



# THE ZARAHEMLA RECORD

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"And he that will not harden his heart, to him is given the greater portion of the word..." Alma 9:18

## Chinese Stone Anchors IN THE NEW WORLD

by Shirley R. Heater

In October, 1981, headlines appeared in various newspapers relating discoveries of ancient Chinese stone anchors in waters along the California coastline. As we all know, China has been much in the news lately. On the world front, China is opening its doors. Relations between the U.S. and China have been re-established and interaction between the two countries is growing. While we might view this as a secular opening, spiritual things are also opening up as seen by the publication in 1979 of **The Discovery of Genesis**. This book presents information about the Genesis story which is locked within the written ancient Chinese characters. The publication of the book "... appears to be only the beginning of a process which should shed significant light on the early existence of that great people we call the Jaredites. The timing of this book is most certainly part of the Lord's plan for bringing the Book of Mormon to the attention of the unbelieving world (Treat 1981)." We shall see how the discovery of the stone anchors is a significant step in this direction.

### The Discovery

The first evidence was found in November, 1973, by a U.S. Geological Survey team while deep dredging in the Patton Escarpment Zone, about 135 miles from Pt. Conception, California. A round, donut-shaped stone object was found near the top of the dredging bag. The second discovery came early in 1975 by two men who were sport diving in shallow waters off Palos Verdes, California, near Los Angeles. Several man-made stone objects were recovered. All together, ten objects were recovered from both sites. (Pierson & Moriarty 1980 contains the full report.)

Object No. 2 (fig. 1) was the first object discovered, dredged from the Patton Escarpment Zone in more than 1,000 fathoms of water. Marine archaeologists James Moriarty and Larry Pierson of the University of San Diego were called in to examine the object. It was described as 13.5 inches in diameter, with a hole 2.5 inches in diameter and 6.4 inches thick at the hole. Dr. C. C. Woo of the U.S. Geological Survey conducted a lab analysis and said, "The manganese coating... measures about 3 millimeters over the entire stone. As a rule of thumb... it would take

about 1,000 years for natural sea processes to lay down a millimeter of manganese." This suggests an age of possibly 2-3,000 years.

Samples from Object No. 2 were also transported to Dr. Wang, Chairman of the Department of Geology at National Taiwan University for substance analysis. His tests revealed the material to be a very fine grain dolomite (chemically hardened or recrystallized limestone). Dr. Wang states: "In northern China, there are dolomite beds of considerable size... they have been widely used as building stones for the past several thousand years." Dr. Moriarty concluded after assembling all information that "... the strange artifact probably represents either a line weight for stabilizing the anchor on the bottom, or a messenger stone for defouling (untangling) anchor lines." At present there are no other nautical materials at the Patton Escarpment site.

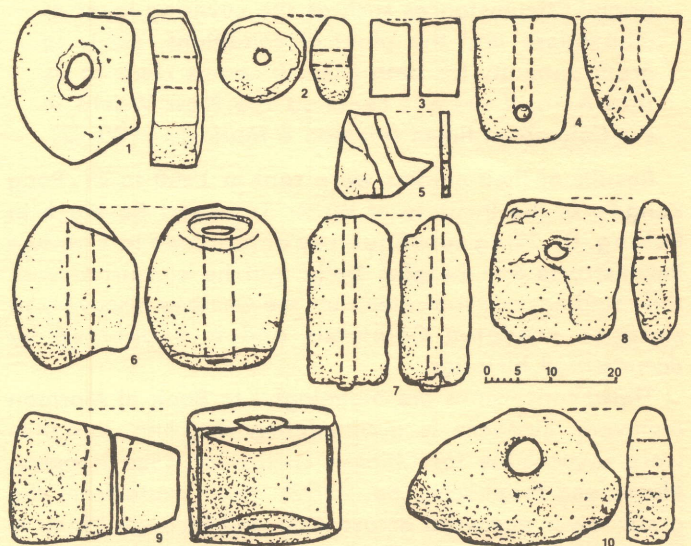


Fig. 1—Stone anchors

At the Palos Verdes site, Robert Meistrell, a scuba diver, and his diving partner, Wayne Baldwin, stumbled upon a 280 pound stone with a hole in the middle while digging for sea shells at a depth of 35 feet. Eight additional stones were later brought up, and it is believed

that at least 30 more stone artifacts remain under water in the area.

