In Memoriam
Robert Grove Hollingsworth (1957–2019)

Robert (Robbie) Grove Hollingsworth died unexpectedly on February 2, 2019, at the age of 61. Robbie was born on October 26, 1957, in La Vale, Maryland, the youngest of four sons born to Dody (Josephine) and Tom (Thomas) Hollingsworth. When Robbie was two years old, his family moved to Valsese, North Carolina, where his father was an engineer in the textile industry. When Robbie was 12 years old he moved to High Point, NC, and then at 14 moved again, this time to Linville, NC, where he attended nearby Avery High School. He graduated from Davidson College in 1980 but spent his junior year at Appalachian State University, where he met his future wife Diana.

Robbie was a gifted scientist who contributed greatly to our knowledge of insects, mollusks, and their interactions and impact on agriculture and natural resources, particularly in the Pacific Basin. He began his professional journey at North Carolina State University, where he completed a Master of Science degree in Agricultural Pest Management in 1982. In 1983 he joined the Western Samoa Department of Agriculture as a Peace Corps Entomologist. Robbie returned to NC State in 1987 to complete a PhD in entomology. His dissertation focused on the effects of balsam woolly adelgid on tree health in Fraser fir and silver fir forests and nurseries. Following his PhD, Robbie received a prestigious Fulbright Fellowship and joined the Lowlands Agricultural Experiment Station in Papua New Guinea as an entomologist. From 1992 to 1998, Robbie's postdoctoral journey took him to the University of Hawaii at Manoa, the University of Arkansas, and eventually to the Solomon Islands, where he served as a United Nations research scientist coordinating research activities of the Regional Fruit Fly Project. In 1998, Robbie began a long-term career as a Research Biologist at the U.S. Department of Agriculture's Agricultural Research Service in Hilo, Hawaii.

At ARS-Hilo, Robbie for many years studied pests of floriculture crops and developed export protocols and quarantine treatments. He worked on thrips, burrowing caterpillars, ants, scale insects, and mealybugs. He was very interested in non-chemical approaches including plant natural products such as limonene and caffeine to control pests. While carrying out bioassays to improve control of mealybugs and scale insects using combinations of soaps, oils, and other environmentally friendly ingredients, Robbie discovered that limonene, a citrus extract, easily removed the protective wax coating of insects, and he developed emulsifier and surfactant combinations to create plant-safe and effective solutions. He developed efficient scouting methods for hard-to-see thrips in flower blossoms to facilitate decisions on pesticide use and to determine whether flowers were suitable for export markets. In cooperation with Washington State University scientists, Robbie studied the risk for accidental introduction of yellow jackets and other pests in sea-freight containers with Christmas trees destined for Hawaii and advocated for more rigorous tree shaking on arrival and pre-shipment control using pyrethroids.

Robbie spent much of his later career raising awareness about the pest and vector status of slugs and snails in Hawaii and other Pacific islands, documenting pest problems and distributions, developing methods to prevent or control these quarantine pests, and communicating these methods to growers, regulators, and other researchers. With the assistance of Centers for Disease Control and Prevention researchers, Robbie carried out the first Hawaii island-wide survey documenting the agricultural pest status of the slug *Parmarion martensii*, its distribution, behavioral traits, and vector propensity. The survey documented unusual behavioral traits for the new species (e.g., propensity to climb) which, in combination with its status as an important carrier of rat lungworm disease (caused by the nematode *Angiostrongylus cantonensis*), provided an explanation for the high incidence of rat lungworm disease noted in east Hawaii island in recent years.

After a short retirement, Robbie was rehired at USDA-ARS in Hilo to develop a program in coffee pest management with a focus on the coffee berry borer, a new pest at the time that has since reshaped the coffee industry. He started many cooperative projects with growers and other scientists that continue in one form or another to this day. Robbie developed a freezing treatment for control of coffee berry borer (CBB) in green coffee that is approved for use by the Hawaii Department of Agriculture for intrastate shipments to ensure that CBB is not moved between islands. He also initiated several projects that greatly improved our understanding of CBB biology in Hawaii, including patterns of flight activity, development across an elevational gradient, and the importance of ground and tree raisins as post-harvest population reservoirs. A couple of years ago Robbie bought a piece of land with Luis Aristizábal in Kau on the Big Island with the intention of creating a coffee research farm to explore new and innovative production, harvesting, and pest management ideas. As in everything he did, Robbie was passionate about his job and research, and he also introduced many friends and colleagues to the art of making an excellent cup of coffee.

