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direction of economic integration" with the white population. By 1973, the difference in amount of completed schooling between blacks and whites that could be attributed to "racial" causes had dropped to about half a year. "Positive" factors that traditionally correlate with "success" for white males—such as socioeconomic background, education, and father's occupation—now influence occupational patterns among growing numbers of black men. (Put another way, the process of "perverse egalitarianism"—in which opportunity for black males is based on the liabilities but not the assets of their backgrounds—is slowly being reversed.)

But behind general progress lies a regional lag. In 1962 and 1973, native Northerners typically led native Southerners in socioeconomic background, education, occupational status, and earnings. (In most "status" categories, black migrants from South to North tend to fall between Northern and Southern levels.) In 1973, the economic "return" on each additional year of schooling was twice as high in the North as in the South; Northerners also completed, on average, two more years of schooling than Southerners. In fact, Hogan and Featherman note that the range of educational inequality is now greater among blacks than among whites. Annual earnings have risen for all blacks, but Northerners still lead Southerners by \$3,000.

While the Southern lag may be attributed to the North's economic edge, the authors believe that North-South differences are steadily narrowing. (The current status of Southern blacks resembles that of Northern blacks a decade ago.) As the economies of North and South "converge," they speculate, so too will "regional variations" in social status between Northern and Southern blacks.

The Biology of Salt Taboos

"A Biocultural Approach to Salt Taboos: The Case of the Southeastern United States" by Thomas W. Neumann, in *Current Anthropology* (June 1977), University of Chicago, 1126 E. 59th St., Chicago, Ill. 60637.

Sodium from salt (sodium chloride) and from high-sodium foods is a basic requirement of the human diet. But sodium needs vary widely, especially during periods of exercise, emotional stress, menstruation, and pregnancy. Today, doctors can adjust a person's sodium intake to prevent dehydration or edema (swelling) during these periods. Neumann, a doctoral candidate at the University of Minnesota, believes that "salt taboos" performed an analogous function among Indian tribes of the Southeastern United States.

Neumann compares the biology of sodium needs with dietary customs among the Cherokee, Creek, Caddo, Chickasaw, and Choctaw tribes. During menstruation, pregnancy, and mourning, when the human body needs little sodium because of sodium and water retention, salt taboos provided the needed restriction. In Creek and

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Cherokee preparations for war, on the other hand, salt taboos resulted in impaired judgment and a tendency to rash behavior—qualities that, when added to an adrenalin boost, would help create a “formidable warrior.” Similarly, in initiation rites intended to weed out the weak, sodium deprivation could push endurance to the limit. Neumann recounts a report of Carolina Sioux boys’ “hellish cries and howling” during one such rite.

“Consciously or not,” Neumann concludes, salt taboos developed because of concrete “advantages for the population as a whole”: preservation of health or creation of culturally desirable physical and emotional conditions.

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Ozone and the Origins of Life

“The Evolutionary Role of Atmospheric Ozone” by A. J. Blake and J. H. Carver, in *Journal of the Atmospheric Sciences* (May 1977), American Meteorological Society, 45 Beacon St., Boston, Mass. 02108.

What source of energy triggered the chemical reactions leading to the evolution of life on earth 3 billion years ago?

Scientists frequently assume that the earth’s primitive atmosphere, which contained as little as one-thousandth the current amount of oxygen (O₂), contained correspondingly little ozone (O₃), a gas that absorbs the sun’s ultraviolet radiation. In the absence of such an ozone “screen” (which developed later), scientists believe that ultraviolet radiation could have penetrated the atmosphere with sufficient intensity to spark the synthesis of organic molecules.

But the authors, physicists at the University of Adelaide, Australia, contend that such calculations based on models of the earth’s primitive atmosphere may be in error. Oxygen and ozone levels, while related, are not directly proportional. Photochemical reactions between water vapor, carbon dioxide, methane, and especially nitrogen also have a significant effect on ozone production. The authors conclude that even with an atmosphere containing only one-thousandth the current oxygen level, the earth would have had an effective ozone screen—thereby ruling out ultraviolet radiation on earth as the energy source responsible for organic synthesis.

The authors suggest two alternate explanations: (1) Electrical discharges within the atmosphere may have supplied the needed energy, or (2) chemical synthesis might have taken place outside the earth’s environment. Modern radio astronomers have detected organic molecules in dark, nebular regions of space. Such complex molecules of extraterrestrial origin may have accumulated on the earth’s surface as a result of intense meteor showers during the first eon of the planet’s history.