For more than seven years, archaeologists and scientists investigated the origins of these relics. Analysis was made by Dr. George Bass of the American Institute of Nautical Archaeology, and Mr. John Gifford of the University of Minnesota performed the geological analysis. Two samples from the most damaged anchor were examined. The anchor samples were both of a feldspathic sandstone. Supplementary analysis was performed by Mr. Angus MacDonald of Los Angeles Valley College of Earth Sciences which indicated that similar material is found in deposits along the southern China coast. However, it is not known whether investigators of either site utilized trace element analysis to determine the origin of the stones which would give absolute identification to the source deposits based on mineral profiles.

Of the total stone objects found, Objects No. 1, 4, 8, 9 and 10 have been identified as weight anchors, Object No. 6 may be a boom-hoist counter weight and Objects No. 3 and 7 ballast stones for a compound anchor. Object No. 5 is unidentified. Shortly after this analysis, two additional stones were recovered directly offshore from the Palos Verdes site. It was concluded that this fits with known worldwide sailing practices where two anchors trailed when in danger of going ashore.

It is believed from the location of the artifacts and their concentration in shallow water that the site represents the remains of a single large ship. Because of the 2-3 millimeter thickness coating on all stone artifacts found, the age is estimated in the range of 2-3,000 years old.

Stylistic comparisons with historical, archaeological and ethnological data indicate great antiquity for the anchors. Geologic studies show that the stone from which they were made is not of California origin. Circumstances such as the covering layer of manganese and the physical conditions, point to great antiquity for both sites. It seems clear to us that Asiatic vessels reached the New World in Pre-Columbian times (Pierson & Moriarty 1980:22).

Results of their studies were sent in 1980 to Dr. Fang Zong-Fu of the Institute of Water Transport Research in Peking. Dr. Fang subsequently announced in **Chinese Reconstructs and Peoples Daily** that he concurred with their findings and indicated that the Chinese discovery of America predated Columbus and is supported by documented histories.

These conclusions are meaningful to Book of Mormon believers. Evidence is accumulating that the Jaredites were responsible for Chinese civilization (See **Peoples, Places and Prophecies**, pp. 27-33). Their route from the great tower eastward across Asia and through China is becoming better understood.

**After the Manner Hitherto Built**

While the Jaredites were on their journey across Asia they encountered many waters in the wilderness that required them to build barges. When they reached the great sea that divided the lands, they were content to remain there, extending to a period of four years - until the Lord intervened with these instructions:

"And the Lord said, Go to work and build, after the manner of barges which ye have **hitherto** built.

And it came to pass that the Brother of Jared did go to work, and also his brethren, and **built barges after the manner which they had built**, according to the instructions of the Lord.

And they were small, and they were light upon the water, even like unto the lightness of a fowl upon the water; and they were built after a manner that they were exceeding tight, even that they would hold water like unto a dish;

And the bottom thereof was tight like unto a dish; and the sides thereof were **tight like unto a dish**; and the ends thereof were **peaked**; and the top thereof was tight like unto a dish; and the length there was the length of a tree; and the door thereof, when it was shut, was tight like unto a dish." Ether 1:43-46

Because the Jaredites built "after the manner which they had hitherto built," let's look at some of the styles of ships from the areas where they lived—Mesopotamia and China. Do any of them fit the description in Ether of tight like unto a dish and with peaked ends?

Some of the earliest depictions of water craft are art carvings. One example, a carved ivory knife dating from about 2500 B.C., comes from early Egypt and is but one of many examples. It illustrates two different kinds of boats, the reed boat of the Nile and a different boat with a high brow or peaked end—a style from Mesopotamia (Bass 1972:26). This carving records the movements of people and Mesopotamian influence. Figure 2 below shows engravings of nine ships, each with a peaked end, on the silver blade of a sword from Turkey, also dating from 2500 B.C. (See Yadin 1975:144).

Along with vessel design, there is archaeological evidence for anchoring these ships. It is known that the earliest anchors were made of stone. Three types have been identified: a round, donut-shape, with a single hole which, on a rocky bottom, held a ship by weight alone. The painted jar from Cyprus (fig. 3) shows such an anchor hanging from a line on the ship. On the coast of Ugarit just east of Cyprus, anchors of half-a-ton weight have been found, evidence of shipping at about the nineteenth century B. C. A second type is an oval-shaped stone anchor with two holes. Wooden sticks stuck in the hole would hold on either sand or rock. A third type of ancient anchor



Fig. 2—Silver sword from Turkey, 2500 B.C.