After about two decades in Hawaii, Robbie returned to NC State in early 2018 as a research specialist on mollusks at the NSF Center for Integrated Pest Management, with the goal of preventing the introduction of non-native plant-pest mollusks in the United States. The course of his professional career resulted in more than 100 published papers in peer-reviewed journals and more than 30 invited talks. Robbie also held leadership positions in the Hawaiian Entomological Society and the Entomological Society of America's International Affairs Committee.

Robbie loved living on the Big Island and felt at home there. Robbie's enthusiasm and energy were felt all around the island, from the floriculture industry in East Hawaii that he worked with for more than a decade, and coffee growers in West Hawaii, to his colleagues and personal friends. After hours, he loved to discuss non-entomological topics like astronomy, geology, mythology, anthropology, religion, culture, and politics, a testament to his active and inquisitive mind. Robbie was an active participant in makule (senior) soccer and ultimate frisbee, liked to hike and travel and explore new places, and was involved in several important community organizations including the Hawaii District Science Fair, which named a student award after him. His colleagues fondly remember taking Robbie's surfing lessons at Waikiki beach. Robbie left behind a scientific legacy in plant protection guaranteed to inspire young pest management professionals and naturalists alike. Beyond his scientific legacy, many of us remember Robbie for his quick smile, easy-going personality, contagious enthusiasm, and unconditional kindness.

—Godshen Pallipparambil[1], Karl Suiter[1], Luis Aristizábal[2], Jack Armstrong[3], Joseph Hollingsworth[4], Melissa Johnson[5], Nicholas Manoukis[5], and Peter Follett[5]

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MINUTES FOR FISCAL YEAR 2018

The following are brief synopses of the minutes of the meetings of the Hawaiian Entomological Society for the fiscal year 2018. The HES fiscal year runs from March 1 to the end of February of the following year. More detailed minutes are kept with the Secretary of the Society.

April 2018

The 1125th meeting of the Hawaiian Entomological Society was held at the Department of Plant and Environmental Protection Sciences, University of Hawaii at Manoa, Honolulu, on 13 April 2018, with President Cynthia King presiding. Seven members and five guests were present. Four members and five guests joined via our online ZOOM broadcast.

Program: Invited speaker, Dr. Chrissy Mogren from the Department of Plant and Environmental Protection Sciences, University of Hawaii at Manoa, presented a talk titled "Pollen Stress in Honey Bee Larval Diets Increases Clothianidin Susceptibility in Adulthood."

Reports of Committees:

Treasurer, Paul Krushelnycky: Report on the XVI Pacific Entomology Conference (PEC) 2017 Featuring the Hawaiian Botanical Forum held on December 5–7. With the partnership of the Hawaiian Botanical Forum, the conference went well, with 217 registrations total**.** About 38 of the 217 attendees were active HES members, and about 80–90 people were likely entomology subject–based attendees. In previous PECs, about 50% of registrants were active HES members. The joint conference allowed HES to manage the increasing costs of holding the PEC while still charging a realistic fee. It has also become increasingly difficult to pinpoint dates that allow for all HES members to attend, and this should be researched further.

Science Fair: Co-Chairperson Jordie Ocenar reported that The 61st Hawaii State Science and Engineering Fair occurred at the Hawaii Convention Center on 29 March 2018. This year there were 31 high-school and eighty-six middle-school projects. Four high-school and 8 middle-school projects were entomologically related. The following are the winners of this year's HES science fair awards:

First Place: Zoey Duan, Stevenson Middle School, 8th grade.

Project: *Munch on Plastic*. Teacher: Julia Segawa; Mentor: Dr. Brendan Holland. Zoey investigated the ability of mealworms (the larvae of *Tenebrio molitor*) and waxworms (the larvae of *Galleria mellonella*) to digest polyethylene and polystyrene. Larvae were placed in petri dishes with either material (but not both) to determine the digestive abilities of the insects. Zoey found that the insects were able to feed on the materials and survived the process. She received 2nd place overall for the Hawaii State Science and Engineering Fair.

Second Place: Kali Kring, Waiakea Intermediate School, 8th grade.

Project: *What Material Catches the Most Small Hive Beetles in a Bee Hive*. Teacher: Harvey Llantero. Kali explored the use of different materials to catch small hive beetles. Her mother and a friend have a few beehives on their property, and Kali wanted to develop a way for homeowners to deal with the problem. She tested vegetable oil, microfiber tablecloths, smooth tablecloths, and diatomaceous earth at the base of the hives. Kali found that vegetable oil worked the best. Kali would like to continue her work on more hives and is looking at incorporating environmental factors in a follow-up experiment.

