

THREE DAYS AND THREE NIGHTS

REASSESSING JESUS'S ENTOMBMENT

DAVID B. CUMMINGS

JESUS'S BODY LAY IN THE TOMB, ACCORDING TO MOST COMMENTATORS, DURING A FULL DAY (SATURDAY) AND PARTS OF ANOTHER TWO DAYS (FRIDAY AFTERNOON AND SUNDAY MORNING). YET, ACCORDING TO ONE KEY PASSAGE IN MATTHEW'S GOSPEL, THE SAVIOR DREW ATTENTION BEFOREHAND TO THIS PERIOD IN THE TOMB BY SAYING THAT "THE SON OF MAN [WILL] BE THREE DAYS AND THREE NIGHTS IN THE HEART OF THE EARTH" (MATTHEW 12:40). THE OBVIOUS QUESTION IS, WHY THE APPARENT DISCREPANCY? IS THERE A WAY TO LOOK AT JESUS'S ENTOMBMENT THAT WOULD RECONCILE WHAT JESUS SAYS HERE WITH WHAT WE LEARN ELSEWHERE? A CAREFUL EXAMINATION OF RELEVANT PASSAGES, PARTICULARLY FROM THE BOOK OF MORMON, WHICH BRINGS AN UNUSUAL SET OF EVIDENCES TO THE ISSUE, LEADS TO THE CONCLUSION THAT JESUS'S EARTHLY REMAINS WERE BURIED THURSDAY AFTERNOON, NOT FRIDAY.

REVIEWING THE QUESTION

Nowhere in the Bible does it state explicitly which day the Savior was crucified. There are advocates for Wednesday, Thursday, and Friday. Harold W. Hoehner,¹ Raymond E. Brown,² John P. Pratt,³ and Jack Finegan⁴ all analyze the arguments for each of these days. The following are some of the issues involved in this complex subject.

The argument for a Wednesday crucifixion is based on interpreting Matthew 12:40 as literally 72 hours in the tomb. Since, according to John's gospel, the crucifixion took place on the preparation day for the Passover, this view leads to a Passover Sabbath on Thursday and a weekly Sabbath on Saturday, with the body being embalmed on Friday. A Wednesday crucifixion also puts the resurrection near the end of the weekly Sabbath on Saturday, which conflicts with discovery of the empty tomb early Sunday morning, the first day of the week (Matthew 28:1; Mark 16:2; Luke 24:1; John 20:1).

Ancient Jews counted any portion of a day as a day.⁵ There are many examples for both 12-hour *natural* days and nights and 24-hour *civic* days. We reflect the same pattern in modern speech. These observations serve as the basis for theorizing either a Thursday or Friday crucifixion.

Thursday proponents accept Matthew 12:40, counting part of Thursday afternoon as a whole

day and part of Sunday morning before dawn as a whole night. A Thursday reckoning also depends on a Passover Sabbath falling on Friday before the weekly Sabbath on Saturday—that is, the mention of "that sabbath day" being "an high day" (John 19:31) is believed to mark Friday as the Passover Sabbath rather than the weekly Sabbath on Saturday; whereas Friday advocates believe it identifies the two Sabbaths as the same day. See "The Sabbath Days" below.

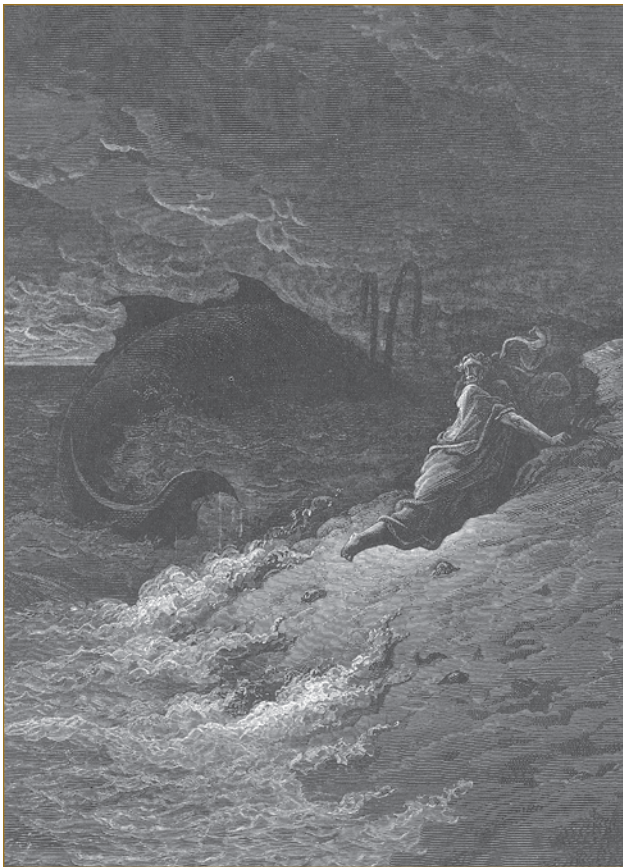
Friday advocates consider Matthew 12:40 to be an idiom,⁶ with part of Friday afternoon counted as a whole day *plus a whole night* and the part of Sunday night before dawn as a whole night *plus a whole day*.⁷ According to Pratt, "The arguments for Wednesday and Thursday are based almost entirely on one interpretation of an isolated verse (Matthew 12:40), rather than on the many statements that Jesus would rise the third day."⁸ Brown downplays Matthew 12:40 as "secondary to prophecies of the Son of Man being raised on the third day (Mark 9:31; 10:34; etc.) which make resurrection by Sunday reconcilable with death and burial on Friday."⁹

