10 May 2022

Dear CalHR,

The importance of biodiversity is something you hear about increasingly as the climate and species extinction crises converge on California. At the California Department of Food and Agriculture (CDFA), biodiversity isn't just a crunchy environmentalist idea, it is the world in which California agriculture operates. This is why the CDFA maintains a team of systematic entomologists and a world class insect collection of over 3 million reference specimens. The entomologists here, known to CalHR as Insect Biosystematists, study variations of insect diversity, discover and classify new, sometimes cryptic species, and develop the taxonomy that allows for a modern understanding and management of biodiversity not just with respect to California, but in a worldwide context.

Naturally most people think of familiar animals when the species extinction crisis comes up and don't make the connection to taxonomy. After all, how hard is it to identify a threatened polar bear or chimpanzee? But where the extinction crisis hits California hardest is the loss and shifts of diversity (and ecosystem functioning) at lower levels, where the impacts of insects and microbes reverberate up the chain, and particularly, directly affect California agriculture. This requires the most astute and dedicated scientists to resolve.

The training and expertise required to work as an insect biosystematist for the CDFA, however, is no match to the pay scales offered by the department. This situation is hard on the morale of CDFA insect biosystematists, to be sure, but impactful and deleterious in programmatic ways too, and ordinary people should be concerned. Taxonomic uncertainty introduces complexities into decision making, for the actual assessment of pest risk and for the regulations and legal matters involved. This isn't trivial. Taxonomic uncertainty is an expensive and time-consuming burden, which introduces multiple layers of risk in California governance, agriculture, and economy. Taxonomy is the structural foundation for the department (and biodiversity itself). The expertise and importance of taxonomists for the CDFA is analogous to structural engineers for a building. This expertise undergirds our regulatory decisions and all the functions that follow. Knowing who is who, doing what, in this very highly diverse system require very specialized professional training and provides the structural framework— the foundation— for supporting and directing all plant-pest-related operations of the CDFA, affecting hundreds of businesses and many billions of dollars in trade.

Governor Gavin Newsom goes out of his way to point out that California is clean and prosperous because our policies are based on sound science. And this is true. But how is it that as an accomplished entomologist working as a Senior Insect Biosystematist (Specialist), at the top of my class for over ten years, I literally have to starve to help keep my family financially afloat? Some expenses are more important than food (at least high-quality food and certainly any commercial dining) and there's not enough to go around. Here I am, I have a Ph.D. and use my highly specialized, extensive, expensive, and valuable scientific expertise in the CDFA to protect and promote the food industry in California. My job helps Californians eat better and maintain a vibrant economy. Personally, however, my job falls short of providing the same to me.

The money is there to support scientists like me and always has been there. CalHR has chosen to look the other way. This must change!

Currently the disjointed, illogical, and imbalanced pay structure within Unit 10 create radical differences in pay between classes of similar work and qualifications. There is also a large disparity between supervisory and rank-and-file scientist pay. These discrepancies act like a funnel to redirect qualified biosystematists away from dedicating their careers to taxonomy. So far, even among our small team of CDFA entomologists, we've had three experienced senior insect biosystematists make the lucrative change to their careers and move to supervisory positions. And they've never looked back. There's no reason why anyone would! It is the goal for the rest of the scientists to do the same, honestly. We are all competing for the next supervisory position that comes up not because of an interest or talent in supervisory work, but because the better pay is necessary for the financial viability of our families. As a result, taxonomy suffers and managing biodiversity and agriculture in California becomes more unwieldy and expensive. It also leaves an unstable and demoralized scientist workforce and a California that is more vulnerable and more poorly managed.

CalHR cannot continue to look away. We need strong connections between systematic entomologists, agriculture, and the state to foster our collective prosperity. The indignities that come with poor pay for me and for other biosystematists, despite our expertise and value, cannot be ignored and stay unaddressed. The structure of our government itself indicates the value of scientists in the system and how much they should be paid. CAPS' proposal connects the dots and lays this out in a simple, fair, comprehensive, and judicious way that ordinary people will recognize as not just wise, but necessary. California needs us to come through for each other.

Sincerely,

[redacted]

We have hundreds to thousands of people collecting insects in the fields and thousands of people acting upon the identifications we provide. But it is just the few people here at the lab that bridge the two together. We are the operational hub. Producing a false positive (e.g., declaring it is a medfly when it isn't) or a false negative (failing to identify a medfly when it is present) would set off chain reactions that involve many hundreds of lost man-hours and millions of dollars in waste. Every accurate ID saves a yield by either dismissing non-threats or identifying and triggering seizure of actual threats, creating purpose for the other branches in the department. Scientists at the Plant Pest Diagnostics Center are on a constant lookout for hundreds if not thousands of potential pests of concern. As just one example, in 2009, CDFA scientists distinguished an unobtrusive brown moth collected in Napa County as *Lobesia botrana*, the European Grapevine moth. This moth looks very similar to California native species but its biology is different (and far more destructive). It feeds on grape flowers and fruit in other parts of the world including Europe and Africa (and is now recently established in Chile). An intensive collecting program ensued and scientists at the lab identified the moth in nine additional California counties. Once CDFA had an understanding of its presence and exactly where it was living, eradication efforts were deployed successfully. The species was eradicated from California in 2016, saving the winegrape industry hundreds of millions of dollars in crop loss, treatments, and loss of markets. The truth is that we have hundreds of pests of similar concern that we identify every day, driving critical actions. Accuracy in this regard is of great economic significance whether it is the European Grapevine moth, Oriental Fruit Fly, Huanglongbing bacterial disease, or many other threats. This work can only be done by a small group of highly trained career scientists.