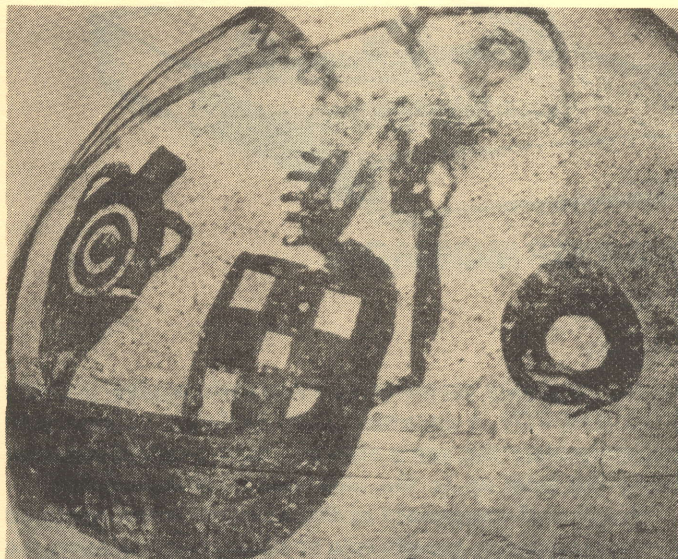


Fig. 3—Cyprus vase 8th century B.C. showing stone anchor.

in use in the area contains three or more holes which would take a stick to grip into the sand (Johnstone 1980:82; Phillips-Birt 1971:29). Inadequate attention has been given stone objects in the archaeological record until only recently. Most have been lumped under the catch-all category of "Miscellaneous Stone Objects" and their significance failed to be recognized or understood (McCaslin 1980:1).

The discovery of models of boats excavated from tombs in China pushed back the date of archaeological evidence to the second century B. C. The typical features by this date include an upward sweep of both ends, flat bottom, with cabins. Archaeologically we look forward to more detail, taking us farther back into the past as excavations continue (Rudolph 1974:65-68).

A sinologist (a specialist in the study of China) has noted that "the Chinese had clear priority over the West by technological advances of the magnetic compass, hinged sternpost rudder, multiple masts, and watertight bulkheads and free-flooding compartments." He also states: "Of the most ancient influences acting upon their ship construction, we have been able to detect certain affinities with the naval architecture of ancient Egypt (which stems from Mesopotamian influence) including some forward-curving sterns (Needham 1971:192, 420-425, 698)." The use of watertight compartments made it almost impossible to sink ships. The hold was divided into a number of compartments which meant if the ship sprung a leak, water would fill only one compartment and the ship would still remain afloat. You will recall this was also a feature of the Jaredite vessels, which were "tight like unto a dish." This was mentioned no less than five times in Ether 1:45-46. We can speculate that this invention was handed down from the Jaredites based on the special instructions from the Lord, in view of the fact that watertight compartments were known in China long before they were adopted by the West.

Thus we see that the archaeological record supports a pattern of shipbuilding styles with peaked ends and the use of stone anchors in the area from which the Jaredites originated, and that they would have brought this tradition of shipbuilding "after the manner which they had

hitherto built" with them to China.

It is interesting to note that the Chinese language also confirms that they were a maritime people. One source states that the early Chinese character for the word "anchor" is made up of two parts, one radical meaning stone and the other, let down. This literally means "let down a stone." It is believed that Chinese anchors date back to at least 2000 B.C. (Worcester 1971:88).

### Conclusions

The discovery of ancient stone anchors from Asia on the shores of the New World takes us beyond theories based on comparative material to actual physical contact with the New World. This also demonstrates evidence of a fundamental knowledge or capability relating to water travel which was an essential part of the Jaredite's journey. I am not, however, proposing that these stone anchors found off the coast of California are Jaredite remains. Because of the Jaredite experience, we should expect archaeological evidence confirming the link between the Old and New Worlds. The discovery of these stone relics is unquestionably part of the Lord's plan. They bring hard evidence in the face of a controversy based on circumstantial evidence. As believers of the Book of Mormon, we may look to archaeology for confirmation of its testimony. Our faith is intensified as we see archaeological evidences confirming the Book of Mormon.

For non-believers the stone anchors and the Chinese connection are also important. God is preparing the way for the acceptance of the greater truths yet to be revealed as part of His divine timing.■

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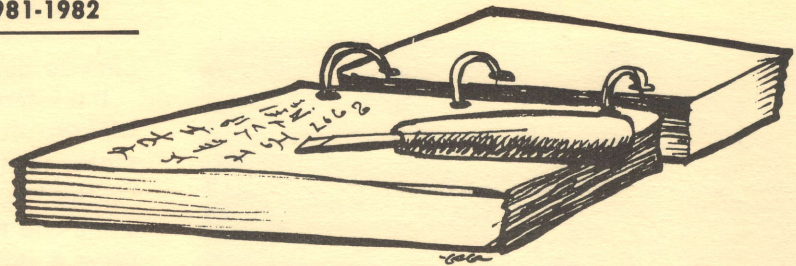
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### THE SCHOLARS CORNER

Correction on No. 2 answer in last publication:

a. D & C Sec. 104:29a, b

# Readers' Research



## SPECULATIONS ON BOOK OF MORMON POPULATIONS

By Dr. Vern Elfson

There is not much information in the Book of Mormon about the numbers of people present at various times. Nevertheless, this aspect of the framework within which events occurred contributes to the meaning of those events. Understanding and appreciation of the Book is enhanced if we can develop some feeling for the numbers of people.

