MATERIALS SCIENCE

plastic that heals itself

When cracks form, they repair like wounds.

IN THIS ERA OF WORKS-TODAY, breaks-tomorrow gadgetry, the idea of a plastic that not only endures but actually repairs itself may sound far-fetched. But scientists at the University of Illinois at Urbana-Champaign have created just that: a synthetic material that automatically seals any tiny cracks that develop within it.

The work will be particularly valuable to the aerospace industry, the researchers say, because the material they were working with, a reinforced plastic known as a composite, is used in planes and satellites. The new self-repairing composite won't make large cracks magically disappear, but smaller ones—like the damage done to a plane's wing when it hits a bird—would automatically seal themselves, thus extending the craft's life.

The material relies on two substances: liquid dicyclopentadiene, a common ingredient of plastics, and a catalyst (the researchers'

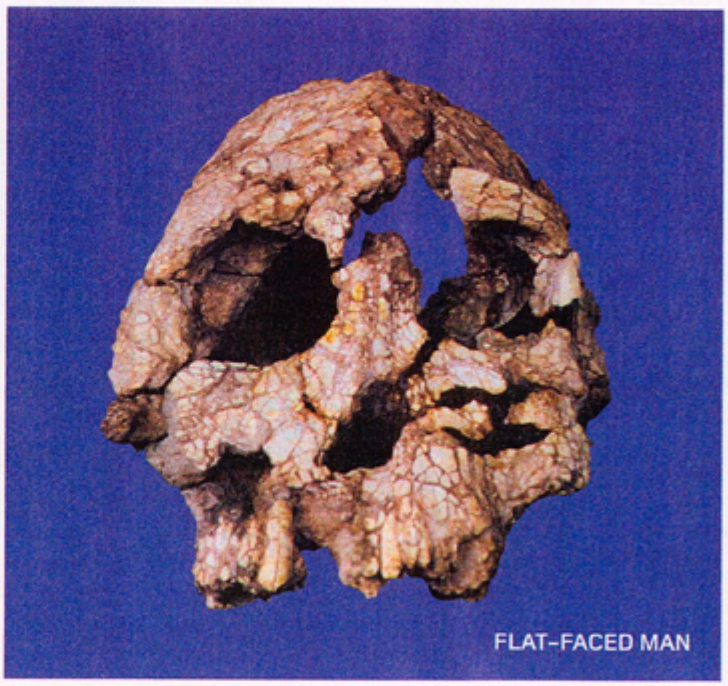
Runners Up

THREE OF THE TOP SCIENCE developments of 2001 were also chosen by POPULAR SCIENCE as among the year's 100 best products and innovations (see "The Best of What's New," Dec. '01).

- **Gleevec** was approved by the FDA in May to treat a form of leukemia. Unlike current cancer drugs, which poison the entire body as they eliminate unwanted cells, Gleevec targets a specific abnormal protein. It's stunningly effective and has no significant side effects.

- The **Abiocor** artificial heart was implanted last year in four patients. Unlike earlier artificial hearts, the Abiocor is self-contained; patients don't have to be connected to an outside power source.

- In February, the **NEAR Shoemaker** spacecraft became the first man-made object to land on an asteroid. The photos it took on the way down could provide clues to how the solar system was formed and the origin of the asteroid belt.



FLAT-FACED MAN

ANTHROPOLOGY

man of the year

A 3.5-million-year-old fossil suggests the human family tree is a lot more complicated than we knew.

A QUARTER-CENTURY AGO, ANTHROpologists found a skeleton in Ethiopia that they named Lucy, and since then she has held her position as a key human ancestor. But a newly discovered skull has cast doubt on Lucy's pedigree, throwing the study of human origins into confusion.

In March, researchers announced that while exploring near Lake Turkana in Kenya, they

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