

ARTICLES

PRESIDENTIAL ADDRESS: MOSQUITOES AND THE QUALITY OF LIFE¹

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During this year I have had the opportunity to attend the meetings of 10 state or regional organizations, whose members deal with the control of mosquitoes and related vectors. It has been a golden educational opportunity for a professor, one certainly not offered at a university, to see the variability in pest/vector problems and approaches to their solutions, the variation in species significance, and the various levels of contribution by agency managers, scientists, trustees, industry representatives and younger field workers, all discussing their views and efforts. Yet common to all of these meetings was a sense of professionalism and dedication. There are at least 23 such associations in the U.S. and Canada, including the Michigan Mosquito Control Association which held its organizational meeting in July 1986. My sampling of 10 has convinced me that indeed we are a broad-based profession, with careers, not just jobs, in mosquito and vector control.

However, as visible as we are to each other, I sense that our profession is latent to the public, to whose quality of life we contribute. At the meetings I attended, rarely were efforts made, or *if made* were they successful, to tell the public about the meeting by way of the news media. For a profession whose major efforts are to prevent nuisance and disease, I think this is one of our shortcomings. During this year, three people not in our profession convinced me that this was true. Admittedly this is a very small poll, but their comments deserve recording. Two of these were lady senior citizens, on an extended bus tour in Columbus, Ohio. Their overnight lodging at the motel coincided with the 2-day 21st annual meeting of the Ohio Mosquito Control Association in October 1986. I sat next to these ladies at breakfast one morning and we began a pleasant conversation, which developed to "where was I from and what was I doing in Columbus"? My response, that I was attending a mosquito meeting, evoked surprise. They had never heard of mosquito control, and further-

more, they *could not conceive* that a group of people were spending two days discussing mosquitoes, the problems they cause and the efforts to control them. Had these two senior citizens been teenagers, I would have attributed their lack of knowledge about mosquitoes to their youth. But for senior citizens, I was in turn surprised. The call for boarding their bus was announced, and I could not question them further. Where they have been living their lives in the absence of mosquitoes and similar pests remains a mystery; possibly they have resided in areas served by efficient but invisible control efforts. I am sure that many AMCA members have had similar experiences with the public when we identify our profession in mosquito and vector control.

One month ago, at the 12th annual meeting of the Mid-Atlantic Mosquito Control Association, I listened to the third citizen, Rev. C. W. Cashman III of the York River Baptist Church. In delivering the invocation for the opening session he likened his ministry to the profession of mosquito control; both are servants of the public and both must reach out to people. "By your deeds, you are known", he stated, and I nodded my agreement!

Our deeds, contributions, and profession *must be made more visible*, especially when many of our efforts are preventative, i.e., against the eventual appearance of the pest and vector adult. Visibility has various levels, ranging from the work level to the professional level. I am not proposing greater visibility at the work level; I do respect the fact that actual control efforts are often best accomplished with as little visibility as possible. However, this "cloak and dagger" approach should not extend to our profession at the local, state and national level. I personally know how difficult it is to deal with the news media, whose representatives telephone at the busiest times, sometimes wanting a prediction about the coming mosquito season, and sometimes, without sufficient biological training, failing to produce correct script about mosquitoes, their significance and control. Also I should not overlook the TV crews which want to come today, to interview and videotape laboratory and

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field events dealing with mosquitoes for tonight's news program. The newsmedia with all its elements is a competitive industry, and, however demanding, incomplete and imprecise, we must recognize this industry as the major conduit to the public, in making our profession and efforts known.

In addition to the general public, we must increase our visibility to other agencies and associations that *directly* affect us, can help us, and influence our future. The appearance and spread of *Aedes albopictus* in this country has not only stimulated our profession, but *importantly* has set a basis for cooperative interaction with the "used tire" industry and its associations. This was very evident at the special CDC meeting in January, 1987. Of course, in places such as California and Ohio, our members and state associations have already been involved in developing state legislation regarding used tires. Recently in California, Assembly Bill 946 regarding used tires, their importance and sale, has been introduced. This has been with the support of the tire industry. A few weeks ago, Ms. Anne Evans, acting president of the International Tire Association, provided me a copy of proposed state legislation in Connecticut concerning "mosquito breeding in junk tires". Her cover comment on the legislation was "How is this for a start"? We should continue these cooperative efforts. Such organizations can be friends and supporters of our profession.

We must also expand our visibility with the federal government and elected officials. At the CDC meeting in January, the intent of which was to develop a national policy on *Ae. albopictus*, used tire movement and the importance of other foreign mosquito species, a group of AMCA members and officers discussed the situation and agreed that all AMCA members should be made aware of developments. The February 1987 *AMCA Newsletter* contained such information. You also should be aware of the recent valiant efforts of Dr. George Craig, the next AMCA president, to marshal members to write comments to federal appropriation subcommittees urging at least some additional CDC funding this year. The written comments were numerous, but possibly they were "too late". The outcome may not be favorable, but we must continue to make comment to such elected officials. The outcome can aid our profession! We also must make comment to those who are considering amendments to FIFRA, the Federal Insecticide, Fungicide and Rodenticide Act. Currently, this Act does not adequately recognize the value and use of pesticides in protecting human health. With the counsel of Bill Hazeltine, and the AMCA Scientific and Regulatory Liaison Committee that he chairs, I have in

March 1987 sent my written comment to appropriate congressmen and senators.

