of detectable Vβ8$^+$ T-cell death 2 days after SEB administration cannot be attributed to ongoing SEB-induced cell activation.

In summary, our results do not favour the contention of a key role for T-cell lymphokine starvation *per se* in the induction of cell death after SEB-priming, but indicate that diminution of the Vβ8$^+$ T-cell population in this context is more satisfactorily explained by activation-induced programmed cell death.

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COHEN *ET AL.* REPLY — Ochi and Kawabe's response does not support their contention. They say that if lymphokine withdrawal was responsible for Vβ8$^+$ cell death, they would have seen a reduction in Vβ8$^+$ cell number after 20 hours' incubation *in vitro*. That is exactly what they did see at day 4 and 7 (ref. 2). That they did not see it at day 2 supports our suggestion that at that time sufficient SEB is present to stimulate adequate cytokine production.

The experiment with antibodies to interleukin-2, which was not reported in the original paper, is difficult to interpret without positive controls. Were the antibodies effective? If lymphokine-withdrawal apoptosis did take place, would it have been detected? The failure to detect active SEB 36 hours after injection also lacks a positive control; could Ochi and Kawabe, for example, detect SEB 6 hours after injection? In any event, the concentration of SEB that is important is not what can be detected in an arbitrary assay but what is effective *in vivo*. We still believe[1] that the loss of Vβ8$^+$ cells *could* be by activation-induced death, but that the evidence is not convincing.

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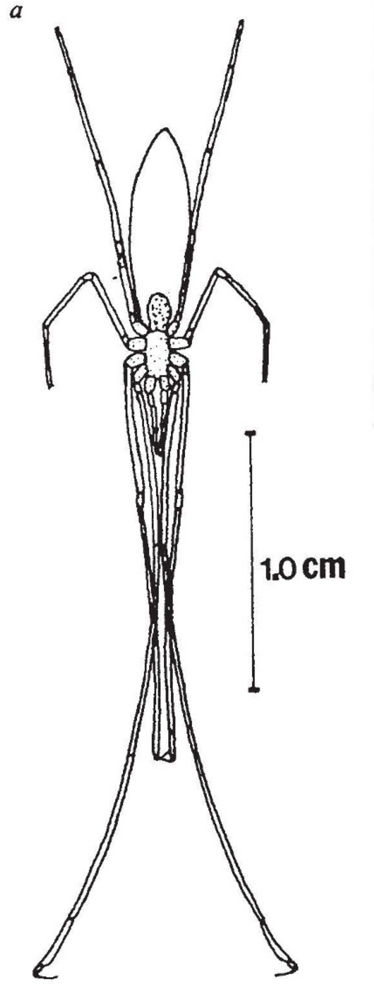
Impaled prey

SIR — Remarkable evolutionary innovations are characteristic of species on isolated land masses. This is particularly true of the Hawaiian Islands, where the processes of evolution and extinction have been accentuated and accelerated, yet many species remain unknown and undescribed[1]. The effects of anthropogenic disturbance are similarly acute. As a consequence, the archipelago represents a microcosm for global issues and concerns in evolution and conservation.



a, *D. raptor* at rest, ventral view, showing the long prolateral claws of leg pairs I and II, and the typical resting posture. *b*, Tarsus and claws of right leg I, showing elongation of the prolateral claw (length 0.4–0.7 mm; 45–60% length of tarsus). The relatively small retrolateral and medial claws, which barely project beyond the limits of the articulated base, have the standard proportions for these claw for Tetragnathidae. Strong macrotricheae line the ventral margin of the distal 2/3 of the tarsus. × 225.

Striking examples of adapative radiation in the Hawaiian Islands have been documented in the genus *Drosophila*, the land snails and the honeycreepers[2]. The most recent species radiation to be discovered in the archipelago is a lineage of diverse, conspicuous and abundant spiders in the family Tetragnathidae[3]. In particular, one of the most remarkable morphological features ever found in spiders (immense elongation of the tarsal claws) is exhibited by the endemic Hawaiian tetragnathid *Doryonychus raptor* Simon: the prolateral claws on the tarsi of leg pairs I and II of *D. raptor* are immensely elongated (see figure), and their spinneret morphology indicates that the species has lost the ability to spin capture webs. *D. raptor* captures insects using only the enlarged prolateral claws to impale prey and draw them to the chelicerae in a single, rapid movement. The spider is strictly nocturnal, spending most of the activity-period hanging upside down from silk threads. Small insects are snagged directly from the air using a single long claw. For larger insects the spider uses both long claws on legs I, or sometimes all the long claws. On securing the insect in the chelicerae, the claws are immediately withdrawn, but used again at intervals during feeding, to move, and finally discard, the insect.

The highly specialized mode of foraging in *D. raptor* may underlie the extreme restriction of its distribution[4]. The species is almost entirely confined to small, remnant pockets of lowland forests directly below high waterfalls on the Hawaiian island of Kauai. The unique specialization and range restriction exhibited by *D. raptor* render it a valuable candidate for studies of conservation on the basis of charismatic value alone. In addition, being a generalized predator of herbivores, it possesses considerable ecological value[5]. But the true potential of the system lies in the extremes it represents, allowing it to serve as a model for global concerns in conservation biology. Processes of evolution[2] and anthropogenically induced extinction[1] have occurred on a heightened scale in the Hawaiian archipelago; nowhere are these processes better exemplified than in the case of *D. raptor* in the vanishing lowland forests of Kauai. Consequently, quantitative assessment of such effects as