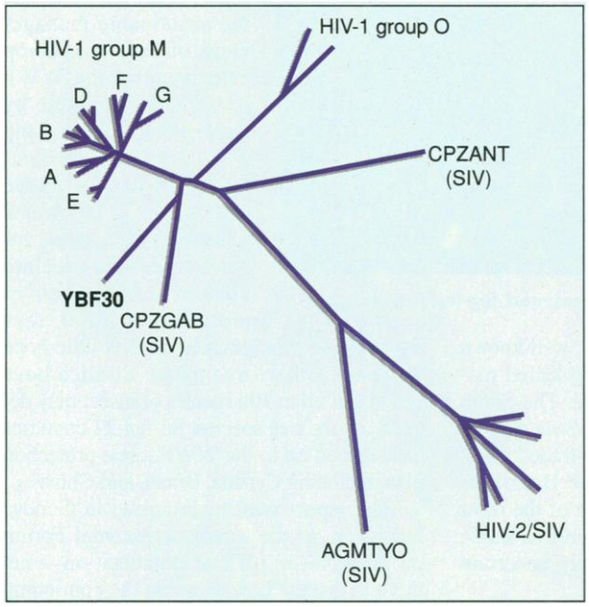
planting seismometers on opposite sides, may offer the definitive word on the core's mass and size. Still, Prospector scientists say that NASA's first moon mission since Apollo has taken more than a small step forward in lunar exploration. **–ROBERT IRION**

Robert Irion is a science writer in Santa Cruz, California.

AIDS RESEARCH

New HIV Strain Could Pose Health Threat

The human immunodeficiency virus (HIV), which causes AIDS, comes in so many genetic varieties that it is hard to keep them straight without a scorecard. Now, a team of AIDS researchers from France, Cameroon, and Gabon has added yet another branch to HIV's convoluted family tree: It has isolated a version of the virus from a Cameroonian woman who died of AIDS in 1995 that is sufficiently different from known strains that it may evade current blood tests. This new strain—which currently seems to be rare and localized—may provide new clues about HIV's origins, including when and how some viral strains might have jumped to humans from other primates.



Close cousins? New HIV-1 strain YBF30 may share a common ancestor with chimp SIV (CPZGAB).

GERRY DAVIS/PHOTOTAKE/PNI

Worldwide, most AIDS patients are infected with HIV-1, although a second virus, HIV-2, is responsible for some cases of a milder form of the disease in West Africa. HIV-1 itself is further subdivided into two genetically distinct groups, each of which is split into numerous subtypes separated roughly according to their geographical distribution. The new variant, designated YBF30, appears to be a member of an entirely separate third HIV-1 group, according to analyses published in the September issue of *Nature Medicine*.

The new strain was identified by a team led by virologist François Simon of the Bichat Hospital in Paris. The group includes French AIDS research pioneers Françoise Brun-Vézinet, also of Bichat Hospital, and Françoise Barré-Sinoussi of the Pasteur Institute in Paris. In 1994 and 1995, the researchers were conducting a study of HIV-1's genetic variability in Cameroon when they encountered a patient infected with a viral strain that was not detected by tests for the two already known groups of HIV-1: The M ("major") group, which accounts for the overwhelming majority of infections with HIV-1, and the O ("outlier") group, which is found almost exclusively in Cameroon. YBF30 did, however, react positively in a test for a strain of SIV—the simian version of HIV—isolated earlier from a chimpanzee in neighboring Gabon.

When YBF30's genome was later sequenced, the results confirmed that it belonged to a previously unknown group, which the team proposes calling the N group. Moreover, the sequence of one key part of YBF30's genome placed it much closer on the evolutionary tree to chimpanzee SIV than to either M group or O group HIV-1, although some other sections of the genome appear midway between chimpanzee SIV and M group HIV-1. AIDS researchers who spoke to *Science* found no reason to doubt that the YBF30 strain is the first discovered representative of a new HIV-1 group. "The data look good to me," says molecular virologist Beatrice Hahn of the University of Alabama, Birmingham.

