Founders Award Address
Skeeter Werner
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Penticton, BC

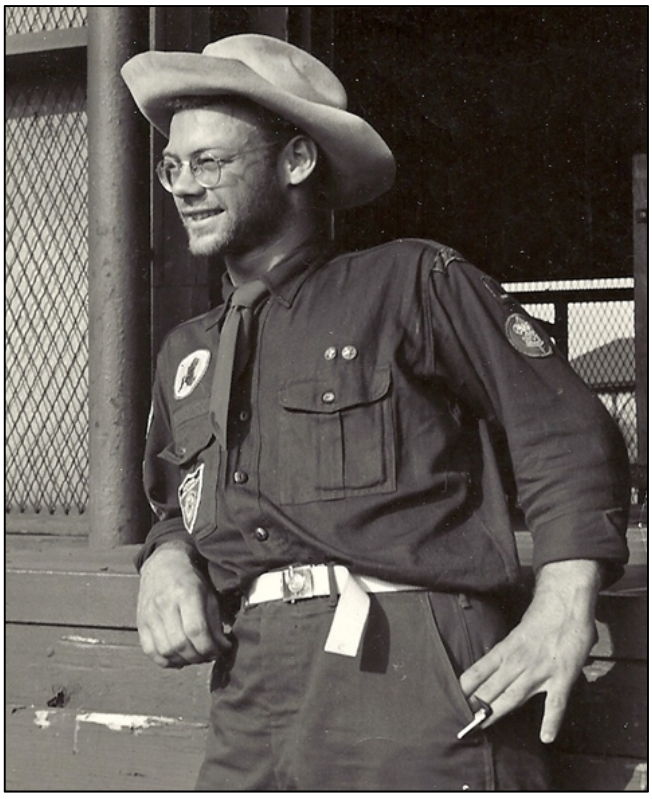
First, let me thank Steve Seybold and Andy Graves for nominating Ed Holsten and myself for this prestigious award. After being retired for 15 years, I never thought I'd be considered for this award. Receiving this award along with Ed is surely an honor.

Family History

I was born on February 20, 1936 in St. Joseph's Hospital in Reading, PA. A delivery nurse gave me the nickname "Skeeter" because she thought I looked like a comic strip cartoon character called "Little Skeeter". My mother, Hazel, was also a nurse at the hospital and my father, Roy, worked in a steel mill. I grew up in Mohnton, PA along with two sisters and a brother. I was active outdoors, always making insect and plant collections. As a teenager, I had a newspaper route for six years and worked in a peach orchard during the summer months. During the summer following my first 2 years of college, I worked in a steel mill and dug graves in a cemetery. I was in the Boy Scouts for 10 years and received my Eagle Scout award in 1953. I graduated from Governor Mifflin High School in Shillington, PA in 1954.

Education and Career

From 1954-1958, I attended Penn State University where I majored in forest management and received my BS degree in 1958. I started working for the U.S. Forest Service the summer of 1957 as a forestry student aid on the Umpqua National Forest in south-central Oregon doing forest inventory. Upon graduation, I returned to the Umpqua and continued inventory and timber type mapping of the forest. I retired in 1959 because of a knee injury and returned to Penn State to earn a BS degree in zoology and entomology in 1960.



In the summer of 1960, I accepted a position as a research entomologist at the Alaska Forest Research Center (PNW) in Juneau, AK. I worked with Don Schmiege on the biology and ecology of the black-headed budworm and hemlock sawfly. Bob Paulus was my industrious technician. When not doing research, we fished for dolly-varden trout, salmon, and halibut. We even made a crab trap which furnished us with many Alaska king crabs. We did our seasonal research from a houseboat anchored in inlets in southeast Alaska.

When I left Juneau in 1964, John Hard replaced me and it was almost 20 years later when we ended up working together in Fairbanks. In 1964, I returned to school at the University of Maryland to receive a MS in insect physiology under Dr. Jack Colvard Jones. I was also assigned to the Forest Insect Lab at Beltsville, MD.