Invoking Sabbath work rules, such authors see the "day of preparation" as preparation for the weekly Sabbath. As Hoehner says, "the day of preparation for [of] the Passover' in John 19:14 seems to have reference to the Friday in the Passover week

rather than the day before the Passover.”¹⁰ However, there are no scriptural passages that call the day before the weekly Sabbath a preparation day. Hoehner also says there is no evidence that Nisan 15 in the Jewish calendar was a Sabbath day.¹¹ However, those work rules also applied to feast days such as Passover, which was a holy day of convocation on which they were to do no servile work (see Exodus 12:16; Leviticus 23:5–7; Numbers 28:16–18), and the following day was “the morrow after the sabbath” (Leviticus 23:11, 15).

THE SIGN OF THE PROPHET JONAH

There are several biblical references to the sign of the prophet Jonah, including the following: “But he answered and said unto them, An evil and adulterous generation seeketh after a sign; and there shall no sign be given to it, but the sign of the prophet Jonas: For as Jonas was three days and three nights in the whale’s belly; so shall the Son of man be three days and three nights in the heart of the earth” (Matthew 12:39–40).



In these verses the Savior equates the duration of his own prophesied burial with Jonah’s burial. Passages in Matthew 16:4 and Luke 11:29 refer to the sign of the prophet Jonah but without giving its length. Mark 8:12 says, “There shall no sign be given unto this generation,” to which the prophet Joseph Smith added “save the sign of the prophet Jonah; for as Jonah was three days and three nights in the whale’s belly, so likewise shall the Son of Man be buried in the bowels of the earth” (Mark 8:12 JST). This seems to add significance to the Savior’s prophetic pronouncement on his interment.

HOW WERE DAYS COUNTED?

The Friday proponents emphasize passages such as “The Son of Man . . . shall rise the third day” (Mark 9:31).¹² There are ten such verses in the synoptic Gospels. Many commentators hold that the Jews counted *inclusively*, with Friday as day one.¹³ However, they also counted *exclusively*. For example, in a summary of Jesus’s teachings on the subject, Mark writes that “the Son of man must . . . be killed, and *after* three days rise again” (Mark 8:31, emphasis added). The term *after* indicates exclusive counting, with Friday as day one. Similarly, on this view, Jesus’s opponents quote him as saying, “*After* three days I will rise again” (Matthew 27:63, emphasis added). Luke records two disciples saying to Jesus, whom they do not yet recognize, “to day is the third day *since* these things were done” (Luke 24:21, emphasis added), also denoting exclusive counting.

How can we resolve these apparent contradictions? Proponents of Friday usually resolve them by ignoring terms such as *after*. “Third day” can indeed mean the second day after. However, “third day” can also mean three days *after* an event. Thus the differences above can also be harmonized by adding inferred words such as “and the third day [*after*] he shall rise again” (Mark 10:34).

Jonah Cast Forth by the Whale, by Paul Gustave Doré. Courtesy IRI.

Page 56: *Deposition from the Cross*, by Rembrandt Harmensz van Rijn. Courtesy Scala/Art Resource, NY.

Page 57: *The Entombment*, by Carl Heinrich Bloch. Courtesy of Brigham Young University Museum of Art. All Rights Reserved.