In considering this question, I have limited myself to one period, from 600 B.C. until the time of Christ, and I shall combine the colonies of Lehi and Mulek and treat them essentially as one even though there was no contact between them until about 200 B.C. Further, I assume that the colony of Mulek left Jerusalem in 600 B.C. even though the evidence suggests that it was a few years after that.

My best guess regarding how population grew during this period is presented in Table 1 and in Figure 1. The balance of this article is devoted to my explanation of how and why I arrived at this estimate. It is hoped that these comments will simultaneously bring out some of the ways in which an understanding of the number of people involved gives added meaning to Book of Mormon accounts.

My population estimate has two basic components. The first is an assumed beginning population of 50 people. This assumption is based on the evidence that Lehi's

Table 1—Estimated Book of Mormon Populations at Various Times between 600 B.C. and the Time of Christ.

B.C.	Pop.	B.C.	Pop.	B.C.	Pop.
600	50				
590	58	390	1,140	190	22,389
580	68	380	1,323	180	25,983
570	78	370	1,535	170	30,155
560	91	360	1,782	160	34,996
550	105	350	2,068	150	40,614
540	122	340	2,400	140	47,135
530	142	330	2,785	130	54,702
520	166	320	3,232	120	63,483
510	191	310	3,751	110	73,675
500	222	300	4,353	100	85,504
490	257	290	5,052	90	99,231
480	298	280	5,863	80	115,161
470	346	270	6,604	70	133,649
460	402	260	7,896	60	155,105
450	467	250	9,164	50	180,006
440	541	240	10,635	40	208,904
430	628	230	12,342	30	242,442
420	729	220	14,324	20	281,363
410	846	210	16,623	10	326,534
400	982	200	19,292	0	378,955

colony originally consisted of 9 married couples (1 Nephi 2:12 and 5:7). I assumed that Mulek's colony was approximately the same size and then I added a few to bring the total up to the nice round number of 50.

The second component of the estimate is the assumed annual population growth rate of 1.5 percent covering the whole 600-year period. There are three aspects of this assumed growth rate that deserve comment. First, the assumption is not intended to imply that population grew by exactly 1.5 percent each and every year throughout the period. Instead this rate is taken to represent the average growth rate around which actual annual rates would center. During years of peace and prosperity, the growth rate would probably be higher. During years of serious pestilence and conflict, there might be negative growth rates. There are, of course, a number of other factors that would also have important influences on the growth rate year by year. As just one example, Lehi's original colony consisted almost entirely of people in their reproductive ages. This should have resulted in unusually high growth rates for a few years.

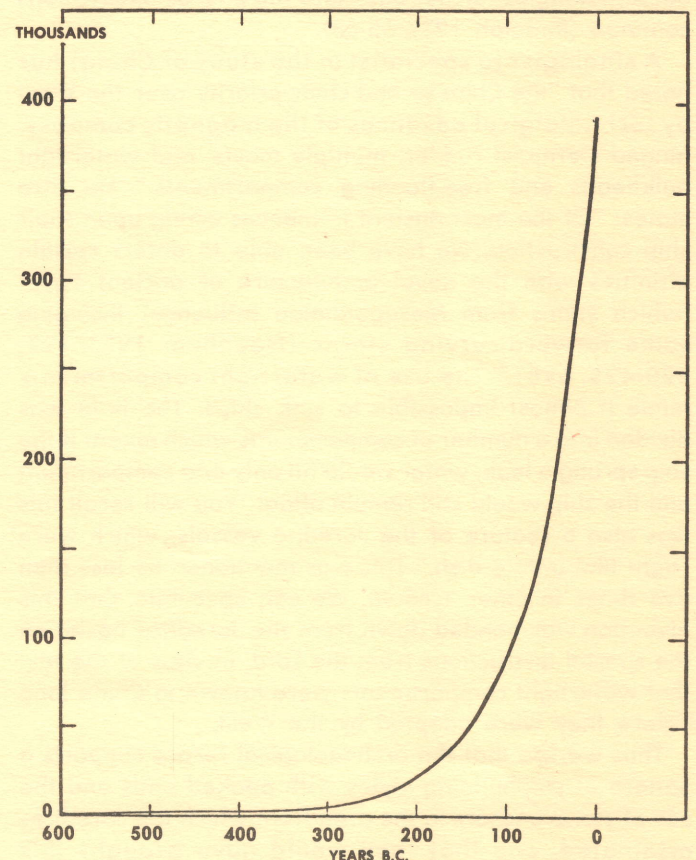


Figure 1—Estimated Book of Mormon Populations at Various Times between 600 B.C. and the Time of Christ.

