

of the University of Missouri, who has been helping to spearhead the archaeologists' efforts, "much extremely valuable scientific information has been lost due to lack of funds and available personnel at the critical time. By authorizing the expenditure of necessary funds from the agency responsible for potential destruction of the data, it is possible to act promptly and to tie the level of support needed directly to the amount of destruction and the availability of personnel."

Two years ago, such a bill failed to reach either the House or the Senate floor. Last year it passed the Senate, but never got out of the House Interior Committee. This week, with 128 Congressmen cosponsoring it, the bill passed resoundingly in the House, 296 to 23, although with 114 members not voting. The archaeologists had not expected any opposition—their concern was that lack of interest might have prevented a quorum from gathering to vote. They were almost right, but optimism is now high. An aide to Sen. Frank Moss (D.-Utah), who is the main sponsor of the Senate bill, has described the House bill's amendments to the 1960 act as "reasonable and sound," and several scientists at last week's meeting of the Society for American Archaeology (where the need to drum up the vote was highly touted at every turn) agreed that if the House version passed, the Senate would probably go along without the need for conference. □

Mariner 10: More Mercury TV

For weeks before Mariner 10 flashed by Mercury it had been giving its flight controllers nightmares about whether it would run out of the control gas necessary to aim it close to the planet. When it survived the initial encounter, the key question became whether it would be able to come around again, 176 days later, for a second pass on Sept. 21. Late this week, the controllers were to find out.

There are two possibilities for the return engagement: a television mission past the sunlit side of the planet and a magnetic field survey of the dark half. After considerable debate, the TV program has emerged as the favorite. The critical maneuvers are engine firings intended to aim the probe so that it would pass within 29,500 miles of the surface.

The big question was whether an erratic gyro circuit could be kept from using up all the gas. The prize could be detailed photographs of the planet's southern hemisphere, but if the cameras fail, the magnetic survey could be chosen as late as July 2. □

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Slavery: The good old days?



History is like a living tree. And as far as that tree is concerned, reason is an ax. You'll never make it grow by applying reason to it.

—Alexander Solzhenitsyn

One such ax is the computer, and it is being wielded by mathematically minded historians who call themselves Cliometricians. Their task is to turn Clio, the muse of history, into an equation that can be subjected to computer analysis. And with the readout, the Cliometricians are hacking away at the traditional historical interpretation of the institution of black slavery in the United States. Robert Fogel and Stanley Engerman have combined 18 years of data collection with thousands of computer hours and produced a two-volume study of slavery that will not be taken lightly. The book, *Time on the Cross*, was published last week by Little, Brown and Co.

Traditional historians, applying humanistic values, have made five major points about the slave economy. According to Fogel and Engerman, these are: "1. that slavery was generally an unprofitable investment, or depended on trade in slaves to be profitable, except on new, highly fertile land; 2. that slavery was economically moribund; 3. that slave labor and agricultural production based on slave labor were economically inefficient; 4. that slavery caused the economy of the South to stagnate, or at least retarded its growth, during the antebellum era, and 5. that slavery provided extremely harsh material conditions of life for the typical slave."

The computer tells a different story. The South was not dying. The value of land was increasing and the worldwide demand for cotton was growing. And with slavery, "southern agriculture as a whole was about 35 percent more efficient than northern agriculture in the 1860's." This could not have been accomplished with stereotypical lazy, in-

competent and stupid slave laborers.

Data from slave market sales, census records and probate and plantation records have been used to sum up the lives of 250,000 slaves. The resulting statistical averages indicate that things weren't as bad as history has taught. African slaves, Fogel and Engerman say, "had much longer life expectations than free urban industrial workers in both the United States and Europe." Their average daily diet "exceeded modern (1964) recommended daily levels of the chief nutrients."

Slave family life was not full of promiscuity, immorality and broken homes. Plantation owners recognized the husbands as heads of families, and the family was the main administrative and housing unit of a plantation. The average age of a woman at the birth of her first child was 22.5 years. "The great majority of slave children were borne by women who were not only quite mature, but who were already married." In a society that did not have modern methods of contraception, this indicates that "prevailing sexual mores of slaves were not promiscuous but prudish."

These and many other findings presented in *Time on the Cross* will be disputed for several reasons. The computer gives averages, but, more often than not, history is made by individuals. The horrible experiences of individual slaves might have been statistically rare but the immensity of their psychological and cultural impact cannot be described on a computer printout. By emphasizing the cruelty of slavery, traditional historians have made a strong case against slavery. Fogel and Engerman, who state their personal abhorrence of slavery in the last chapter of their book, thought their work would reinforce this idea. The computer, however, double-crossed them. But even with their mounds of data, the Cliometricians admit that "history cannot be reduced merely to a science." □

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