THE SABBATH DAYS

The day of crucifixion revolves around a Sabbath day and its meaning. There were two kinds of Sabbaths noted in these passages, the *weekly Sabbath* and the *Passover Sabbath*. The Friday scenario requires that the Passover Sabbath and the weekly Sabbath be the same day.

Variations in chronology persist among the four gospels, and many issues remain unresolved.¹⁴ However, they all address the same event, and each of the four gospels places the Savior's death on the day of preparation, whether for the weekly Sabbath or for the Passover Sabbath. Matthew simply refers to "the day of the preparation" (Matthew 27:62). Mark and Luke identify it as the day before the Sabbath (Mark 15:42; Luke 23:54). John identifies it as "the Jews' preparation day" (John 19:42) and also the preparation of the Passover (John 19:14, 19:31). Then, after the weekly Sabbath, early in the morning on the first day of the week, his disciples found the tomb empty (Matthew 28:1; Mark 16:2; Luke 24:1; John 20:1). Were these the same Sabbath?

In partial answer, John wrote, "for that sabbath day was *an high day*" (John 19:31; emphasis added). Tradition holds that the day was "high" because it was the Passover Sabbath and also a weekly Sabbath. The Greek word *megalē*, translated as "high," can also mean large or great or broad.¹⁵ As an illustration, the eighth day of the Feast of Tabernacles was a Sabbath, a holy day of convocation and a solemn assembly (Leviticus 23:34–39). Referring to that Sabbath day John chose the same word: "In the last day, that *great day* of the feast, Jesus stood and cried, saying, If any man thirst, let him come unto me, and drink" (John 7:37; emphasis added). The Sabbath days of the sacred feasts were inherently special, hence "great" or "high."

In addition, in John 19:31 the Greek phrase might also be translated as "*the great day*," giving it additional emphasis. Thus this passage can be interpreted as distinguishing the Passover Sabbath from the weekly Sabbath rather than merging them.

BOOK OF MORMON REFERENCES

Fortunately, the Book of Mormon adds valuable information. The following passages describe events in the New World with which we can synchronize

Old World events. They are specific and detailed, especially the three days of darkness.

Samuel the Lamanite prophesied of both the birth and death of the Son of God. Concerning Jesus's birth, he spoke of a "day" and a "night" and a "day" of continuous light (Helaman 14:3–4). In recording the fulfillment of the prophecy, Nephi wrote "day" and "night" in the same explicit way (3 Nephi 1:13, 15, 19). These verses suggest the meaning as *natural* or 12-hour units.

Nephi also prophesied that Jesus was to rise *after* three days in the sepulchre: "Behold, they will crucify him; and *after he is laid in a sepulchre for the space of three days he shall rise from the dead*" (2 Nephi 25:13; emphasis added).

Samuel prophesied that three days of darkness would begin at the death of Jesus and continue to the time when he should rise again. Obviously the nights were also dark, but the times of importance are the *days* of darkness. The following passage gives the duration of darkness:



The prophecy of Samuel the Lamanite concerning the birth and death of Jesus Christ provides crucial clues to the timeline of the three days of darkness. *Samuel the Lamanite*, by Jorge Cocco Santangelo. May not be copied. For information see www.jorgecocco.com.



After the people in the New World suffered through destruction and three days of darkness, the resurrected Jesus Christ appeared and ministered to them. *First Contact*, by Jorge Cocco Santangelo. May not be copied. For information see www.jorgecocco.com.

Behold, in that day that he shall suffer death the sun shall be darkened and refuse to give his light unto you; and also the moon and the stars; and *there shall be no light upon the face of this land, even from the time that he shall suffer death, for the space of three days, to the time that he shall rise again from the dead, . . . and that darkness should cover the face of the whole earth for the space of three days.* (Helaman 14:20, 27; emphasis added)

Long before, Zenos had foretold three days of darkness associated with Christ’s burial in a sepulchre and as a sign of his death to the inhabitants of the “isles of the sea” and, more especially, to “the house of Israel” (1 Nephi 19:10). In addition, Samuel prophesied of many hours of storms, earthquakes, and upheavals at the Savior’s death (Helaman 14:21–23). Incidentally, these cataclysmic conditions have all been ascribed to explosive volcanic eruptions.¹⁶ In a way, the blanketing darkness had been foreshadowed by the three days of darkness invoked over Egypt by Moses (Exodus 10:21–23). That darkness, so thick it could be felt, became a type of the vapor of darkness felt by the Nephites (3 Nephi 8:20).

