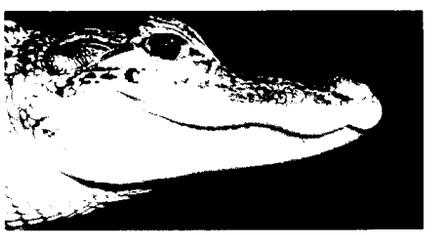
Eisner, "the evidence seems overwhelming that in the case of the Endangered Species Act, we are not dealing with a situation in which legitimate goals conflict; rather we are witnessing a struggle to keep mankind's long-term options open in the face of threats by short-term interests."

At congressional hearings, it appeared that the bulk of scientific knowledge resides with those who are concerned with species protection. Developers are fond of laughingly asking the rhetorical question, "what is the value of the snail darter?" In fact, as Parenteau of the National Wildlife Federation points out, any species can act as "a miner's canary for monitoring the health of the environment." The weakening of the shells of falcon and eagle eggs, for example, pointed up the extensive penetration of DDT. The depletion of an aquatic species can signal growing levels of pollution or excessive diversions of water.

Elimination of lower species from protection of the act would be the height of folly, according to Stanford biologist Paul Ehrlich, who observes that microorganisms are the workhorses in "ecosystem services." He says, "Every population you wipe out is a working part of a system" that can be providing pest control, soil maintenance, climate amelioration, nutrient cycling, waste disposal, air and water purification, flood control, and myriad other functions.



E. P. Haddon/USFWS

The world faces an unprecedented and probably unavoidable tragedy of unspeakable proportions in the coming decades. According to a National Research Council report on tropical biology, 1 million species may be lost by the end of this century, and more than half of all existing species could cease to exist by 2100.

In view of what is happening in the tropics, the protection offered by the Endangered Species Act may seem small. But as scientists insist, the law is vitally important as a symbol worldwide. If Congress does not take a firm position defending the act this year it will become increasingly difficult to establish and defend the principle that mankind's well-being depends on diversity of species.

—CONSTANCE HOLDEN

Astronomer May Be Barred from Telescopes

How far can a scientist wander from the mainstream before his colleagues cut him off? A California astronomer is confronting that question now.

For 15 years, Halton C. Arp of the Carnegie Institution's Pasadena office has maintained that a key tenet of contemporary astronomy could be dead wrong. Quasars, he says, may not be immensely bright objects at immensely great distances; at least some of them may be dimmer entities associated with relatively nearby galaxies. He suspects that their high redshifts—commonly taken to indicate great distance from Earth—are actually due to some new principle of physics.

Over the years he has collected some provocative examples of quasars that indeed seem to cluster around visible galaxies. In certain cases the objects appear to be connected to those galaxies by faint tendrils of material. But the majority of Arp's colleagues have found his examples less than convincing, and Arp has gradually found himself more and more isolated. When quasars were new, the debate was stimulating, astronomer Leonard Searle recently told the Los Angeles *Times*. After nearly two decades, it has become "sterile and unproductive."

Now, the *Times* reports, the committee that allocates observing time on the Mt. Wilson, Palomar, and Las Companas, Chile, telescopes, has recommended that Arp either prove his case, take a new research tack, or be denied further observing time after this year. The recommendation, made last November in a letter addressed to the directors of the observatories, was only recently made public.

Wanting to avoid the appearance of suppressing an unorthodox view, the committee members said, they had been allocating Arp generous blocks of observing time over the years, even though they unanimously felt that there was little scientific merit in doing so. This year's grant of time was only made because of Arp's senior standing in the community.

The recommendation came as a surprise to Arp, who has always professed to enjoy the debate with his colleagues. "What was particularly upsetting," he says, "was their statement that they couldn't see where [my] research was leading."

Apparently it was not an easy decision for the committee. "No committee member is ever 100 percent certain he is right," one scientist said. "Everybody is aware of cases where a scientist regarded as wrong later turned out to be right. It boils down to this: You make a judgment and you simply do the best you can at that time and place."

Contacted by *Science*, Arp emphasized that his access to the telescopes has not yet been denied. The final decision will not come until the committee meets again in October, and everyone is trying to stay calm until then. "I hope they will actually look at the scientific validity of the observations," he says. "And if they do that, I think they will grant the time."—***M. Mitchell Waldrop***

White House Science Committee Formed

A panel of 13 scientists has been named to advise George A. Keyworth, director of the Office of Science and Technology Policy (OSTP) and science adviser to President Reagan. The committee, known as the White House Science Council (the acronym is pronounced whisk), contains several familiar faces on the Washington science policy circuit and two individuals generally regarded as being on the right wing of the scientific establishment—Edward Teller and Harold Agnew. All the members are male, and most of them are physicists.

The committee is, in theory, the highest level scientific advisory committee in the federal government. But it will be much less powerful than the old President's Science Advisory Committee (PSAC), which was formed in 1957 by President Eisenhower and abolished in 1973 by President Nixon. PSAC formally reported directly to the President; WHSC will report to the President's science adviser.