Honorable Mention: Sarah Fukumura-Sawada, Waiakea Interm. School, 8th grade. Project: *The Effectiveness of Neem Oil on LFA Colonies*. Teacher: Solomon Lott-Farmer. Sarah examined the effects of neem oil on Little Fire Ant (LFA) colonies in a suburban setting. She wanted to develop a safe and easy way for people to control the pest on their properties. To accomplish this, she created a bait with neem oil and peanut butter based on an experiment she did on LFA last year. Sarah found that her bait worked temporarily to decrease LFA populations but did not persist. Sarah would like to continue with her experiment to improve her bait.

Notes and Exhibitions: Karl Magnacca reported a relatively new Crabronid sand wasp (possibly a *Bembecinus* sp.) found around the coasts of Kahuku and Kaena Point, Oahu. Janis Matsunaga sent specimens to the Smithsonian for species confirmation but they returned unresolved and noted that males are needed for species identification. Look out for these wasps making nests in the sand.

October 2018

The 1126th meeting of the Hawaiian Entomological Society was held at the Department of Plant and Environmental Protection Sciences, University of Hawaii at Manoa, Honolulu, on 12 October 2018, with President Karl Magnacca presiding. Seven members and four guests were present.

Program: Dr. Nicanor Liquido and his team from the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, presented information on The USDA Compendium of Fruit Fly Host Information in a talk titled “CoFFHI: The Information Technology Tool in Establishing the Official USDA Fruit Fly Regulated Articles.” The mission of CoFFHI is to provide USDA with an up-to-date, harmonized, validated list of suitable (=natural) host plants of fruit flies of the world as well as comprehensive host data for specific tephritid fruit fly species of economic importance.

MEMBERSHIP 2018

HONORARY MEMBERS

Balock, J.
Conant, P.
Hara, A.
Haramoto, F.
Howarth, F.G.
Look, W.C.
Mau, R.F.L.
Morrill, A.W
Napompeth, B.
Reimer, N.J.
Samuelson, G.A.
Shiroma, E.
Tamashiro, M.
Tanada, Y.
Vargas, R.

RETIRED MEMBERS

Andrews, W.B.
Armstrong, J.W.
Bautista, R.
Brennan, B.M.
Brown, W.
Early-Chun, M.
Easton, E.
Fujii, J.
Funasaki, G.Y.
Gagné, B.H.
Haverty, M.
Heu, R.
Higa, S
Hinkley, A.D.
Kaya, H.
Kohn, M.A.
Kumashiro, B.
Kunishi, R.K.
Lance, D.
Markin, G.P.
Matayoshi, S.
McCombs, S.D.
Nagamine, W.
Nakahara, L.
Nakahara, S.
Nisson, J.N.
Oatman, E.R.
Pierce, L.
Pinter, L.
Rutschky, C.W.
Schaefer, P.W.
Shimoda, L.
Swift, S.F.
Tanabe, A.
Teramoto, K.
Thompson, F.C.
Yano, K.
Yoshioka, E.

ACTIVE MEMBERS

Aihara-Sasaki, M.
Bayyareddy, K.
Brill, E.
Burnett, E.
Burnham-Larish, L.
Bushe, B.C.
Chamorro, L.
Chan, N.
Chaney, N.
Cheng, Z.
Ching, A
Cook, J.
Craddock, E.
Culliney, T.W.
Elliott, C.
Evenhuis, N.
Follett, P.
Geib, S.
Giffin, J.
Grace, J.K.
Griffith, M.
Haines, W.
Hauff, R.
Hight, S.
Joe, S.
Johnson, M.T.
Kamelamela, K.
Kanour, Jr., W.
Keller, M.
King, C.
Kishimoto, C.
Kruschelnycky, P.
Lach, L.
Leblanc, L.
Lee, S.
Leong, M.
Liebherr, J.
Liquido, N.J.
Loechelt-Yoshioka, H.
Magnacca, K.
Manoukis, N.
Martin, C.
Matsunaga, J.
McGrath, C.
McHugh, J., Jr.
McQuate, G.
Medeiros, M.
Miller, R.
Miller, S.
Montgomery, S.L.
Oboyski, P.
Ocenar, J.
Oi, D.H.
Oi, F.M.
Oishi, D.
Onaga, K.
Perreira, W.D.
Ramadan, M.
Richardson, M.
Rubinoff, D.
Shelly, T.
Smith, C.
Starr, F.
Starr, K.
Steck, G.
Strazanac, J.S.
Tateno, A.
Taylor, A.
Tsuda, D.M.
Uyesato, R.
Wada, L.
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EXECUTIVE COMMITTEE

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