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Editorial 🗉

Equal Rights for Parasites

An important issue in conservation biology is lying dormant. The term blodiversity seems to be used almost entirely for free-living animals and plants. Parasites seem to be ignored or regarded as a threat to the conservation of endangered species.

The reality is that parasites are among the most diverse of all organisms. It could even be argued that the main purpose for preserving free-living organisms is to protect their parasites. But rather than launching into an usversus-them dichotomy, my goal is to get parasites widely recognized as a legitimate part of biodiversity.

Parasites are highly specialized creatures that have evolved amazing ways to live in or on other creatures. The very fact that all animals have parasites strongly indicates that parasites are an integral part of our biosphere. Nevertheless, we tend to despise them. We consider ourselves to be in good health only when we are free of parasites—for good reason, because many are deadly, debilitating, and painful. Even those who specialize in the study of parasites tend to regard them with controlled disdain. Parasitology is usually taught from a medical or veterinary perspective in which parasites are nasty critters to he eliminated. Informing most people, even most biologists, that parasites are going extinct is sure to bring a response such as "good riddance."

But what can be done? The following is an example of how parasites can be rendered extinct by well-meaning biologists. In the attempt to save certain free-living species from extinction, no attention is given to the fate of their parasites. When the last remaining members of a species are taken into captivity they could lose their parasites, either by the drastic change in living conditions, by infection with new parasites that overwhelm the natural ones, by treatment from 200 veterinarians, or by generations of captive breeding. When these rare species are released back to the wild, they may be free of their natural parasites. The bosts may have been saved, but their parasites could have become extinct.

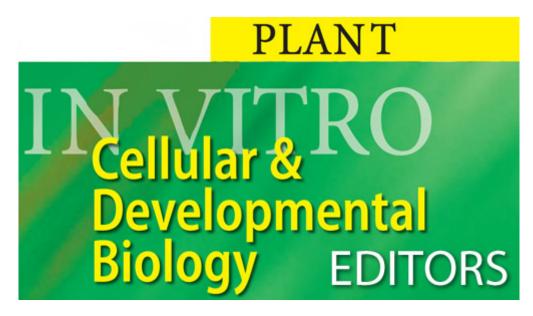
A few decades ago predators were discriminated against and bounties were even paid for their dead bodies. Parasites tend to be held in that same low esteem today. Sure, when trying to save the last remaining individuals of a species, a parasitic burden may not be appropriate. If the parasites are host-specific, then they will become extinct when their host becomes extinct. If the parasites are not host-specific, then there may not be a problem. But, if host-specific parasites are fairly benign, then perhaps they could be left in their hosts. If captive breeding is practiced, perhaps the parasites could be reintroduced into the wild in those host animals that are ultimately released. Or, perhaps they could be reintroduced after the wild population has had a chance to recover. But parasites are opportunists, and any species living anywhere for any length of time is sure to pick up some parasites, so the reintroduced natural parasites may not be able to compete with the interlopers.

As we watch the rain forest burn and as we lament the horrible destruction of biological diversity, let us remember that for each of the free-living species that are lost, there will be an equal if not greater number of parasite species lost. Because it is hard to imagine a host fortunate enough to have only one species of parasite, the chances are that the greater scenario applies. Here is where biological diversity is really taking a bearing. Parasites are not normally studied until their hosts are. Unfortunately, many of the hosts have not even been identified yet.

The best time to save a species is before it becomes endangered. The more host animals we save, the more parasites we will also save. The parasite-host relationship is not always simple, however, thus the fascination of parasitology. Some parasites have life cycles in which they pass through several unrelated host species. If even one of the species in this cycle is lost, the parasite is doomed unless it can rapidly find a new intermediate host species. All stages of its complex life cycle must be preserved, even though most life cycles have yet to be undetstood. We are faced with losing a biological diversity that is so unstudied that we will not even know what we lose—unless, of course, the removal of a parasite enables one of its intermediate hosts to suddenly undergo a population explosion due to the loss of a biological control and thereby attract our attention. The very complexity of

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