Indeed, in an interview late last year, Keyworth made clear that he had no intention of resurrecting PSAC. The new committee will func-

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tion as an appendage to OSTP, working on studies assigned by Keyworth and generally advising on issues of immediate concern to OSTP.

Keyworth originally intended to have the committee meet at least once a month, but current plans are for about six meetings a year. According to Thomas Johnson, an assistant to Keyworth who will provide staff work for the committee, separate panels may be formed and they will meet more frequently.

OSTP officials decline to discuss what topics the committee is likely to tackle until the members themselves have been notified. The committee will, however, come under the terms of the Advisory Committee Act, which means that announcements of its meetings will appear in the *Federal Register*, and the gatherings will be open to the public unless they deal with classified matters. The first meeting will be held in March.

Following are the names and affiliations of the committee members:

Harold M. Agnew
President
General Atomic Company

John Bardeen
Emeritus Professor of Electrical Engineering and Physics
University of Illinois, Urbana

D. Allan Bromley
Henry Ford II Professor of Physics
Yale University

Solomon J. Buchsbaum (Chairman)
Executive Vice President
Bell Laboratories

George A. Cowan
Laboratory Senior Fellow
Los Alamos National Laboratory

Edward E. David
President
Exxon Research and Engineering Company

Donald S. Fredrickson
Fellow-in-Residence
National Academy of Sciences

Edward Frieman (Vice Chairman)
Vice President
Science Applications, Inc.

Paul E. Gray
President
Massachusetts Institute of Technology

Robert O. Hunter, Jr.
President
Western Research Company

Arthur K. Kerman
Director
Center for Theoretical Physics
Massachusetts Institute of Technology

David Packard
Chairman of the Board
Hewlett-Packard Company

Edward Teller
Senior Research Fellow
Hoover Institution
Stanford University

—Colin Norman

Corrosion May Not Be Prime Culprit at Ginna

It appears that bad workmanship, not corrosion, led to the emergency shutdown of the Ginna nuclear plant near Rochester, New York, on 25 January. The owner of the plant, the Rochester Gas and Electric Company, has now completed a preliminary inspection of the steam generator that sprang a leak and caused the plant to vent radioactive gases into the atmosphere. The most significant finding is that sloppy maintenance may have caused the accident. Corrosion was originally thought to have been the culprit.

According to the utility's spokesman, Richard Peck, the inspection revealed that there were three foreign objects in the steam generator at the time of the accident: a 7-inch-long piece of heavy boiler-plate metal and two relatively thin pieces of metal. These items apparently were left in the vessel by workmen who had made repairs on the steam system in 1975. The company believes that fast-flowing steam and water may have tossed the metal pieces about in the steam vessel and knocked them against the small tubes that carry pressurized hot water from the reactor.

The inspection found that one of the tubes carrying hot water had burst open in a "fishmouth" break about 5 inches long. This caused a big leak of about 700 gallons a minute. Company officials think the break was not produced by normal corrosion because it occurred in an area which has not corroded in the past—a section of tube midway between support plates. Corrosion generally occurs at the point where a tube meets a support plate. In addition, 16 other pipes were badly damaged.

According to the Nuclear Regulatory Commission (NRC), corrosion and "denting" of tubes and support plates have caused small leaks in the steam generators of dozens of pressurized water reactors. However, there have been only four major leaks: one at Point Beach 1 in Wisconsin in 1975, one at Surry 2 in Virginia in 1976, one at Prairie Island 1 in Minnesota in 1979, and the recent one in January at Ginna. The last two were by far the most serious in terms of the size of the leak. And, significantly, they appear to have been caused by the same kind of sloppy maintenance. At Prairie Island, the damage was done after workmen cleaning out sludge left a piece of hose in the steam generator. The fabric wore away and exposed the wire spring in the hose. The spring, agitated by the flow of steam and water, battered against the pipes and eventually knocked a hole in one of them, causing a leak of about 400 gallons a minute. That, in any case, is the NRC's accepted theory of what happened.

The latest news from Ginna may be encouraging in one respect: it suggests that the very common problem of corrosion will not necessarily lead to the kind of leak that occurred in January. Yet at the same time the Ginna accident raises a warning. It points up one of the great weaknesses of nuclear plants: that they are quite vulnerable to common human error and intolerant of sloppiness. The utilities running the 30 or so plants with corroded steam generators will have to keep this in mind as they undertake the special kinds of maintenance—sludge removal and hole plugging—that contributed to the leaks at Ginna and Prairie Island. No doubt this will raise the cost of maintenance.***—Eliot Marshall***

Wyngaarden Nominated as Director of NIH

James B. Wyngaarden, chairman of the Department of Medicine at Duke University, has finally been nominated by President Reagan as the new director of the National Institutes of Health (NIH). The official announcement, made on 19 February, had been stalled in the White House for at least 2 months for no apparent reason. Wyngaarden's nomination now goes to the Senate for confirmation, which is expected.

Once Wyngaarden is in office, he will have several top NIH posts to fill. The directorships of five institutes are now vacant, and the head of the National Institute on Aging, Robert Butler, recently announced that he will also be leaving his post later this year.***—Marjorie Sun***