A second comment about the 1.5 percent growth rate relates to my assumption that this average persisted, with a reasonable degree of stability, over 600 years. There are no strong evidences requiring a conclusion that long term stability was actually the case. On the other hand, there are no reasons for believing that it was not. As a general rule, this type of thing is influenced by the availability of space and food producing resources. All evidence indicates that these were available in abundance throughout the period (with one exception - Helaman 4:4-20) so that these fundamental factors should have contributed to stable growth.

The third aspect of the 1.5 percent growth rate is the number itself. Why 1.5 instead of 1, 2, 3, or any other specific number?

Consider a couple of real world population growth rates. Historical evidence suggests that between 1650 and 1750 total world population grew at an annual rate of .3 percent. Prior to 1650, it grew more slowly. On the other hand, the most rapid population growth of any major region of the world today is found in Western Africa. There population is increasing at an annual rate of 3 percent. Table 2 shows how the Book of Mormon population of 50 would have increased, over 600 years, had it grown at .3 percent and 3 percent annually. I think that it is obvious that, on the basis of information from the Book and elsewhere, neither of these growth rates closely approximates what actually happened. The one is far too low and the other is far too high.

Book of Mormon population would be expected to grow more rapidly than world population did in the 17th and 18th centuries because of the abundance of resources already mentioned. Further, their small initial numbers and their isolation from other peoples probably reduced the incidence of disease among them by a substantial degree.

A 3 percent annual growth rate should be recognized as abnormally high. It exists in Africa today because health services and technologies introduced since World War II have lowered death rates very dramatically. At the same time, there have been few changes in the cultural characteristics that favor high birth rates. As a result, improved health has actually raised birth rates and the pronounced difference between birth and death rates produces the very high rate of natural increase. However, a number of factors show that this high rate will not and can not continue for long.

A couple of comparisons will further show that the 3 percent rate with its Book of Mormon population of 2.5 billion people by the time of Christ is unacceptably high. The 1981 population of all the Americas—North, South,

Middle, and Caribbean—was only .62 billion. The population of the whole world did not reach 2.5 billion until about 1950.

It is easy to conclude that the Book of Mormon population growth rate must fall somewhere within the range of .3 percent and 3 percent. I considered a number of growth rates within that range and compared results with Book of Mormon events and reports to see if they were consistent. I will not burden the reader with the details of that effort. My eventual conclusion was that the 1.5 percent rate is the most appropriate, and the balance of this paper relates some of the comparisons I made using it. It should be recognized that the 1.5 percent rate, although much lower than 3 percent, is still a high rate of population growth.

There is very little in the first two books of the Book of Mormon to indicate what might have been happening to population. They close with the death of Nephi, about 545 B.C. (Jacob 1:1). Some time later, Jacob says that his people, the Nephites, "now began to be numerous" (Jacob 2:67). This, however, is a comparative statement. Numerous as compared to what? Probably compared to the 10 to 15 adults who represented the first Nephites (II Nephi 4:8) and were the group over which their first king reigned (II Nephi 4:27-28). The total number had to be relatively small and this is indicated by the lament of Jacob just prior to his death. It is not clear exactly when that was, but it must have been about 500 B.C. (Jacob's son, Enos, lived until 421 B.C. See Enos 1:42). Here is Jacob's comment: ". . . the time passed away with us, and also our lives passed away, like as it were a dream, we being a lonesome and a solemn people, wanderers cast out from Jerusalem; born in tribulation in the wilderness ..." (Jacob 5:43-44).

According to my calculations in Table 1, the total Book of Mormon population at that time was 222. Approximately half of these would be Mulekites. At least half of the remaining half would be Lamanites. So, at the time of Jacob's death, there would be about 55 Nephites altogether. Of course, this is only an estimate, but the true population was probably of this general magnitude. An appreciation of the smallness of the number gives added meaning and poignancy to Jacob's lament. At the same time, his lament that they were a lonesome people supports the idea that they were indeed few in number.

