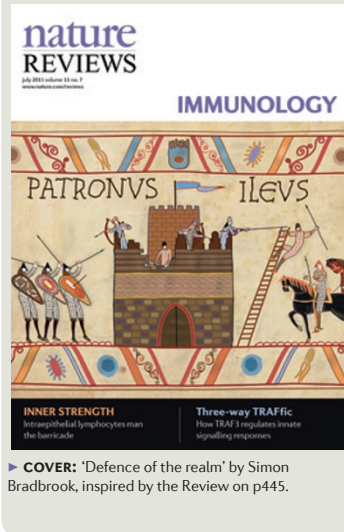




nature publishing group



The Bayeux Tapestry depicts the Norman invasion of England. This month, we have based our cover on this iconic image to depict another type of invasion — that of the gut by intestinal pathogens — and the battle given by intestinal intraepithelial lymphocytes against pathogenic invaders (inspired by the Review article on page 445).

The epic story of immune defence starts with the development of capable soldiers. On page 478, Howard Cedar and Yehudit Bergman describe the complex epigenetic mechanisms that determine the fate of haematopoietic stem cells and regulate their ranking in the innate and adaptive immune defence hierarchy.

The training of T cell soldiers gets more sophisticated. It is the thymus that educates and selects the most efficient T cells to be sent to the periphery. On page 469, Paul Love and Avinash Bhandoola describe the signalling events that direct T cell progenitors to the thymus, regulate their intrathymic wandering (during which they are positively or negatively selected) and, finally, permit the exit of self-tolerant but antigen-reactive T cells into the blood.

The involvement of the thymus in T cell development is now well established, but was unknown in the 1950s. A Timeline article on page 489 by Jacques Miller, who discovered the immunological function of the thymus 50 years ago, summarizes the milestones of thymic research.

Once in the periphery, T cells must be primed to start battling against pathogens. Dendritic cells trap antigens to be presented to T cells and produce cytokines to shape T cell function in response to the environment. A Poster by Miriam Merad that depicts the diverse functions of dendritic cells in the control of adaptive immunity is freely available at <http://www.nature.com/nri/posters/dendriticcells>, thanks to support from BioLegend.



LUCY BIRD



OLIVE LEAVY



KIRSTY MINTON



YVONNE BORDON



MARIA PAPTRIANTAFYLLOU

EDITORIAL OFFICES

LONDON NatureReviews@nature.com
The Macmillan Building, 4 Crinan Street,
London N1 9XW, UK

Tel: +44 (0)20 7843 3620;
Fax: +44 (0)20 7843 3629

CHIEF EDITOR: Lucy Bird

ACTING CHIEF EDITOR: Olive Leavy

SENIOR EDITOR: Kirsty Minton

ASSOCIATE EDITORS: Yvonne Bordon,
Maria Papatriantafyllou

COPY EDITOR: Isabel Woodman

SENIOR COPY EDITORS: Yukie Ozawa,
Catriona Rodwell, Man Tsuey Tse, Lucie Wootton

COPY EDITING MANAGER: Lewis Packwood

ART EDITOR: Simon Bradbrook

ART CONTROLLER: Susanne Harris

SENIOR ART EDITORS: Vicky Summersby,
Patrick Morgan, Kirsten Lee

MANAGING PRODUCTION EDITOR:

Judith Shadwell

SENIOR PRODUCTION EDITOR: Simon Fenwick

PRODUCTION CONTROLLER: Natalie Smith
SENIOR EDITORIAL ASSISTANT: Laura Corrs
EDITORIAL ASSISTANT: Ella Lines
WEB PRODUCTION MANAGER: Deborah Anthony
MARKETING MANAGERS: Tim Redding,
Leah Rodriguez

MANAGEMENT OFFICES

LONDON nature@nature.com
The Macmillan Building, 4 Crinan Street,
London N1 9XW, UK
Tel: +44 (0)20 7833 4000;
Fax: +44 (0)20 7843 4596/7

OFFICE MANAGER: Laura Firman

PUBLISHER: James Butcher

MANAGING DIRECTOR:

Steven Inchcombe

EDITOR-IN-CHIEF, NATURE PUBLICATIONS:

Philip Campbell

ASSOCIATE DIRECTORS: Jenny Henderson,
Dominic Pettit

EDITORIAL PRODUCTION DIRECTOR:

James McQuat

PRODUCTION DIRECTOR:

Yvonne Strong

DIRECTOR, WEB PUBLISHING:

Dan Pollock

HEAD OF WEB PRODUCTION:

Alexander Thurrell

NEW YORK nature@natureny.com

Nature Publishing Group,
75 Varick Street, 9th floor, New York,
NY 10013–1917, USA
Tel: +1 212 726 9200;
Fax: +1 212 696 9006

CHIEF TECHNOLOGY OFFICER:

Howard Ratner

HEAD OF INTERNAL SYSTEMS DEVELOPMENT:

Anthony Barrera

HEAD OF SOFTWARE SERVICES:

Luigi Squillante

GLOBAL HEAD OF ADVERTISING AND

SPONSORSHIP: Dean Sanderson

HEAD OF NATURE RESEARCH & REVIEWS

MARKETING: Sara Girard

TOKYO nature@natureasia.com

Chiyoda Building 5F, 2-37-1 Ichigayatamachi,
Shinjuku-ku, Tokyo 162–0843, Japan
Tel: +81 3 3267 8751; Fax: +81 3 3267 8746

ASIA–PACIFIC PUBLISHER: Antoine E. Bocquet

MANAGER: Koichi Nakamura

ASIA–PACIFIC SALES DIRECTOR:

Kate Yoneyama

SENIOR MARKETING MANAGER:

Peter Yoshihara

MARKETING/PRODUCTION MANAGER:

Takesh Murakami

INDIA SA/12 Ansari Road, Daryaganj,

New Delhi 110 002, India

Tel/Fax: +91 11 2324 4186

SALES AND MARKETING MANAGER, INDIA:

Harpal Singh Gill

Copyright © 2011 Nature Publishing Group

Research Highlight images courtesy of

Getty Images unless otherwise credited.

Printed in Wales by Cambrian Printers

on acid-free paper