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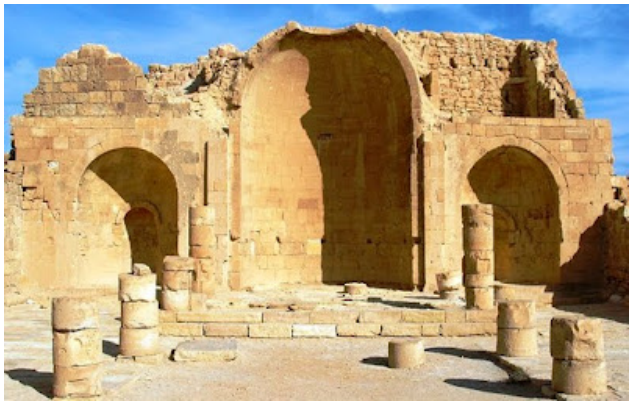
So-Called Book of Mormon Anachronisms: Cement

Continuing with the so-called anachronisms that critics claim are sprinkled throughout the Book of Mormon, they write:

“Helaman chapter 3, verse 7 in the Book of Mormon states: "And there being but little timber upon the face of the land, nevertheless the people who went forth became exceedingly expert in the working of cement; therefore they did build houses of cement, in the which they did dwell." There is evidence of cement being used in the ancient Americas around the times of Christ. Joseph Smith described the Book of Mormon plates as being deposited in a stone box in a New York hillside. The box was described as “formed by laying stones together in some kind of cement.”



The Nabataeans, a nomadic culture that existed in the times of Lehi in the desert just to the south of Jerusalem of which Lehi was most familiar, knew cement mortar and plaster. In fact, these “played an important role in Nabataean life, using this essential technology from their very earliest years in the desert. Without their special knowledge of cement, the Nabataeans would never have conquered the desert, and would never have risen to the status of a civilization.” Nor did they remain in one place. “Without this knowledge of waterproof cement, the Nabataeans would not have become the far ranging merchants of the Middle East, who easily traversed deserts and inhospitable, barren mountains.”

BLOG ARCHIVE

In modern times, cement and concrete are often thought of as the same thing; however, they are by nature very different. Cement is an ultra-fine gray powder that binds sand and rocks into a mass,which is called concrete. Cement is the key ingredient of concrete, but concrete contains other substances like sand and rocks. Cement has become one of the world's most widely used building materials, and is produced from some of the world's most abundant resources.

The Romans are generally credited as being the first concrete engineers, but archaeological evidence shows that a type of concrete dating to 6500 B.C., was used in Syria in permanent fire pits for heating and cooking. In Europe, Archaeological evidence for early use of concrete is found along the banks of the Danube River in Yugoslavia, where in approximately 5600 B.C. it was used to make floors for huts. And in China, as far back as 3000 BC, there is evidence of a type of cement used in the Gansu Province, and Egypt was using cement as early as 2500 B.C. The Egyptian stone mason Irtysen claims he did not carve his statues from rock, but cast it in molds in 2000 B.C.

The Syrian fire pits, built from area limestone, showed a primitive form of calcining on the exterior faces of the limestone rocks that lined the fire pits and lead to the accidental discovery of lime as a fundamental building material. The newly discovered technology was widely used in Syria beginning in the fifth millennium, as central lime-burning kilns were constructed to supply mortar for rubble-wall house construction, concrete floors, and waterproofing cisterns.

Lime, quicklime, and burnt lime are the common names for calcium oxide, CaO, a grayish-white powder. Today over 150 important industrial chemicals requires the use of lime in order to be manufactured. In fact, only five other raw materials (salt, coal, sulfur, air, and water) are used in greater amounts. Lime is used in glass, cement, brick, and other building materials; as well as in the manufacture of steel, aluminum, and magnesium, poultry feed; and in the processing of cane and sugar beet juices. Thus, the discovery of lime as a building material opened the door for many other improvements as well.

Before the time of Moses, people of the Middle East made walls for their fortifications and homes by pounding moist clay between forms, often called pise work. To protect the surfaces of the clay from erosion, the ancients discovered that a moist coating of thin, white, burnt limestone would chemically combine with the gases in the air to give a hard protecting shied.

In examining the atomic structure of these elements it is found that common plaster was made with wet lime and plain sand. This sand has a crystalline atomic structure whereby the silica is so condensed there are no atom holes in the molecular network to allow the calcium hydroxide molecule from the lime to enter and react. The opposite is true with the wet lime-pozzolan contact. The pozzolan has an

amorphous silica atomic structure with many holes in the molecular network. Upon mixing the wet lime with the pozzolan, the calcium hydroxide enters the atomic holes to make a concrete gel that expands, bonding pieces of rock together. The fine powder condition of the pozzolan provides a large surface area to enhance chemical reaction. This same complex chemistry of the ancient concrete is found in modern concrete bonding gel. The pozzolan-wet lime gel gave permanence to the ancient concrete.

All of these uses was well known in the Middle East long before Lehi's time and would have been known to Lehi when he left Jerusalem. Obviouisly, this knowledge would have carried over to Nephi, who taught his people how to build buildings and work with all types of metals (2 Nephi 5:15).

The idea of cement, then, as mentioned in the Book of Mormon, is certainly within its appropriate time frame in history, and not an anachronism as critics claim.

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