

the recombination happens at a U center, the energy changes the U center into an F center with 100 percent quantum efficiency. Recombination at an F center causes the reverse change, so the net number of F centers created is the difference between the one process and the other.

The net F centers thus produced are essentially stable and produce an essentially permanent coloration of the crystal, unlike some other means of F center pro-

duction, which produce a transient coloration. Such crystals can be used in photochromic devices, where illumination with a particular kind of light changes the color of something. The relative permanence of these F centers makes them useful in new ways. One of especial interest to the Bell Labs group is the possibility of a distributed-feedback F-center laser, and they say in a footnote that they have taken some preliminary steps toward such a device. □

Nessie: New name, same old controversy

The Loch Ness monster last week earned about as much recognition as the scientific community ever bestows on things that may not exist: the fancy new name *Nessiteras rhombopteryx*. However, the old affectionate title "Nessie" seems as likely to persist as the controversy.

The occasion was the publication in the Dec. 11 *NATURE* of new photographs showing what might appear to be a swimming, long-necked reptile with diamond-shaped flippers. (Hence the suggested name: *Nessiteras*, Ness monster; *rhombopteryx*, diamond fin.) The photos and accompanying sonar traces are the work of a dedicated amateur, Robert Rines, a Boston lawyer who has been coming to Scotland every summer since 1970 to gather evidence. A symposium to discuss the new evidence had also been scheduled for Dec. 9 and 10, but was canceled after publicity arose from Rines's reported attempts to sell the pictures for large sums. The article, by Rines and British naturalist Sir Peter Scott, appears in the "Comment and Opinion" section of *NATURE* and thus did not require the usual peer review procedure.

By piecing together evidence from the photographs and corresponding descriptions from eyewitnesses (going back to St. Columba in A.D. 565), Rines and Scott propose the following picture of Nessie: A viable group of animals, perhaps about 30 in number, would have to be present to perpetuate the species. The one in the wholebody photograph appears to be 45 to 60 feet long, they suggest, including a 9- to 12-foot neck. The detailed picture of the flipper appears to show the right rear limb, with a rough textured skin and suggestion of ribs. Another photograph, not printed, suggests to them a smallish head, with possible protuberances. One sonar trace, they say, indicates the presence of two animals.

Many experts remain unconvinced, including a group of scientists from London's Natural History Museum who declared publicly that Nessie's existence has not yet been proved, fancy name or no. (One practical consequence: Rines apparently does not win a \$20,000 reward offered by one newspaper to anyone proving the monster's existence incontrovertibly.) Another scientist said the photos

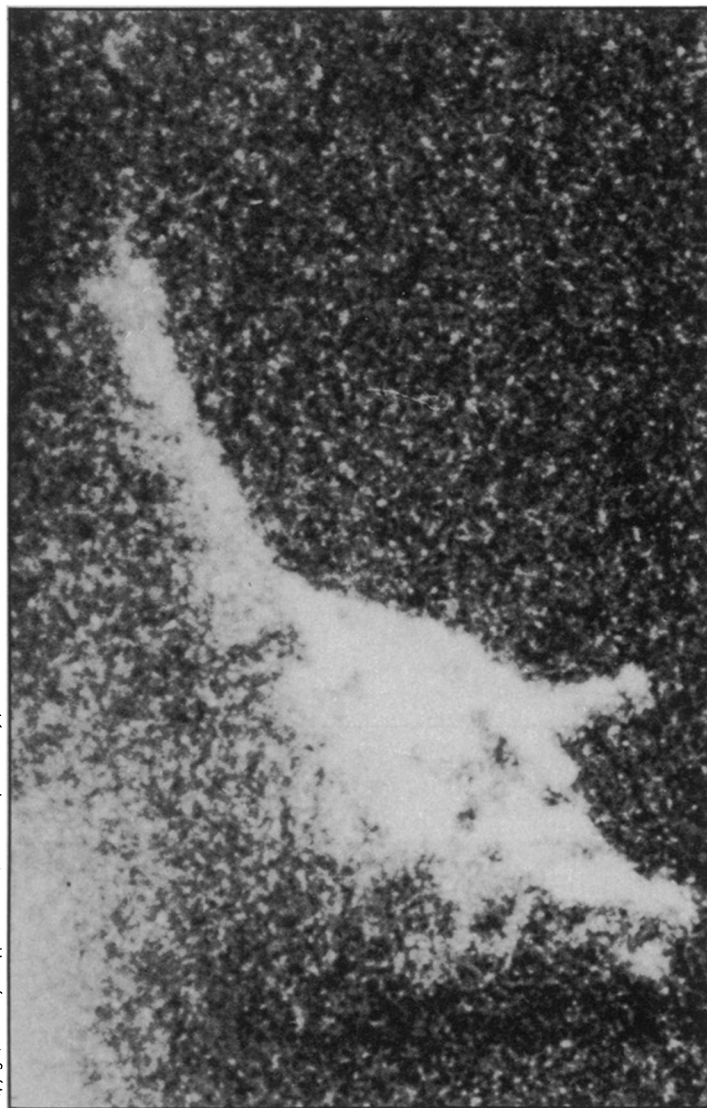
looked like a sunken Viking ship. But Scott says he's convinced that at least there was no intentional fraud on the part of the observer. He told a press conference in London that one object of formally naming the creature was to ensure it protection under the country's new conservation law. (The punishment: only \$200.)

Rines and Scott acknowledge that it "is clearly unsatisfactory, from a zoological point of view, to base a name on photographs rather than on remains of an animal," but say description from an il-

lustration is permitted by the International Code of Zoological Nomenclature.

Like an evolving theology, for those who want to believe, the photos offer new possibilities. If the protuberances on the head are for breathing, the animal could easily come to the surface without being detected. The Loch appears to have plenty of fish, weeds or other organic matter to support that hypothesized herd. If Nessie is a cannibal, this could explain why no dead specimens have ever been found. Unfortunately, however, even though they were computer enhanced, using the expertise of the Jet Propulsion Laboratory, the pictures could still be taken for a sad-eyed mole with a long tail. Loch Ness water is extremely murky.

Rines hopes to return to Loch Ness for another try, using sonar-linked underwater television cameras. As for the controversy, *NATURE* editor David Davies told *SCIENCE NEWS* in London, "Oh, it's just what Fleet Street [the newspaper district] needs before Christmas." And as if to further the lighthearted spirit of the holiday, the usually sober magazine presented an article on oceanography in alternately rhyming iambic triameter. □



This is the "wholebody" photograph that Rines claims shows "the head and neck (7 to 12 feet in length) together with part of the body, with appendages" of Nessie. It was taken by strobe flash at a depth of 35 feet in Loch Ness on June 20, 1975. *NATURE* editor David Davies emphasizes that Rines's article and photos are published in the journal's opinion section and that *NATURE* does not vouch for the validity of the claims.