

SHORT COMMUNICATION

What has happened to all the insects? – Nobody really knows, but it is clear that the problem of massive decline in insect abundance is world-wide and thus, presumably, at least some of the probably many causes must also be global. Climate change is undoubtedly a destabilising problem for insects, but would be expected to cause balance and distributional shifts rather than massive drops in overall biomass. Many environmental nasties are out there in pervasive form, including the now ubiquitous microplastics which, with their large surface to volume ratios must be liberating large quantities of plasticisers, some of which are known to have hormone-disruptive properties, and a host of biologically active substances resulting from a range of human habits from pest control and antibiotics to HRT and birth control. Pesticides aside, not much research has examined the effects of these things specifically on insect physiology

Here is an anecdote. I spend much of my time rearing wild-collected caterpillars (etc.) in order to try to understand the host relations of their parasitoids. For the past decade or so, the increasingly depressing experience of not being able to find so many caterpillars as formerly has been exacerbated by the higher levels of unexplained mortality I have been experiencing during the rearing process. I use absorbent lavatory paper quite liberally to line all (invariably closed) containers in which my caterpillars (etc.) are being raised, and about 5 years ago I even wrote to the supplier of the brand I was currently using to ask whether there was any chemical used in the manufacturing process that might affect insect development (the reply was something like “nothing in our products is harmful to humans” – a politician’s answer to my question!). A few months ago I read an article (unfortunately I can’t recall where) written by someone trying desperately to avoid exposing her family to “forever chemicals” such as per- and poly-fluoroalkyl substances (PFAS) that have become insidious global pollutants at an industrial scale. The author remarked that they are used in the manufacture even of lavatory paper, only one company she knew of claiming not to (though there may be others). This was the environmentally crusading organisation “Who gives a crap”, and I immediately switched to using their product for my insect-rearing efforts (they have confirmed to me that no PFAS are used). The result has been a substantial drop in unexplained mortality.

Take this as you will: at least a tip for possibly better rearing results, or more expansively a plea for a scientific investigation into the effect of PFAS on insect development. It may be too late to arrest insect decline, but it would certainly be good to better understand the (no doubt many) factors behind it.

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