The similarities between YBF30 and chimpanzee SIV suggest that the evolutionary ancestors of N group viruses might have been transmitted to humans from nonhuman primates. A similar scenario is thought to be responsible for the evolution of HIV-2, which is genetically similar to SIV strains that infect sooty mangabeys. Hahn says that chimpanzee-to-human transmission is a "likely" explanation for the existence of N group HIV-1, although she adds that it would be "hard to prove." Simon Wain-Hobson, an AIDS researcher at the Pasteur Institute, also cautions against drawing such conclusions too quickly, pointing out that only a

ScienceScope

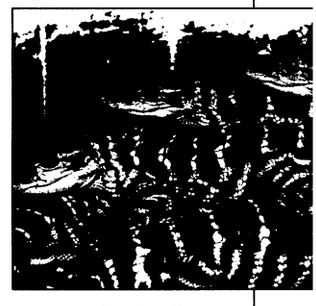
SOCIETIES LEAP INTO CALIFORNIA STANDARDS FRAY

The battle over science instruction in California is moving to a new front. This week, a group calling itself the "Scientists' Standards Project"—backed by the American Physical Society, the American Chemical Society, and the American Astronomical Society—charged that a draft set of science standards for state schools released in July stresses facts at the expense of concepts. They want the state Board of Education to give them a chance to revise the standards before the state finalizes them in October.

The debate erupted last fall, when the state got caught in a tug-of-war between two groups that wanted to draft the standards—one emphasizing facts and the other concepts (*Science*, 12 December 1997, p. 1885). Members from both groups produced a consensus draft of the standards in July. The draft represents a "very hard fought compromise," says Scott Hill, executive director of the California standards commission. He doubts substantial changes will be made before the October deadline.

EPA TO EXPOSE HORMONE IMPOSTORS

Environmental scientists are preparing for a massive chemical hunt. This month, the U.S. Environmental Protection Agency (EPA) finalizes plans for its endocrine disrupter screening program, which will require companies to spend millions of dollars to test thousands of chemicals for their potential to wreak havoc on the hormonal systems of people and wildlife.



Disrupted. Baby alligators.

Studies have shown that synthetic chemicals found in many common products—from pesticides to plastics—can mimic the behavior of estrogen and other hormones in wildlife, disrupting everything from sexual development to immune resistance. But it's not clear if the substances pose a threat to people. To find out, in 1996 Congress asked the EPA to identify the riskiest compounds.

The effort, to start later this year, won't provide all the answers, but Tufts University physician Ana Soto says screening is "an important first step."

few genome sequences of chimpanzee SIV are available for comparison. "I think it's too close a call," he says.

Although Hahn warns that the appearance of yet another viral strain is a "public health concern," researchers say that it is an open question whether N group viruses will spread beyond Cameroon. For example, when the team tested 700 blood samples from HIV-1–infected patients living in Cameroon to get an idea of YBF30's prevalence, only three samples were positive for the strain. And group O viruses, which were first identified in Cameroon in the early 1990s and have remained almost entirely restricted to that country, accounted for only 9% of the 700 infections.

Wain-Hobson believes that it might be largely a matter of "serendipity" which viral strains predominate in an epidemic, although he cautioned that any strain could become a danger under the right social and behavioral circumstances. "The M group probably exploded because it got into urban areas and got there sooner. If you introduce N group viruses into New York, you will get an epidemic." As a result, the paper's authors urge that HIV tests be modified to pick up the new strain. According to Simon: "A continuous search for new variants is necessary to assure the safety of blood donation. ... These viruses are on standby, waiting for favorable conditions." —MICHAEL BALTER

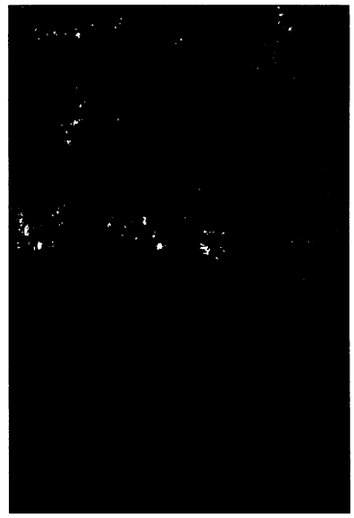
ECOLOGY

Study Finds 10% of Tree Species Under Threat

Hundreds of tree species worldwide are in imminent danger of being wiped out, according to a new report published last week by the World Conservation Monitoring Centre (WCMC), an independent nonprofit organization based in Cambridge, U.K. The report* points to 976 species that are critically endangered and facing extinction unless urgent action is taken, and it says thousands of other species are under threat. Indeed, the report's grim bottom line is that habitat destruction around the globe now threatens the survival of about 10% of the world's 100,000 species of trees.

