29 THE EVOLUTIONARY PATH OF LEAST RESISTANCE
Evolution favored teeth with thicker enamel over sharply crested teeth in hominins confronted with tough diets
By P. S. Ungar and L. J. Hlusko

30 PROMOTING CNS REPAIR
What influences glial and neuronal response to neurodegeneration?
By E. G. Cameron and J. L. Goldberg

32 HOW CLIMATE CHANGE AFFECTS PLANTS’ SEX LIVES
Shifts in plant sex ratios help plant species to expand upslope in a warmer climate
By J. R. Etterson and S. J. Mazer

33 Yob MAKES MOSQUITOES MALE
A gender-switch gene opens avenues to malaria control
By S. P. Sinkins

35 REFORMS TO IMPROVE U.S. GOVERNMENT ACCOUNTABILITY
Bill will encode a “presumption of openness” into law
By A. B. Howard and P. McDermott

17 SCIENTISTS CHEER SENATE BILL
Long-awaited successor to COMPETES Act rejects controversial House approach to managing federal research
By J. Mervis

18 SOUTH AFRICA’S BID TO END AIDS
The tools exist, but the country’s epidemic—the largest in the world—won’t yield easily
By J. Cohen

26 HOW FRIGATE BIRDS SOAR AROUND THE DOLDRUMS
Frigate birds forage over vast distances by getting boosts from thermals and trade winds
By R. B. Huey and C. Deutsch

28 TIMING PHOTOEMISSION—FINAL STATE MATTERS
Ultrafast spectroscopy can track the electron dynamics of the photoemission process
By U. Bovensiepen and M. Ligges

15 RESEARCHERS RISE TO CHALLENGE OF REPLACING HELIUM-3
New nuclear detector technologies forgo scarce isotope
By R. Stone

14 FIGHTING AUTOIMMUNITY WITH IMMUNE CELLS
Engineered T cells can selectively destroy sources of enemy antibodies
By M. Leslie

12 ‘BREXIT’ CASTS PALL ON FUTURE OF U.K. SCIENCE
Funding, freedom of movement, and a voice in Europe’s science policy are all in question
By D. Clery

16 CFC BANS PAY OFF AS ANTARCTIC OZONE LAYER STARTS TO MEND
Study shows hole has shrunk since 2000 thanks to restrictions on chlorine chemicals
By E. Hand

33 Yob MAKES MOSQUITOES MALE
A gender-switch gene opens avenues to malaria control
By S. P. Sinkins

35 REFORMS TO IMPROVE U.S. GOVERNMENT ACCOUNTABILITY
Bill will encode a “presumption of openness” into law
By A. B. Howard and P. McDermott

News at a glance

Features

26 HOW FRIGATE BIRDS SOAR AROUND THE DOLDRUMS
Frigate birds forage over vast distances by getting boosts from thermals and trade winds
By R. B. Huey and C. Deutsch

28 TIMING PHOTOEMISSION—FINAL STATE MATTERS
Ultrafast spectroscopy can track the electron dynamics of the photoemission process
By U. Bovensiepen and M. Ligges

Letters

22 NEXTGEN VOICES

Policies

35 REFORMS TO IMPROVE U.S. GOVERNMENT ACCOUNTABILITY
Bill will encode a “presumption of openness” into law
By A. B. Howard and P. McDermott

Podcasts

15 RESEARCHERS RISE TO CHALLENGE OF REPLACING HELIUM-3
New nuclear detector technologies forgo scarce isotope
By R. Stone

16 CFC BANS PAY OFF AS ANTARCTIC OZONE LAYER STARTS TO MEND
Study shows hole has shrunk since 2000 thanks to restrictions on chlorine chemicals
By E. Hand

Science Careers

15 YEAST MAKES MOSQUITOES MALE
A gender-switch gene opens avenues to malaria control
By S. P. Sinkins

16 CFC BANS PAY OFF AS ANTARCTIC OZONE LAYER STARTS TO MEND
Study shows hole has shrunk since 2000 thanks to restrictions on chlorine chemicals
By E. Hand
chemically folding and regenerative success in the retina. A mechanism for the elimination of the female gamete centrosome in Drosophila melanogaster A. Pimenta-Marques et al.

55 Martian Geology
Large wind ripples on Mars: A record of atmospheric evolution M. G. A. Lopotre et al.

58 Solar Cells
A vacuum flash-assisted solution process for high-efficiency large-area perovskite solar cells X. Li et al.

62 Ultrafast Dynamics
Direct time-domain observation of astrocyte final-state lifetimes in photoemission from solids Z. Tuo et al.

67 Malaria Mosquitoes
A maleness gene in the malaria mosquito Anopheles gambiae E. Krzywinska et al.

69 Climate Change
Sex-specific responses to climate change in plants alter population sex ratio and performance W. K. Petry et al.

72 Carbon Cycle
Mycorrhizal association as a primary control of the CO₂ fertilization effect C. Terrer et al.

74 Bird Flight
Frigate birds track atmospheric conditions over months-long transoceanic flights H. Weimerskirch et al.

78 Transcription
Visualization and analysis of gene expression in tissue sections by spatial transcriptomics P. L. Ståhl et al.

83 Structural Biology
Elucidation of AMPA receptor-stargazin complexes by cryo-electron microscopy E. C. Twomey et al.

RESEARCH ARTICLES

43 Retinal Repair
Immune modulation by MANF promotes tissue repair and regenerative success in the retina J. Neves et al.

44 Centrosomes
A mechanism for the elimination of the female gamete centrosome in Drosophila melanogaster A. Pimenta-Marques et al.

45 Chemical Biology
Chemical genetic discovery of PARP targets reveals a role for PARP-1 in transcription elongation B. A. Gibson et al.

51 Organic Chemistry
Catalytic, asymmetric difluorination of alkenes to generate difluoromethylated stereocenters S. M. Banik et al.

55 Martian Geology
Large wind ripples on Mars: A record of atmospheric evolution M. G. A. Lopotre et al.

58 Solar Cells
A vacuum flash-assisted solution process for high-efficiency large-area perovskite solar cells X. Li et al.

62 Ultrafast Dynamics
Direct time-domain observation of astrocyte final-state lifetimes in photoemission from solids Z. Tuo et al.

67 Malaria Mosquitoes
A maleness gene in the malaria mosquito Anopheles gambiae E. Krzywinska et al.

69 Climate Change
Sex-specific responses to climate change in plants alter population sex ratio and performance W. K. Petry et al.

72 Carbon Cycle
Mycorrhizal association as a primary control of the CO₂ fertilization effect C. Terrer et al.

74 Bird Flight
Frigate birds track atmospheric conditions over months-long transoceanic flights H. Weimerskirch et al.

78 Transcription
Visualization and analysis of gene expression in tissue sections by spatial transcriptomics P. L. Ståhl et al.

83 Structural Biology
Elucidation of AMPA receptor-stargazin complexes by cryo-electron microscopy E. C. Twomey et al.

ON THE COVER
South Africa has pledged to end AIDS by 2030. Antiretroviral drugs like those on the cover are key to the effort because they make infected people less likely to transmit HIV. But with 18% of the world’s HIV-infected people, the country faces the huge challenge of ramping up treatment to all in need. See page 18. Photo: James Oatway

DEPARTMENTS

7 Editorial
Science and Brexit By Graeme Reid

94 Working Life
The measure of success By Melanie L. Blanchette

33 & 67 A genetic tool for malaria control?