The next 300 years of Book of Mormon history is passed over very quickly and briefly in the books of Enos, Jarom, and Omni. This would bring us to 200 B.C., the approximate time when King Mosiah I took his people, left the land of Nephi, and after traveling in the wilderness discovered the Mulekite colony that was by then known as the people of Zarahemla (Omni 1:19-24).

King Mosiah was warned of the Lord to "flee" from the land of Nephi. This suggests haste and it also implies a desire to avoid being followed. How large a group can realistically be managed and moved under those circumstances of haste, concealment, and travel in an uncharted wilderness? Certainly not hundreds of thousands. Not even tens of thousands.

Reference to Table 1 shows an estimated total Book of Mormon population for 200 B.C. of 19,292 or approxi-

Table 2—Growth of a Population of 50, at Two Annual Rates, over 600 Years.

B.C.	.3 percent	3 percent
600	50	50
500	67	961
400	91	18,468
300	123	354,924
200	166	6,821,130
100	224	131,092,520
0	302	2,519,413,750

mately 20,000. Again, approximately half of these would be represented by the people of Zarahemla, the Mulekites. The remaining 10,000 would be Lamanites and Nephites. There is evidence that by this time the Lamanites considerably outnumbered the Nephites (Jarom 1:15). By the time of Mosiah, at least part of the larger size of the Lamanite nation was due to defections from the Nephites, as implied by Omni 1:20-22. Thus of the 10,000 combined Lamanites and Nephites, perhaps the group that followed Mosiah to Zarahemla was in the neighborhood of 2000 to 3000.

These conclusions also seem to fit the information to the effect that Mosiah considered the people of Zarahemla to be "exceeding numerous" (Omni 1:28). If he were comparing, say, 2500 of his own people to 10,000 of the people of Zarahemla, he would naturally consider the larger group very numerous.

About 125 B.C., King Benjamin prepared to transfer the kingdom to his son, Mosiah II. He brought all the people of his realm together in one place. Although the crowd was too great for all the people to hear the king at once, they were gathered at one place with the tent of each family facing the tower from which King Benjamin spoke (Mosiah 1:27-35). How many people could be brought together in such a gathering?

My estimate indicates a total Book of Mormon population of about 60,000 for the year 125 B.C. During the reign of King Benjamin there were "many dissensions" away from the Nephites to the Lamanites (Words of Mormon 1:25). By this time, the Nephites included the people of Zarahemla as well as the original Nephites. At a point in time some 5 to 10 years after this, the statement is made that "there were not so many of the . . . descendants of Nephi, as there were of the people of Zarahemla, . . . and there were not so many of the people of Nephi and of the people of Zarahemla as there were of the Lamanites: yea, they were not half so numerous" (Mosiah 11:78-79). On the basis of this information, one might say that one-third of the 60,000 people was found in the Nephite nation and that, therefore, 20,000 people gathered to hear King Benjamin's message.

This strikes me as being a large, though perhaps not an impossibly large, number of people for the circumstances. A consideration that would reduce the number, and thus possibly make it more realistic, is the nature of the statement that the Nephites "were not half so numerous" as the Lamanites. This means that, **at the maximum**, the Nephites would amount to one-third of the 60,000 total. They could be substantially less than that. For example, in other contexts, Book of Mormon writers say they have not included a hundredth part of the records in their abridged accounts, and the evidence is that they actually included much, much less than a hundredth part of those records.

When the people of Zeniff and the people of Alma returned to the land of Zarahemla, the king again gathered all the Nephites together, this time in order to read to them the records that were brought by the two groups (Mosiah 11:77-81). This was probably within a decade of the death of King Benjamin, and the population considerations associated with his gathering of the people would generally apply in this instance.

At about this same time, churches were established in the land of Zarahemla, by Alma, to minister to the spiritual needs of the people. The record says: "King Mosiah granted unto Alma, that he might establish churches throughout all the land of Zarahemla; . . . Now this was done because there were so many people that they could not all be governed by one teacher; neither could they all hear the word of God in one assembly; . . . And now there were seven churches in the land of Zarahemla" (Mosiah 11:97-102). Not all of the Nephites were members of the church. Only about two thirds of them were (Mosiah 11:110). Our population estimates should give us some notion of the size of these congregations.

The time would have been about 115 B.C. Total Book of Mormon population is estimated at about 66,000. If the Nephites constituted no more than one-third of that total, they would number about 21,000 or less. If two-thirds of these were members of the church, that would be approximately 14,000 divided among seven congregations making about 2000 members in each. When it is remembered that this would represent close to the upper limit on the size of the congregations, it strikes one as being a reasonable figure.