"Trees are the fundamental components of many ecosystems and human economies, and this report highlights the plight of many species," says the WCMC's chief executive, Mark Collins. The 3-year study—funded by the Netherlands government with support from leading botanical and forest institutes internationally—follows a major study by Bird Life International in 1994 of the plight of birds around the globe that found 11% of species to be endangered. "The similarity in tree and bird species numbers under threat counters claims that ecologists are being alarmist and shows that habitat destruction is having a critical impact on wildlife," says population biologist John Lawton at Imperial College London. "Fossil evidence suggests that over most periods in the past, species extinctions occurred at the rate of one or two per year, so the present findings are extremely worrying."

Researchers found that more than three-quarters of the thousands of threatened tree species are not subject to any conservation measures. Only 12% of all tree species are recorded in protected areas, and only 8% of species are known to be in cultivation. "Unless conservation action is taken immediately, some species face certain extinction and many others will be joining the list of threatened trees," says WCMC's Sara Oldfield, who compiled the report. The list includes many globally well-known species such as African and big-leafed mahogany, ebony, and frankincense. The South American tree Pau brasil (*Caesalpnia echinata*)—a source of wine-red dye traded since the 16th century, which gave Brazil its name—is also threatened. Some of the most critical species have been reduced to a single specimen whose future is highly uncertain (see table).



Threatened. Big-leafed mahogany.

R. C. CARPENTER/PHOTO RESEARCHERS

Although 80% of tree species are in the tropics, some species are under threat in virtually every country. Malaysia has the highest number of critically endangered species at 197. Indonesia, recently ravaged by forest fires, has 121, India has 48, and Brazil, the most heavily forested country on the planet, has 38. In the United States, Hawaii has many threatened species. The report highlights critical gaps in its coverage because of difficulties in determining the species within certain families of trees and in surveying some regions of the world such as Papua New Guinea. But the design of the database will allow continual updating as work will continue to tackle these problems, the report says.

Conservationist Steve Howard of the World Wide Fund (WWF) for nature says that, with 77 species already known to have become extinct in the recent past, this report has confirmed fears of a widespread problem. The report itself suggests that the sustainable management of forests is a top priority, and the WWF is backing a scheme by the Forestry Stewardship Council to independently certify well-managed forests. The WWF, which is also campaigning for each country to declare 10% of its forest cover protected by 2000, says that without care for trees there is little hope for many other organisms. Studies have found that up to 300 species of insect may depend on one tree species. So far, 22 countries have signed on to the WWF forest protection plan, including Canada, Brazil, and China.

The report was made public in Geneva last week, as the Intergovernmental Forum on Forests—an official organization—met there to discuss how to tackle the continuing crisis facing the world's forests. The forum is following up commitments made by countries to prevent species losses in the Convention on Biological Diversity drawn up in Rio de Janeiro in 1992.

—NIGEL WILLIAMS

SOME SPECIES IN CRITICAL CONDITION

Country	Tree	Remaining	Threats/Cause of Decline
Mauritius	*Diospyros angulata*	1 tree known	Habitat loss and invasive species preventing regeneration
China	*Carpinus putoensis*	1 tree remains	Habitat loss
Tanzania	*Holmskioldia gigas*	1 tree remains	Habitat loss
U.S.A. (Hawaii)	*Hibiscus clayi*	4 trees remain	Habitat degradation due to invasive plants, feral pigs, and potential recreational activities
Ecuador (Galápagos Islands)	*Scalesia atractyloides*	3 trees known	Grazing by introduced goats
India	*Ilex khasiana*	3 or 4 trees	Habitat loss

SOURCE: WCMC

* *The World List of Threatened Trees*, World Conservation Press, Cambridge, U.K. ISBN: 1 899628 10 X.