In August 1965, I transferred to the Forestry Sciences Lab (SE) in Research Triangle Park, NC, as an insect toxicologist where I worked for 10 years with my good friend, Felton Hastings, and my faithful technician, Danny Lyon, who later followed me to Alaska. My research assignment was to determine the role of absorption and translocation of systemic insecticides in southern pines. I was instrumental in getting "Orthene" registered by Chevron Chemical Company for use against defoliators and seed and cone insects in southern pines. I also attended NC State University where I received my PhD in forest entomology and insect toxicology in 1971. My PhD research centered on the use of semiochemicals by *Ips grandicollis* in the colonization of loblolly pines.

In 1973, I married Pat Thomas from Granville, OH who worked at the FSL as a biological technician studying soil-related organisms. We spent many of weekends backpacking in the Appalachian Mountains in western North Carolina or canoeing some of the rivers throughout the state. We honeymooned on a canoe trip to Algonquin Provincial Park in Ontario, Canada.

On to Alaska

In the summer of 1974, Pat and I drove to Alaska using two weeks to camp and to observe and enjoy the scenery along the route through Canada and the Alaska Highway. We bought a house on 2.5 acres outside Fairbanks where I worked at the Institute of Northern Forestry (PNW), located on the campus of the University of Alaska Fairbanks. We raised Sarah and Luke in Fairbanks and enjoyed gardening and many weekends camping, cross-country skiing, and snow mobiling. Pat was involved in many community activities.

During my first summer in Fairbanks, I met Ed Holsten, who at the time was working in the Noatak River area in Northwest Alaska. Ed eventually was employed by Forest Health Management, State & Private Forestry in Region 10, located in Anchorage. Thus started 35 years of cooperation in forest insect research and management in interior and south-central Alaska.

When, I first arrived in Fairbanks in 1974, a large outbreak of a birch defoliator, the spear-marked black moth, was infesting 2-3 million acres of interior birch forests. The biology and ecology of this pest was practically unknown so I started on a 5-year plan to unravel the mysteries of this geometrid. I studied the biology, ecology, host preferences, reproductive characteristics, pheromone system (actually discovered a new type of pheromone-producing glands in the abdomens of female moths), overwintering strategies, and parasites and predators of this insect. Everywhere I went those summers, there were black and white moths fluttering about. I distinctly remember the first winter in Fairbanks when I would snowshoe a mile to my

weather station to record the previous week's temperatures. One cold morning in January 1975, the thermometer read -65° F and icicles hung from my beard! I thus became the world's authority on the spear-marked black moth and the coldest entomologist in North America!

One task I started in 1975 was to monitor defoliator and bark beetle populations in the Bonanza Creek Experimental Forest, west of Fairbanks, where most of my research sites were located. Monitoring continues today under Jim Kruse, FHP entomologist in Fairbanks. This 12,000 acre forested area is also a Long-Term Ecological Research (LTER) site under the NSF. The forest ecosystem contained floodplain and upland stands of alder, aspen, willow, balsam popular, birch, tamarack, and black and white spruce.

At the same time, other defoliators were becoming abundant. The larch bud moth, large aspen tortrix, aspen leaf miner, and willow galls were also studied. Following the outbreak of the larch bud moth, the eastern larch beetle became prevalent in eastern larch (tamarack) and I was the first entomologist to describe its biology and behavior in boreal forests.

During the 1980's, I studied the northern spruce engraver, *Ips perturbatus*, and developed a pheromone-based trap-out system for preventing infestation of white spruce stands adjacent to timber harvest operations. Outbreaks of the aspen and willow blotch miners were also occurring at this time. Sometimes I had as many as 6 studies ongoing at one time.

In, 1975, a large windstorm on the northern Kenai Peninsula caused a blowdown of several hundred acres of Lutz spruce (white x Sitka hybrid). Ed and I immediately established long-term monitoring plots along the northern end of Resurrection River, south of Hope, AK. These plots are still remeasured 37 years later.

