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► **COVER:** 'Competing for survival' by Simon Bradbrook, inspired by the Review on p823.



LUCY BIRD



KIRSTY MINTON



OLIVE LEAVY

Every month of 2009, we have been proud to provide comprehensive and up-to-date Reviews of the 'hottest' developments across all aspects of immunology. This month is no exception, covering topics that range from the role of endolysosomal proteases in host defence (p871) to defining the culprits responsible for misdirected immune responses against self proteins (p845) or food components (p858). In addition, three articles this month each focus on a discrete stage in the life of a T cell — development in the thymus, maintenance in the periphery and effector function in the tissues.

Ludger Klein and colleagues (p833) explain how cooperation between different thymic antigen-presenting cells supports thymocyte selection and shapes the repertoire of developing T cells, taking advantage of unique antigen processing and presentation pathways in various thymic microenvironments. Kensuke Takada and Stephen Jameson (p823) introduce the concepts of 'space' and 'place' for survival in the periphery, where individual T cells compete for homeostatic signals that influence their survival and function. In an Opinion piece on p883, Casey Weaver and Robin Hatton present a hypothesis that draws on our recent understanding of the dynamic interplay between regulatory T cell and T helper 17 cell lineages, particularly in the gut mucosa. They suggest that these lineages co-evolved to counter-regulate immune responses in the gut to accommodate a large, diverse commensal microbiota for the benefit of the host.

Finally, we would like to end the year by thanking all our authors, referees and Research Highlights advisors for taking the time to write and work with us and for helping us to keep *Nature Reviews Immunology* at the top of the immunology tree!

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Printed in Wales by Cambrian Printers

on acid-free paper