**Origin and Early Years of the Livestock Insect Workers Conference**

*As recorded by Roger Drummond (USDA, Kerrville) for the 61st Annual LIWC in Savannah, GA*

1. USDA entomology research on insects in Texas.  In the 1930's the USDA Bureau of Entomology and Plant Quarantine (BEPQ) established research laboratories at Dallas, Menard and Uvalde, TX, where entomologists studied the biology and control of screwworms and blowflies, cattle grubs and horn flies. Lice, mites and head grubs were studied at Sonora.

2. The screwworm, *Cochliomyia hominivorax*, has been recognized as one of the most economically important insects that affect livestock in the western hemisphere. Females lay eggs on wounds, scrapes, etc. on living animals. If these wounds were not treated, the infestations expanded to the size that would cause the death of the animal. Fly traps did not collect enough flies to reduce the population.

3. Screwworms and other blow flies were a subject of research at the Menard site. A diet was developed for the larvae and a laboratory colony was established (in the stink house).  Drs. E. F. Knipling and R.C. Bushland were stationed at Menard and in 1937 observed the caged female flies appeared to mate once. They speculated that the introduction of massive numbers of sterile flies released into natural populations could lead to the eradication of the species.

4. Most of the scientists working for the USDA were given military assignments in World War II.

5. After the war, BEPQ research on livestock pests in Texas was combined into a single laboratory, the Livestock Insects Investigations Laboratory in Kerrville, Texas. The laboratory consisted of 8 Quonset huts, a small office building, and the "stink house" which had been moved there from Menard. The "stink house” contained screwworm colonies and its title effectively describes the odors that came from it. It was dedicated as a Texas Historical Site in 1972.

6. Dr. Bushland became investigations leader in 1951.  He continued his research on screwworms and determined that when screwworm pupae were exposed to certain levels of radiation, the male flies that emerged, when mated with normal females, caused the females to lay eggs that did not hatch. This research led to the eradication of the screwworm from North and Central America.

7. At Kerrville, ARS (superseded  BEPQ) entomologists conducted research on a number of arthropod pests of  livestock, including cattle grubs, the most economically important pests of cattle in the northern hemisphere.  The life cycle of cattle grubs made their control very difficult. The only control technology, spraying rotenone into the holes in the hides of cattle created by the cattle grubs, was expensive, labor intensive, and had to be repeated several times during the period cattle grubs (larvae) appeared in the backs of cattle.

8. At Kerrville, entomologists conducted research to find chemicals that when given to animals orally or dermally circulated through the animal’s system and were toxic to the arthropods feeding on or in the treated animals. Many chemicals were given to guinea pigs infested with arthropods in this screening test. One insecticide discovered by this process was Dow ET-57 (later developed as ronnel or Trolene). This systemic insecticide was administered orally to Government-owned cattle.

9. Cattle were treated during the period cattle grubs were migrating through the animals’ bodies from the oviposition sites on the lower legs of cattle to the backs of cattle where the cattle grubs created their breathing holes. The treatment was very effective. The first practical treatment to prevent cattle grubs from appearing in the backs of cattle was available.

10. This development led to the calling of the first Animal Systemic Insecticide Conference (predecessor of the LIWC) in the summer of 1956 at Kerrville. At that meeting members of the Kerrville staff including entomologists, chemists in the Pesticide Research Branch of the Entomology Research Division, and veterinary toxicologists of the Animal Disease and Parasite Research Division presented data on the effectiveness, safety, and tissues residues of Dow ET-57.  Additional data were presented by the entomologists and chemists of the Dow Chemical Company.

11. The organizers of that first meeting called the meeting to order in the summer so that the attendees could have the data from the first tests with Dow ET-57 that were completed. The heel fly cattle-grub life cycle in the hill country area of Texas is the earliest in the year so those data were available at the meeting. Attendees from the different states could see and hear the data from the Kerrville tests, obtain samples of Dow ET-57, return home, and treat cattle before the start of warble appearance in the backs of their local cattle.

12. The meeting was designed so that there were no presentations of formal papers as was the case with national scientific meetings. Rather, attendees who had data to present were requested to prepare for distribution "handouts" that contained their data so they could informally describe the results of their studies, which would allow time for the group to have open discussion of their data.  The meeting was held as a "committee of the whole" in that all the participants could discuss the data, and there was freedom for interactions among all participants.

13. At this first meeting, chemists and entomologists of the Dow Chemical Company were full attendees and were able to add data and discussion to the subject.  This relationship of research, extension, and industry continues to prosper thru this present meeting.

14. To save time and encourage further discussion, attendees ate a light lunch together at the meeting site at the lab.  One afternoon the attendees had a tour of a local cattle ranch to see the facilities and have an open time to meet and talk outside the meeting room. That evening Dow Chemical hosted a dinner for the attendees at a local dance hall and meeting facility, the Casa de Lomas.

15. At the end of the meeting, the attendees agreed to meet back in Kerrville in the summer of 1957 so they could present and discuss the data they had accumulated on the effectiveness of the treatment which was a large bolus that contained Dow ET-57. A bolus contained enough chemical to treat up to a 400 pound calf. Larger cattle were treated with 2 or more boluses to obtain the effective dose level.

16. During the year entomologists at the Kerrville lab tested a new systemic insecticide, Co-Ral (coumaphos). This product, provided by the Bayer Chemical Company, was applied as a spray to cattle during the period cattle grub larvae were migrating from the oviposition site to the back and was found to be very effective in preventing the formation of warbles in the backs of cattle

17. The second meeting was held in Kerrville in the summer of 1957.  It was so well attended that the meeting site was moved from the lab to the Casa de Lomas building. Attendees, following the format at the first meeting, presented data on Dow ET-57 and also on Co-Ral.  At that meeting, the problems caused by the appearance of face flies, *Musca autumnalis*, in the United States were brought up as a new and potentially economically-important arthropod parasite affecting cattle. At that meeting the attendees decided to move the meeting site, responding to invitations from livestock entomologists in several states, and to open the discussion to face flies and other arthropods affecting livestock.

18. The third meeting was held in the summer of 1958 at Kansas State University.               .