The beetle infestation spread rapidly throughout the Kenai Peninsula. We established and cooperated in about 20 different studies on spruce beetle ecology, behavior, and management during the next 20 years. Those studies included: field tests of preventive sprays (chlopyrofos, permethrin, carbaryl, diesel oil, and pine oil), stand thinning and fertilization, use of semiochemicals for monitoring

population levels and management, use of MCH to trap-out beetle populations, production of MCH by female beetles, host resistance (stilbenes and acid resins in wound tissues), parasites and predators, overwinter survival, host selection, and effect of temperature on beetle development. Many of our study sites were only accessible by float plane or helicopter and we spent many nights camped in the wilderness. We first described the effect of seasonal temperature fluctuations (May to September) on beetle life cycles in 1984. These higher than usual seasonal temperatures were the beginning of climate warming in Alaska and caused the beetle to develop 1-year life cycles rather than two-year cycles.

We had a field camp in Cooper Landing called Broadview Field Camp. This provided us with lodging and laboratory facilities for over 25 years. It is located on a bluff overlooking Kenai Lake and was central to most of our field study sites. It also serves as a center for other entomologists and pathologists to visit and cooperate in various spruce beetle research projects.

In 1985, I was appointed Project leader of the 12 scientist project in Fairbanks. Thanks to Ed's leadership, all of our studies continued even though I was hampered with administrative duties. Then, in 1989, the Exxon Valdez ran aground and the largest oil spill in North America occurred in Prince William Sound in south-central Alaska. I was selected to be the Coordinator of Terrestrial Research under the oil spill consortium (State, federal, and University of Alaska). This included soliciting proposals and funding research on the effects of the spill on all mammals, waterfowl, shore birds, and invertebrates in the intertidal zone and extending one quarter mile from the shoreline into forested areas. After two years of stressful politics within the Forest Service, I quit as coordinator.

In 1996, the Institute of Northern Forestry was closed and I retired. In 1997, I moved my family to Corvallis, OR where our two children were attending Oregon State University. I have continued as a volunteer with the Pacific Northwest Research Station since 1996 depending on grants from FHP in Anchorage or STDP grants from the WO to cover travel costs. I usually spend 1-2 weeks each month from May through September in the Fairbanks area and the Kenai Peninsula. My research efforts have concentrated on monitoring bark beetle, wood borer, and ground beetle populations and correlating population level changes with changes in May to September temperatures. I work closely with Jim Kruse in Fairbanks and Ken Zogas, FHP Biological Technician in Anchorage. Rick Kelsey of the Corvallis Forestry Sciences Lab in Corvallis is my supervisor.

In 2004, I received the Centennial Fellowship Award from the Penn State School of Forestry for outstanding contributions to the field of forestry.

In 2010, Jim Kruse and I started to monitor mortality of aspen stands in relation to a 10-year infestation of the aspen leaf miner, and drought conditions in interior Alaska. We plan to continue this study for several years.

As you can see, my years stumbling through the forests of Alaska are closing down as old age and arthritis effect my mobility. It's been a great career and, at times, almost like a paid vacation. I met many interesting people during my career and want to personally thank some of them for their support and cooperative efforts over the years: First, my wife Pat and kids, Sarah and Luke, who spent many days assisting me in the field and accompanying me to professional meetings.

Of course, thanks goes to Ed Holsten; and to Felton Hastings, Ken Zogas, John Hard, Pat Shea, Steve Seybold, Jim Kruse, Andy Graves, Pete Rush, Bob Paulus, Danny Lyon, Bob Wolfe, Kathy Matthews, Cindy Snyder, Joyce Beelman, Tom Ward, Karen Post, Roger Burnside, Bob Averill, Gene Lessard, Jerry Boughton, Gary Daterman, Rick Kelsey, Tiphanie Henningsen, Diane Christiansen, and Trish Wurtz.