Blood loss from childbirth brought severe anemia and, often, death to women in medieval times.

Staatliche Kunstsammlungen, Dresden.

that the early medieval diet provided.

Bullough and Campbell contend that most early medieval women were anemic by age 23. Though anemia rarely causes death, it cuts the blood's oxygen carrying capacity, increasing the chances of fatality from pneumonia, bronchitis, and heart problems. It also heightens the impact of even moderate blood loss during childbirth, which the authors rate as the leading cause of anemia-related death among early medieval women.

Iron intake for men and women increased by the 10th century throughout Europe. Development of the three-field crop rotation system, an advance over the earlier two-field method, enabled peasants to plant protein-rich legumes in the spring. Food animals such as the rabbit spread north from Spain, while fish and pork became staples; more meat meant more iron.

Women benefitted most from these changes. Fifteenth-century surveys show women outnumbering men by 9 to 20 percent. Aristotle's theory needed a new twist. Thinkers such as Albertus Magnus (c. 1200–80) concluded that women overcame men's natural advantage in longevity thanks to the "purifying effects" of menstruation, women's lighter work load, and the smaller amounts of physical energy they expended during sexual intercourse.

Superbubble in the Sky

"Stalking the Cygnus Superbubble" by Webster Cash and Philip Charles, in *Sky and Telescope* (June 1980), Sky Publishing Co., 49 Bay State Rd., Cambridge, Mass. 02238.

Ten years ago, the gases between the stars were thought to be relatively cool—with dense clouds at −300°F floating in a bath of more dilute gases warmed to 18,000°F by cosmic rays. But astronomers have

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learned that space contains huge gas fields heated above 1.8 million°F by shock waves from supernovae, exploded stars that emit vast amounts of energy.

Last year, using telescopes aboard an orbiting satellite, scientists discovered one such field—the largest known object in the galaxy—measuring 1,000 light years across in the constellation Cygnus. This "superbubble," located near the center of the Milky Way (Earth is on the outer edge), and others like it, may be prime engines of star formation, report Cash and Charles, astronomers at the University of Colorado and the University of California, Berkeley.

What process could have created such an object? The gas clouds from supernovae typically measure only 100 light years across. And there are not enough young, massive stars in Cygnus to create such energy, either through collisions with stellar winds or through the emission of ultraviolet radiation.

The authors theorize that, over eons, a series of supernovae near the heart of the galaxy, where stars are thickly clustered, produced the bubble. The shock waves from early explosions struck the Great Rift of Cygnus, a dark cloud of dust 600 by 1,200 light years, containing enough matter (mainly hydrogen) to make millions of stars. The shock waves pushed the material on the cloud's edge into enormous lumps that eventually became stars. Some of the new stars were unstable giants that ultimately went supernova themselves. The expanding remnants of these supernovae together formed the super bubble, which continues both to grow and to "manufacture" new stars.

Previous theories depicted star formation as a much less violent process, resulting from the slow gravitational attraction of cosmic dust. Noting that huge gas fields have recently been discovered relatively near Earth, Charles and Cash believe that superbubbles are sprinkled throughout the galaxy and may contain half the energy in interstellar space. In fact, they say, the sun and Earth were probably created at the edge of a superbubble 4.5 billion years ago.

RESOURCES & ENVIRONMENT

A Nuclear Recession?

"Nuclear Power and Nuclear Bombs" by Amory B. Lovins, L. Hunter Lovins, and Leonard Ross, in *Foreign Affairs* (Summer 1980), 428 East Preston St., Baltimore, Md. 21202.

Nuclear power proponents view the atom as the world's best bet for a cheap, abundant oil substitute. But atomic energy is miscast in this role, and the growing cost of reactors has brought many nuclear pro-