



Climate change and an early experiment in empire: A volcanic eruption in what is now Turkey was followed by the abandonment of many Akkadian settlements; scientists think it coincided with but was not the sole cause of a 300-year drought.

The New York Times; illustration by Patricia J. Wymer

By JOHN NOBLE WILFORD

UNDER the renowned Sargon and his successors, the Akkadians of Mesopotamia forged the world's first empire more than 4,300 years ago. They seized control of cities along the Euphrates River and on the fruitful plains to the north, all in what is now Iraq, Syria and parts of southern Turkey. Then, after only a century of prosperity, the Akkadian empire collapsed abruptly, for reasons that have been lost to history.

The traditional explanation is one of divine retribution. Angered by the hubris of Naram-Sin, Sargon's grandson and most dynamic successor, the gods supposedly unleashed the barbaric Gutians to descend out of the highlands and overwhelm Akkadian towns. More recent and conventional explanations have put the blame on overpopulation, provincial revolt, nomadic incursions or managerial incompetence, though many scholars despaired of ever identifying the root cause of the collapse.

A team of archaeologists, geologists and soil scientists has now found evidence that seems to solve the mystery. The Akkadian empire, they suggest, was beset by a 300-year drought and literally dried up. A microscopic analysis of soil moisture at the ruins of Akkadian cities

in the northern farmlands disclosed that the onset of the drought was swift and the consequences severe, beginning about 2300 B.C.

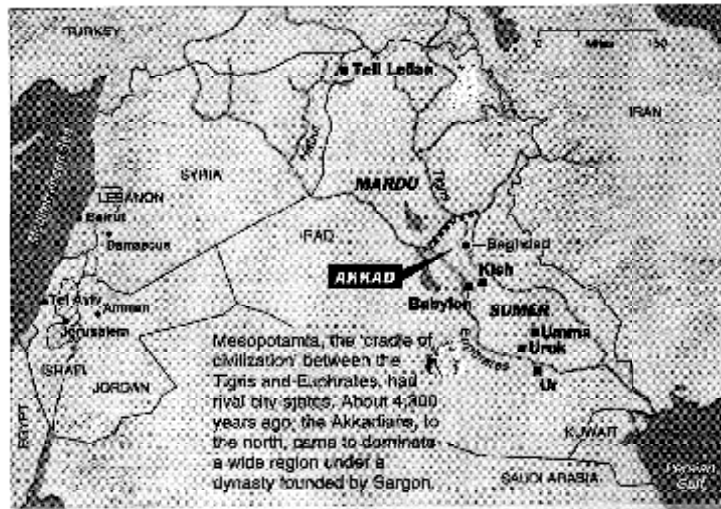
"This is the first time an abrupt climate change has been directly linked to the collapse of a thriving civilization," said Dr. Harvey Weiss, a Yale University archaeologist and leader of the American-French research team.

Such a devastating drought would explain the abandonment at that time of Akkadian cities across the northern plain, a puzzling phenomenon observed in archaeological excavations. It would also account for the sudden migrations of people to the south, as recorded in texts on clay tablets. These migrations doubled the populations of southern cities, overtaxed food and water supplies, and led to fighting and the fall of the Sargon dynasty.

The new findings thus call attention to the role of chance — call it fate, an act of God or simply an unpredictable natural disaster — in the development of human cultures and the rise and fall of civilizations.

Among the drought's refugees were a herding people known as Amorites, characterized by scribes in the city of Ur as "a ravaging people with the instincts of a beast, a people who know not grain" — the ultimate put-down in an economy based on grain agriculture. An 110-mile wall, called the "Repeller of the Amorites," was erected to hold them off. But when

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Mesopotamia, the "cradle of civilization" between the Tigris and Euphrates, had rival city states. About 4,300 years ago, the Akkadians, to the north, came to dominate a wide region under a dynasty founded by Sargon.

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Migrations to escape privation:

Clay tablets recorded migrations of people to the south, where the influx doubled the population of cities, overtaxed food and water supplies and led to civil unrest, fighting and the fall of the dynasty founded by the Akkadian ruler Sargon. Some of the refugees, a group of migratory herders called Amorites, eventually assumed leadership at the rising city of Babylon, founding a great empire.