map of the terrestrial ecoregions of Latin America and the Caribbean released by the WWF and the World Bank last year—a forerunner to the Global 200 map—has helped shape planning for the region by the Nature Conservancy and the World Bank. Argentina is in the midst of developing a national, ecoregion-based conservation plan. And upon release of the Global 200 map, the President of the Republic of Sahka, formerly Yukatia, in eastern Russia, protected 70 million hectares of taiga, according to the WWF.

One place already testing the ecosystem approach for selecting protected areas is the Caribbean nation of Trinidad and Tobago. Although it was never considered a biodiversity hot spot, it has an abundance of ecosystem types, including montane rain forests, savannahs, wetlands, and coral reefs. "Trinidad and Tobago had no properly protected areas—it was a blank slate, a real opportunity to start from scratch and propose a network of natural areas using good science," says Stan Temple, a conservation biologist at the University of Wisconsin in Madison who worked there in 1995–96.

To select and design potential reserve sites, last January Temple and the local Caribbean Forest Conservation Association launched a priority-setting exercise. Using remote-sensing imagery, they first determined that only 20% of the islands remained in a fairly natural state. Then they used maps of elevation and vegetation to identify the islands' ecosystem types. Since it appeared that, generally, birds were a good indicator of biodiversity on the islands, they developed a computer model based on vegetation and elevation maps to predict where the islands' 420 bird species would be concentrated. Later, consultations with ecotourism guides validated the model's predictions of bird distributions. Then they pinpointed the rarest ecosystems, using ferns as indicator species for minimally disturbed areas. By August, the team had a proposal for eight protected areas ranging in size from 643,000 hectares of tropical montane forest to 700 hectares of mangroves and a coral reef.

That month, the World Bank agreed to help Trinidad and Tobago implement the plan. But whether the islands' ecosystems are added to the world's reserve network will depend on passage of new national legislation and development of conservation policies. Says Temple, "The islands now need to start thinking in terms of the long-term strategies for moving [the areas] steadily toward protection and management."

As Jenkins points out, conservation value isn't the only thing that determines which sites actually get protected. Whether planners use the ecosystem or hot spots approach, he says, when it comes down to selecting actual sites "the biggest problems often are the practicalities—availability of lands, money, and capturing the attention of decision-makers." For these islands and for the ecosystem approach to saving biodiversity, the future looks promising, but the next steps will be crucial.

–Karen Schmidt

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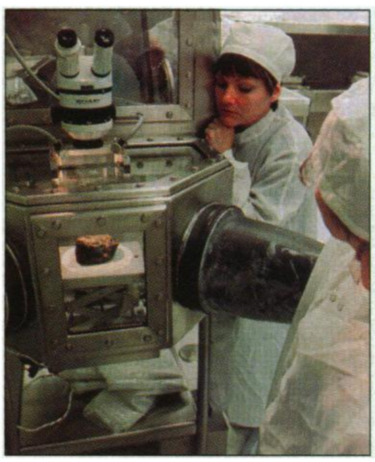
LIFE ON MARS

Martian Rocks Tell Divergent Stories

The life on Mars story took on new life of its own last week, as the international scientific community tried to fathom the meaning behind two dueling studies of meteorites from Mars. One study by a British team follows up on the original claim—that minerals deposited 3 billion years ago in a bit of Martian crust that later fell to Earth carry the hallmarks of past life (*Science*, 16 August, pp. 864 and 924). Making a bold splash in the press, the team cited strong new evidence of ancient life in both the original Martian meteorite and a second one. But another study, presented with less fanfare at an American geological meeting, suggests that both meteorites may bear the remains of Earthly contamination instead.

To most researchers, this round leaves the story little closer to a resolution. But the public was clearly wowed by the British work by meteoriticists Colin Pillinger, Ian Wright, and Monica Grady of The Open University in Milton Keynes, who presented their as-yet unpublished data at a meeting at the Royal Society in London and later gave a press conference. They analyzed the isotopic composition of three samples from carbonate globules in the original Martian meteorite, ALH84001, focusing on the proportion of carbon isotopes. The ratio of carbon-13 to carbon-12 can suggest life, since metabolic processes deplete organic matter of heavy carbon. In earlier work, the team had detected moderate isotopic depletion in a different Martian meteorite. This time, they found dramatic depletion in one of their three samples, to values about twice as light as most terrestrial organic matter. On Earth, the only credible source of such light carbon would be the methane produced by certain microbes, implying that this sample indeed holds traces of ancient life.



DAVID J. PHILLIP/AP

Good sample? Meteorite ALH84001 won't get dirty now, but did it before?

Everett Gibson of NASA's Johnson Space Center, who co-led the group that first found evidence for life on Mars, says he's pleased with the new support. He notes that if these findings hold up, then life may have existed on the Red Planet over much of its history: the meteorite that the Open University team analyzed previously, EETA79001, was ejected from Mars just 600,000 years ago.

Then again, the finding may say nothing about life on Mars, if Jeffrey Bada is right about Earthly contamination of Antarctic meteorites. The Scripps Institution of Oceanography geochemist spoke last week at an early Sunday session at the Geological Society of America in Denver. Last year, Bada analyzed the amino acids in bits of EETA79001; some meteorites carry these compounds, presumably made by nonbiological processes. But the composition and L configuration of this meteorite's amino acids matched those on Earth. And Antarctic ice carries a surprising amount of such amino acids, Bada says.

Now, in the same meteorite, Bada has found an Earthly signature in another set of compounds—the polycyclic aromatic hydrocarbons (PAHs) that Gibson's team found in ALH84001 and interpreted as the degradation products of life. Bada saw a similar spectrum of PAH size and structure in EETA79001 and in Antarctic ice—a spectrum much like that of ALH84001. Since both Martian meteorites spent thousands of years in Antarctic ice, Bada sees contamination problems for both. "This looks like stuff from Earth," he says. "It's extremely dangerous to make these bold claims."

Wright counters that "there are no terrestrial contaminants" on Antarctic ice that could account for the extreme isotope values in ALH84001. And contaminating only a few specks inside a single rock is highly unlikely, he adds. What's needed to sort all this out, researchers say, is more analysis and more communication. The two groups have two very different kinds of data, notes geochemist John Hayes of the Woods Hole Oceanographic Institution. "Until they get together, it's really tough to say much."

–Richard A. Kerr