RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Ocean Yields Hottest Life Yet

A type of microorganism has been identified that thrives at the hottest temperature yet associated with any living creature: 113 degrees Celsius.

The new archaebacterium was isolated by a team of U.S. and German researchers exploring a hot vent in the mid-Atlantic Ridge southwest of the Azores with the research submersible *Alvin*. The creature has been named *Pyrolobus fumarii*, or fire lobe of the chimney, a reference to its lobed shape and the "black smoker" type of vent in which it was found.

According to a report in this month's issue of *Extremophiles*, the bug grows at temperatures between 90°C and 113°C. While that exceeds the boiling point of water at sea level, it's far below boiling in the intense pressures exerted at its home depth of 3650 meters. *Pyrolobus* can live without organic matter—it subsists on hydrogen and sulfurous compounds. It can also use nitrate or small amounts of oxygen. It's "very versatile," says marine microbiologist Holger Jannasch of the Woods Hole Oceanographic Institution, as it can live with or without oxygen. "One thinks an organism that can take such extreme conditions would be very specialized, but it isn't," says Jannasch, who is on the research team along with microbiologist Carl Stetter of the University of Regensburg.

The find adds to evidence that the ingredients for life can be pretty simple, notes marine microbiologist Ed DeLong of the University of California, Santa Barbara. He says that, along with water, "as long as you have some kind of energy source like hydrogen that can be produced geochemically, you have elements necessary for life." Indeed, the new microbe "expands the possibility" of life on other planets, says Jannasch, as such a creature might inhabit underwater volcanoes or hot vents under the surface of Mars, or, perhaps, on Jupiter's moon Europa.

Catching a Runaway

Astronomers have long puzzled over the origin of certain stars that race through space as if propelled by a cosmic slingshot. More than 30 years ago, the Dutch astronomer Adriaan Blaauw proposed that such "runaway" stars originate in binary systems, in which two heavy stars circle each other closely at high speed. When one of the stars explodes as a supernova, he theorized, its companion, released from its gravitational pull, shoots away. In some cases, the system would stay together as the supernova remnant continued to orbit around the racing star.

Until recently, no observations have confirmed Blaauw's theory. "Everybody has been looking for supernova remnants around runaway stars, and they couldn't find any," says Lex Kapers of the European Southern Observatory (ESO) in Garching, Germany. Now Kapers and colleagues at ESO and the University of Amsterdam have looked at a familiar star that is known to be accompanied by a supernova remnant and found that it qualifies as a runaway, thus nailing down the theory. They did this by spotting the "bow shock" created by the star as it speeds through space.

Seeing the bow shock—created when the speeding star, like a supersonic jet, compresses matter in front of it—is difficult because of its weak luminosity. But astronomers were able to spot the phenomenon when they used sensitive instruments to look at the star with its companion, a pulsar called Vela X-1, at the ESO La Silla observatory in Chile.

Ironically, says Kapers, whose report appears in the 20 January *Astrophysical Journal*, the pulsar and its big star are well known to astronomers. But until the bow shock was seen, it could not be securely identified as a runaway system. Says Robert Mochkovitch of the Institut d'Astrophysique de Paris: "It's nice to find the confirmation of an old theory."

ESO

Space ripple. Runaway creates bow wave. The star's brightness saturated the detector, leaving the light cross.

No Turtles for *Joy*

Sea turtles are getting tossed overboard in the latest edition of the *Joy of Cooking*. A recipe for the endangered animals, which has been faithfully reproduced since the classic cookbook was first issued in 1931, will be deleted from the upcoming 1997 edition after it left a bad taste in the mouths of Florida conservationists.

The Depression-era cookbook features recipes for everything from squirrel stew to pigs' brains, including step-by-step directions on how to keep, clean, and eat "green or sea turtles." It even suggests additional reading for gourmets, *The Windward Road*, a classic survey of turtle behavior by Archie Carr, founder of the Sea Turtle Survival League.

Sue Ellen Smith of the league in Gainesville, Florida, contacted the publisher, Scribner in New York City, after noticing the recipe in the 1996 paperback edition of the cookbook. In a 4 February letter to the league, editor Ethan Becker assured the group that no sea turtles will appear in the 1997 edition.

The *Joy of Cooking* is currently undergoing a "profound revision," says Scribner spokesperson Beth Wareham, which includes reviewing all 4100 recipes for environmental benignity. "It has to match the modern world," she says. A recipe for beaver tail is also being deep-sixed.

Tumbledown pyramid. The Population Reference Bureau (PRB) reports that the Russian birthrate fell to the lowest in its history last year, and Russian women are now averaging 1.3 children apiece. The decline, which was "sharper than expected," suggests that Russians are looking to the future with little but "gloom," says the PRB. At the present birthrate, the population will fall from the present level of 147.5 million to 123 million by 2030—with the proportion of elderly threatening to crush pension systems.