies to Networking, and Centralization is being replaced with Decentralization. He describes Institutional Help as giving way to Self-Help efforts, and that Either/Or decisions are being modified to those with Multiple Options.

Even with a casual look at mosquito control in this country, we see many of these changing concepts already in place.

Federal government or Industrial Help, if you will, has in large part already given way to state and local government Self-Help programs. Throughout the country you see more local abatement programs staffed with professional personnel to assist in local need research projects. Some have laboratory facilities that equal many research only organizations.

Networking and information sharing have always been one of the hallmarks of the AMCA. A regional director at a board of directors meeting a few years ago stated, and I feel correctly, that the reason for the continued and demonstrated strength of the AMCA is that it is not an elitist organization but rather one open to the entire spectrum of mosquito control interests. The academic, commercial, operational, political, regulatory functions and many other facets are all afforded an opportunity to be involved in the many endeavors related to mosquito control. This integration of varied disciplines and interests has helped to put into place the most efficient and successful mosquito abatement efforts in the world.

Some persons have referred to the total mosquito control structure, from top to bottom, as an inverted pyramid. The broad upper structure represents the academic community, commercial suppliers of equipment and mate-

rials, research institutions, regulatory agencies and other participants. Obviously, the operational program would be the beneficiary or victim of such a hypothetical structure and located at the bottom. Therefore, I would like to paraphrase the position of the operational mosquito control program in such a structure and give you one person's view from the so-called bottom line.

Certainly, the mosquito control programs in North America have profited from this structured interchange. The research and development of things like ultra-low-volume spraying, biorational larvicides, and new equipment designed specifically for mosquito control needs in recent years are good examples of this team effort.

There is a perceived notion that regulatory agencies always take an adversary position towards mosquito control; however, I think the networking of this pyramidal structure has certainly encouraged close and open cooperation, particularly at the Federal level. The present AMCA and EPA project of documenting operational practices and making this information available on a computer data base is a fine example of such cooperation and represents the trend towards mutual Self-Help. I also feel this information will demonstrate that mosquito control methodology does not fit a standard mold.

Herein lies one of the faults of top-to-bottom thinking. Organized, professionally managed mosquito control programs are very much aware of their control options and limitations. That is their business and no other agency or interest can appreciate or understand their problems or solutions as well. However, there is a tendency to over-standardize operational procedures and generalize about mosquito control philosophies. Mosquito control is composed of Multiple Options and not Either/Or applications. Mosquito control in California employs an entirely different approach in managing problems than programs in Louisiana and Florida. That is because they have different problems. What they do have in common is that they are all successful. I mention this because some mosquito control programs are experiencing considerable pressure from organized citizen groups to force specific control methods into use. These Either/Or mentalities defeat the purpose of comprehensive mosquito control or integrated pest management practices.

To me the striking observation by Naisbitt is that this country is already an Information rather than an Industrial Society. The reason we attend meetings like this is certainly a confirmation of this trend. Mosquito control

people are great believers in communicating with each other. What is perhaps more satisfying is we tend to share our failures as well as our successes in an effort to warn others of potential problems. I feel we have very good information exchanges. Publicly, out of the confines of mosquito control, I am not so sure.

Public education and relations need a lot more attention by all of us in mosquito control work. After the DDT era and the bad press that was associated with chemical control efforts, I suppose it was natural to develop a defensive attitude but I do not feel apologetic about the use of chemicals in controlling mosquitoes. First, all new technologies have problems. It is part of the human experience to begin at the beginning. Secondly, mosquito control has profited from its experience and today's third generation chemical control options can be safely applied. Many of the larvicides can be used in an ecosystem without any environmental concern. Mosquito control needs to "Accentuate the Positive" as Johnny

Mercer's song stresses. The public needs to know in spite of the chemophobia that persists today, that mosquito control is a concerned ally and practices responsible environmental husbandry. Advances in technology are going to make major contributions in the fight against mosquitoes; however, without parallel efforts in educating the people to be served, these advances may be handicapped. The successful follow-through of any mosquito abatement program is determined solely on its ability to safely implement it in the field and maintain the support of the public it serves.

In conclusion, I would like to predict that the observation made by my father and me in the mid-1940s will be repeated. There will be many more mosquito control miracles.

#### *References Cited*

- Naisbitt, John. 1982. *Megatrends: Ten new directions transforming our lives*. Warner Books, Inc., New York.