At the time of King Mosiah's death in 91 B.C., the people of the kingdom were not gathered together even though they took the very important step of switching their government from a monarchy to a democratic government with elected judges. The decision not to meet in one body was probably due, at least in part, to population growth.

In 86 B.C., there was an internal conflict among the Nephites between those who called themselves Amlicites and the balance of the Nephite nation. In the war that erupted, 12,532 Amlicites and 6,562 Nephites were killed (Alma 1:58-75). Following their defeat, the Amlicites joined with the Lamanites and again attacked the Nephites. In this battle, the number that died was so great (and perhaps the Nephites were so exhausted) that they were not counted (Alma 1:98). In all, perhaps 40,000 people were killed in one year. This compares with an estimated total Book of Mormon population for that year of 105,000 to 110,000. Forty thousand seems like a very heavy casualty experience for a total population of this size, but one or two factors may help to explain the situation.

It has been emphasized that the 1.5 percent annual population growth is taken as an average. In good times, the rate would have to be considerably higher than that, and in years of serious warfare the growth rate would probably be much lower. If these assumptions are correct, then for the good periods, the numbers in Table 1, which are based on the 1.5 percent rate, are too low. In years of warfare and other disasters, the numbers in Table 1 are probably too high.

Throughout a period of 40 to 50 years prior to this war of the Amlicites, peace seems to have prevailed among the Book of Mormon peoples. This period included the first 5 years of the reign of the judges, the 33-year reign of King Mosiah II, and the last several years of King Benjamin's reign. The only warfare reported during this

(continued on page 7)

## BOOK REVIEW

**Investigating the Book of Mormon Witnesses** by Richard Lloyd Anderson, Deseret Press, \$6.95, 206 pages. Available from Herald House.

By Dana Simmons

The Book of Mormon is an amazing phenomenon, both from the viewpoint of the theologian and the historian. Theologians debate the scriptural and spiritual validity of its teachings, while the historians and archaeologists argue the physical and historical evidences of its claims. But often overlooked is the extraordinary fact that the origin of this book—the way in which it came to the world in the 1820's—is one of the most thoroughly documented and witnessed miracles of divine revelation known to modern man.

Where are the witnesses to validate John the Revelator's apocalyptic writing as true revelation from God? Where is there any authority other than the author himself who can testify that any of the works of the books of scripture contained within the Bible came about as direct revelation from God? True, some of the writers of the New Testament corroborate each other, yet would not their mutually supporting testimony be suspect in the eyes of the modern agnostic, who might charge fraudulent collusion among these leaders of the early Christian church? What documentation, what testimony exists from independent objective or even hostile sources as to the character of the New Testament authors?

The fact is, we judge the truth and integrity of the early Apostles by the truth and spirit of their words, always hoping that their writings have survived the ages and various translations without suffering damage to their original meaning. But the Book of Mormon need not rely wholly upon such tests of faith, for it is unique in the Christian world by virtue of various independent and sometime hostile witnesses, who yet proclaimed the Book of Mormon to be the work of God.

Richard Lloyd Anderson, a Mormon writer of some reknown, has compiled an excellent account of the 12 witnesses of the Book of Mormon, whose testimony of the miraculous origin of the book is placed at the beginning of every Book of Mormon in print. He has not only recorded the testimony for which each witness is known and how it came about, but he has also documented many other statements of their personal testimony made during their lives. He goes even further to determine the character and integrity of each of these men, researching the documented statements and opinions published about the 12 witnesses by their contemporaries. Most of these peers were hostile to the religious movement of which these men were a part, but could only conclude that the witnesses were honest and sincere in their belief. The effect of Mr. Anderson's book is to provoke a great sense of wonder and even awe at the remarkable divine manifestation which all 12 men must have experienced. Each man clung to his testimony and belief of the divinity of the Book of Mormon, through severe persecution and public censure, even though a number of them left the religious movement and even expressed hostility toward

the church. The experience of seeing the metal plates which Joseph Smith translated, and the confirmation from God that this was truly His work, remained unshaken throughout all of the witnesses' lives. This revelation from God which they received is the best documented testimony of God's miraculous revelation of scripture known to the world today.

