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and prevented aggregation. Particles were stable in salt, histidine, and bovine and human serum albumin solutions and did not show cytotoxicity when tested with human fibroblast cells. Thus, plant matter may be an effective route to making biomedically friendly metal nanoparticles. — MSL
Small **4**, 1425 (2008).

ECOLOGY

The Me Generation

Despite conservation efforts to ensure its survival, an island bird species has remained endangered because of its own social behaviors. The Seychelles magpie robin, whose population dwindled to just seven breeding pairs in 1988, has been the subject of intense conservation efforts for more than three decades. Success has been modest, with reintroductions within the Seychelles archipelago boosting the population size to almost 150 individuals in all. López-Sepulcre *et al.* show that recovery has been slower than expected because of competition within territorial social groups consisting of a dominant breeding pair and several subordinate individuals, whose reproduction is postponed until one of the dominant pair dies or is competitively ousted. Competitive interactions for dominance within the group reduce the group's reproductive output. Thus, behavior that is advantageous for an individual's fitness (and evolutionary success) can be detrimental to that of the group. Simulations suggest that recovery of the population would have been at least one-third more rapid in the absence of competitive interactions, highlighting the need to take social behavior into account in species recovery plans. — AMS



Seychelles magpie robin.

J. Anim. Ecol., 10.1111/j.1365-2656.2008.01475.x (2008).

IMMUNOLOGY

Hard Graft Made Easy

Type 1 diabetes is an autoimmune disease that destroys insulin-producing β cells, situated in the pancreas within the islets of Langerhans, leaving sufferers dependent on regular injections of insulin to control their blood glucose levels. An attractive treatment would be the transplantation

of islets from healthy donors but, as with all organ transplants, there is the risk of rejection and a need for long-term suppression of the recipient's immune system, leaving the person prey to opportunistic infections. Luo *et al.* have developed a method to make diabetic mice tolerant to islet grafts by injecting them once 1 week before transplantation and again 1 day afterward with donor spleen cells, which were first treated with the chemical crosslinker 1-ethyl-3-(3'-dimethylaminopropyl)-carbodiimide. Antigen-presenting cells from the donor spleen induced the down-regulation of the host effector T cells that would otherwise orchestrate graft rejection, and encouraged regulatory T cells to provide long-term tolerance to the transplants. Islet cells grafted into diabetic mice produced insulin for several months, and grafts could be replaced without additional treatment, as long as the new islets came from the same original donor. This approach depended on the exact timing and size of fixed-cell injections but, if a similar protocol can be established for humans, it could provide a simple and effective therapy for a very common condition. — CS*

Proc. Natl. Acad. Sci. U.S.A.
105, 14527 (2008).

DEVELOPMENTAL BIOLOGY

Alternative Route to Male Killing

Wildly distorted sex ratios in certain insects—where as few as 1 male per 100 offspring are produced, dramatically altering patterns of mate competition—are caused by “male-killing” bacteria. Male killing in the parasitic wasp *Nasonia vitripennis*, in which males develop from unfertilized eggs by parthenogenesis, is caused by the bacterium *Arsenophonus nasoniae*.

Ferree *et al.* show that in infected *Nasonia* females, unfertilized eggs die during early embryogenesis because of a lack of centrosome activity and the consequent disarray of cell division. In diploid species, centrosomes are generally provided by the sperm. In *Nasonia*, which have haploid eggs, the centrosomes are derived from “accessory nuclei.” Accessory nuclei, vesicular organelles that are formed from the oocyte nuclear membrane that sequester centrosome components, are intact in both infected and uninfected wasps, suggesting that *Arsenophonus* interferes with events downstream of their formation. Indeed, haploid male eggs can be rescued by the delivery of paternal centrosomes. Thus, *Arsenophonus* interferes with the development of unfertilized eggs rather than targeting maleness. — GR

Curr. Biol. **18**, 1409 (2008).