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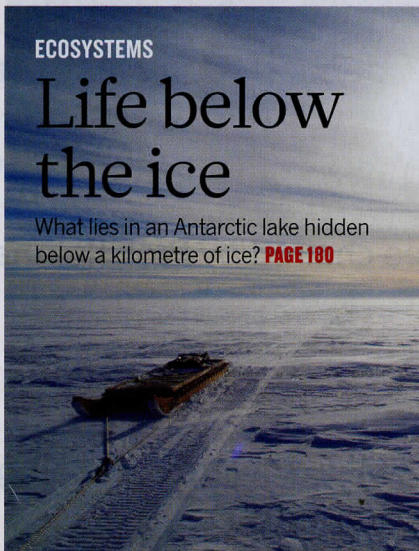
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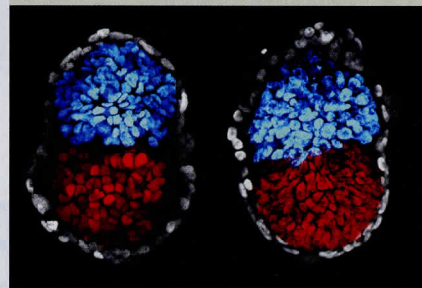
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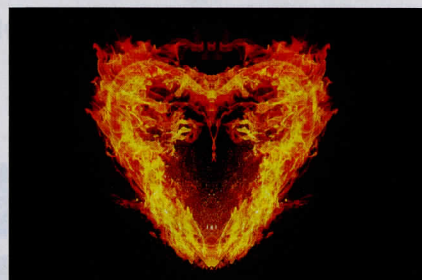
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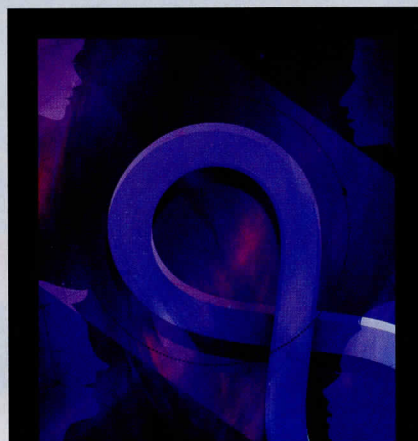
Microbes thwart viral infection using agents that can intercalate into DNA
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207 **CLIMATE-CHANGE ECOLOGY** Widespread but heterogeneous responses of Andean forests to climate change
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F Leroy et al.



ON THE COVER

Quantum networking

The ability to use quantum keys to encrypt communications has been limited to communication between two parties. In this issue, Sören Wengerowsky and colleagues demonstrate a fully connected quantum network architecture in which one source of entangled photons distributes quantum states to four users and allows each to generate a secret key for secure communication. [PAGE 225](#)

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287 **MOLECULAR BIOLOGY** Dna2 nuclease deficiency results in large and complex DNA insertions at chromosomal breaks
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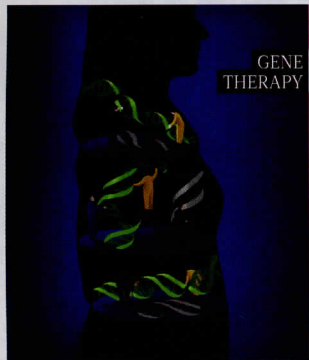
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OUTLOOK

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GENE THERAPY

natureOUTLOOK



Produced with support from



Revolutionary repairs

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S6 NEONATOLOGY

The fix is *in utero*

Hereditary diseases could one day be cured before birth

S9 PERSPECTIVE

A genetically augmented future

Ellen Wright Clayton on the ethics of gene therapy for bodily enhancement

S10 NEUROLOGY

Repairs for a runaway brain

Introducing genes into certain neurons could suppress epileptic seizures

S12 BLOOD DISEASE

Medicine is in the blood

Fixing the gene in sickle-cell disease

S14 DERMATOLOGY

Under the skin

Epidermal cells can be extracted and repaired to cure hereditary disorders



Gene therapy could eventually cure sickle-cell disease, but at a huge cost (see page S12).

S16 IMMUNOLOGY

A genetic shortcut

DNA can be used to stimulate the body into producing specific antibodies to fight infection

S18 THERAPEUTICS

Special delivery

Researchers are making designer viruses to deliver genes more efficiently and cost-effectively

S20 POLICY

Regulating a revolution

How are health authorities tackling the huge promises and potential risks of gene therapy?

S23 PERSPECTIVE

Access and affordability for all

Michael Sherman argues that the financial burden of gene therapy should be eased through value-based deals



MORE ONLINE

NATURE.COM

- To read about gene therapy in neurological disorders, visit: go.nature.com/2zvzirq
- For more on advances in gene-delivery methods, visit: go.nature.com/2kffpy3

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