Those who seek further testimony of the truth of the Book of Mormon will welcome the addition of this book to their library. For many, it will become an excellent source book when studying or teaching the history of the Restoration movement, or the origin of the Book of Mormon. It may cause some to reconsider their disbelief in the authenticity and historicity of the Book of Mormon, faced with the unwavering testimony of 12 men who witnessed a miracle and never gave up testifying about it as long as they lived. ●

### READERS' RESEARCH

From page 6

period are some relatively minor skirmishes between the Lamanites and the people of Limhi. In general, the whole period can probably be described by the comment in Mosiah 11:156, ". . . there began to be much peace again in the land; and the people began to be very numerous, and began to spread abroad upon the face of the earth." Thus, in the period leading up to the great wars of 86 B.C., population probably grew at quite a bit more than the 1.5 average rate. This would mean that the population at the beginning of 86 B.C. would be significantly higher than the 105 to 110 thousand. At the end of the year, following the loss of 40,000 people, the population may have been less than 105,000.

We have been discussing a period that ran from about 135 B.C. to 85 B.C. An examination of this period on the graph of population growth shows that in this period numbers were beginning to rise very sharply. This more steeply rising line is not due to any change in the assumed rate of population growth. Instead, it is due to the fact that a larger population base has been established and that, therefore, a 1.5 percent increase adds a substantially larger number of people. This pattern for a population growth curve is to be expected any time the growth rate remains constant, even though the magnitude of the rate may be quite a bit different from 1.5 percent. Thus we conclude that the growth in population, noted by Mosiah in 11:156 of his book, was not only due to peace and prosperity but also due to their arrival at this upward turning point in their population growth curve.

This rapid change in population numbers becomes more and more evident and pronounced as one moves along through Book of Mormon history. And, of course, that is in harmony with what the population growth curve shows.

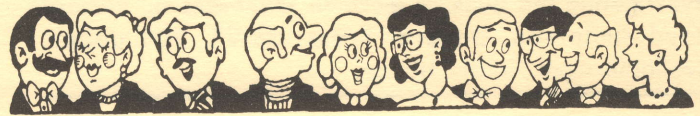
Consider the portion of the book of Alma that was written by Helaman (chapters 21-30). This record covers the period from 73 B.C. to 52 B.C. As one reads this, it becomes apparent that the Nephites have developed from a tribe into a substantial nation. Regional conflicts, within the nation, appear. In a war with the Lamanites, there is more than one battle, more than one battle front, and

(continued on page 8)

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# ZARAHEMLA RESEARCH FOUNDATION

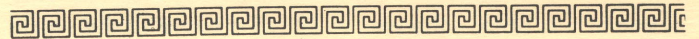
**READERS' RESEARCH**—from page 7 more than one Nephite army. Problems of communication between the armies develop along with problems of communications between the armies and the government. There are difficulties with logistics, and prisoners of war, which are hardly mentioned before this period, become so numerous as to cause severe difficulties.

There is one more series of events that bears eloquent testimony of the population explosion that was occurring at the end of this total 600-year period. In 54 B.C., 5400 men, along with their wives and children, departed out of the land of Zarahemla and into the land northward. The next year, "many" more went. Also during these two years, a number of ships were built in which "many" Nephites sailed forth to colonize the land northward. (See Alma 30:5-13.) In 45 B.C., "there were an exceeding great many who departed out of the land of Zarahemla, and went forth unto the land northward, to inherit the land; and they did travel to an exceeding great distance, insomuch that they came to large bodies of water, and many rivers; . . . And it came to pass that there were many of the people of Ammon who were Lamanites by birth, did also go forth into this land" (Helaman 2:3-11).

Such behavior is the natural response of a people that has multiplied beyond the resources of their established homeland. The unusually large numbers that are suddenly migrating to great distances is testimony to the suddenness or rapidity of population growth. So again, the Book of Mormon record is in agreement with population theory.

In closing, it may be appropriate to suggest that the points made in this paper lend some support to the idea that the Book of Mormon is true, the history of actual human experience. Were the book fiction, the product of someone's imagination, it is very improbable that the writer would have taken the pains to make the meager

population information provided, and provided in such an incidental manner, so consistent with a reasonable, long-term, population growth model. ■



### STATEMENT OF PURPOSE

The Zarahemla Research Foundation is a non-profit, tax-exempt corporation chartered under the laws of the state of Missouri. This is a non-church sponsored association. A major aim of the Foundation is to provide information and materials to assist in Book of Mormon ministries. ZRF is open to all who desire to improve their understanding and use of the Book of Mormon.

A major goal of this newsletter is to provide a bridge of understanding between the scientific-oriented field of archaeology and Book of Mormon studies. Keeping abreast of archaeological information is a full-time job, hence few people are in a position to devote the time needed to this subject. Yet, there is a wealth of information and enlightenment there that remains to be tapped. This newsletter hopes to draw on the finds of those who are in a position to give time to these areas of research and make this information available to interested members.

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