There are other matters in which our profession should seek closer encounters. Since the 1970s, AMCA has had a special representative to the National Mosquito Control, Fish and Wildlife Committee. While in early years this national committee was productive and involved our AMCA representative, in recent years this national committee has apparently not met, functioned, or sought AMCA input. It should have! Last November EPA announced its plan for the implementation of the Endangered Species Act, under FIFRA, which provides for consultation with the Fish and Wildlife Service. In 1982, EPA initiated a review of pesticides with common use patterns, which could be grouped or "clustered" by use. Eight such clusters were announced last November, including a mosquito larvicide cluster. Fortunately, for AMCA and for mosquito control agencies in affected states, John Kliever, an AMCA member and an employee of the Benefits and Use Division of EPA, was alert and urged AMCA to send representatives to Washington for a special meeting with EPA officials developing the endangered species plan and the mosquito larvicide cluster. Harold Chapman, Oscar Fultz, L. A. Williams, Bruce Francey and John Combs did attend the meeting on February 9. The outcome of the deliberations is not yet known, especially relative to the use and timing of pesticides for the prevention of mosquito-borne disease in areas shared by the endangered species and *dangerous* mosquito species. Although the Federal Endangered Species Act may be viewed as limited, individual states may adopt more restrictive legislation and indeed add species viewed as endangered at the state level. We individually and collectively must be alert to this situation; eventually adulticides may be included.

The subject of endangered species is the concern of other scientific organizations. One such organization is the American Institute of Biological Sciences, dedicated to the advancement of the biological sciences and their applications to human welfare. The subject of endangered species currently is high on the AIBS agenda. The AIBS Council has representatives from various professional societies and associations, including the Entomological Society of America, the Poultry Science Association and the Weed Science Society of America. Possibly our organization should consider the value of AIBS membership, thereby offering us the opportunity to have input on this subject and other concerns; we would also learn of the broad concerns of the scientific community on biological diversity and the greenhouse effect/ozon depletion. This is just one example wherein our

profession at the local, state and national level should be alert for opportunities to interact with such scientific groups.

It is difficult to predict the future of mosquito/vector control and the public's perception of its value to their lives. However, as a teacher, I do have some indication. Each spring I teach a course, *Insects and Man*, to 175 undergraduates representing 30 different curricula. It is a 3 credit elective course, broadly covering entomology and the significance of insects to humans, but including basic knowledge about 13 insect orders. There are four take-home projects involving live insects, the American cockroach, the *Vanessa cardui* butterfly and a mosquito, either *Culex pipiens* or *Aedes triseriatus*. For the mosquito project, students study larval adaptation to stimuli, the direction of larval and pupal swimming, and determine the sex of the emerging adults. For full project credit, they must kill an adult mosquito and affix by scotch tape the carcass to the project report. With these take-home projects, the students are in close proximity to live insects, an experience rarely offered in precollege education. Also the students act as missionaries, making insects more visible to their peers and indeed promoting course registration. Course lectures include discussion of the impact of insects on food and fiber production, and three lectures consider insects and disease transmission. Subsequently, after lectures on natural and applied control, two entomology graduate students debate the "pros" and "cons" of insecticides, and the class is polled individually by ballot for their position and reasons. Position is rated numerically from 1 to 10, 1 being strongly "pro" and 10 being strongly "con".

In 1986, the student opinion was not normally distributed, but skewed toward the "pro" position. The mean was 4.3, but the mode, the most common response, was 3. The major reasons for a "con" position were "contamination of the environment" and "health risks", but the most common reasons for a "pro" position included the words "disease" and "quality". Invariably, "quality" referred to the quality of their lives. In 1987, to more exactly determine the influence of the debate on the opinion, students were polled pre- and postdebate. In both cases, distribution was again skewed toward the "pro" position (mean/mode predebate 5.04/4, postdebate 4.47/3), with reasons similar to those of 1986. The shift in pre- and postdebate opinion suggests that the debate itself sufficiently focused on issues to influence opinion. In 1988, students will be polled at the beginning of the course in order to determine the effect of the course information presented before the debate.

There are various aspects to consider in interpreting the results in 1986 and 1987. But from

the results, I do believe that, given information and points of view, these future citizens will support activities of professions such as ours, which contribute to human comfort and health.

These young people are also a source of future members of our profession. Our profession must be made more visible to such young people and earlier in their college careers. I often receive posters and fliers describing careers in biology for students. One recent poster identified about 100 careers for the biology major; vector or mosquito control was not mentioned. But PCO (pest control operator) was! To me, vector control is not PCO! We may contend with regulations, but we are not lawyers; we may use chemicals, but we are not chemists! Dealing with insects, indicator plants, hosts, reservoirs, disease organisms, parasites, predators, their ecology—we are "Biologists". We must better reveal the presence and nature of our "biological" profession to young people. The 1983 report on Manpower Needs and Career Opportunities in the Field Aspects of Vector Biology was developed from a workshop chaired by George Craig and involving many AMCA members. Certainly this report justifies the need of training future members of our profession.

I believe that the general public, given information about the attention we give to its comfort and health, supports our profession and its activities. It is notable that the periodical *Consumer Report* in 1986 celebrated its 50th anniversary of successfully serving the public interests, without paid advertising. We must tell these same consumers of our service in controlling nuisance and vector species, in many areas for *more than 50 years*. In addition, with vectors whose immature lives are spent in one of our greatest and important resources, water, we must convey to all that we not only respect this resource and the air above it, but also for the benefit of all use our expertise to contribute to the quality of life. The selection of "Quality of Life" as a theme for the 52nd annual meeting is meant to remind us and the public we serve that this is our professional goal.

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