These signs of Jesus’s death, which had been looked for (3 Nephi 8:3), were recorded by Nephi the son of Nephi when the three days of darkness followed three hours of destruction:

And it came to pass that when the thunderings,

and the lightnings, and the storm, and the tempest, and the quakings of the earth did cease—for behold, they did last for about the space of three hours; . . . and *then behold, there was darkness upon the face of the land. . . .*

And it came to pass that it did last for the space of three days that there was no light seen. . . .

And it came to pass that *thus did the three days pass away.* And it was in the morning, and the darkness dispersed from off the face of the land. (3 Nephi 8:19, 23; 10:9; emphasis added)

It seems likely that the ejection of volcanic ash abated during the night (following the third day of darkness), during which the Savior arose from the tomb, and by morning the clouds had dispersed from Nephi’s location. Orson Pratt concludes: “The darkness lasted three days, and at the expiration of three days and three nights of darkness it cleared off, and it was in the morning.”¹⁷

CHRONOLOGY IN THE TWO HEMISPHERES

If we can match the sequence of events, which should be simultaneous in the two hemispheres, we may be able to synchronize the biblical accounts with the Book of Mormon account, recognizing that not all biblical passages are uniform.

Nephi was among the multitude at the temple in the land Bountiful when the Savior appeared (3 Nephi 11:1, 8–11, 18). If we accept Bountiful as being in the area of the Isthmus of Tehuantepec,¹⁸ this area lags behind Jerusalem by roughly eight and a half hours although the results should be valid throughout Mexico and Central America and any region north or south. For simplicity we have rounded this off to nine hours.

According to Samuel’s prophecy, the darkness was to begin when the Savior suffered death and end when he arose from the dead (see Helaman 14:20). With Jesus’s death about 3 PM Jerusalem time, the daytime darkness would have just begun in the New World about 6 AM. If we assume 38 to 40 hours of interment derived from a Friday crucifixion,¹⁹ the “mists of darkness” would have dispersed by 8 PM (adopting 38 hours) the following evening. Hence, the sun would have been visible the third day. A Friday crucifixion therefore appears to yield only two days of darkness in the New World (see figure 1).

From Matthew 27:45, Mark 15:25, Luke 23:44, and John 19:14 we can infer that the crucifixion began sometime between the third hour (9 AM) and the sixth hour (noon). Darkness began in Jerusalem at the sixth hour, approximately 3 AM in the New World (Matthew 27:45; Mark 15:33; Luke 23:44–45), and ended with the Savior’s death at about the ninth hour, or 3 PM (6 AM in the New World), when an earthquake hit Jerusalem and the temple veil was rent from top to bottom (Matthew 27:51; Mark 15:38; Luke 23:45). The cataclysms in the New World likewise lasted about three hours, and then there was darkness (3 Nephi 8:19). Since the New World darkness was to begin at the death of the Savior (6 AM in the New World), the three hours of

darkness in Jerusalem evidently coincided with the three hours of violence in the Western Hemisphere.

The three days of darkness in the New World began at the death of Jesus and ended in the morning after the mists of darkness dispersed (3 Nephi 10:9). Thus, the Savior would have been resurrected shortly before dawn in Jerusalem or at evening in the New World (Helaman 14:20). In early April the sun would have set at about 6 PM with darkness following shortly thereafter.

These passages lead to table 1 showing the sequence of events in the two hemispheres.

TABLE 1: Sequence of Events

1. The Savior was crucified from possibly the third hour to the ninth hour (9 AM to 3 PM).
2. He was put in the tomb between the ninth hour and sunset (3 PM and 6 PM).
3. Darkness in the New World began at the Savior’s death (6 AM) and lasted three days.
4. The resurrection was before dawn in Jerusalem and in the early evening in the New World after three days of darkness.

Table 2 details the period of time Christ was possibly in the tomb, allowing us to compare the Thursday and Friday scenarios. This table employs the Jewish custom in Jerusalem, with Friday beginning as Thursday ends at sunset (6 PM).

From these tables we can construct figure 2, which presents the chronology of the crucifixion and resurrection. These events occurred shortly after the beginning of spring (vernal equinox), so days and nights were close to 12 hours long.

FIGURE 1: TWO DAYS OF DARKNESS

Times are modern notation

New World (Time about 9 hours behind time in Jerusalem)

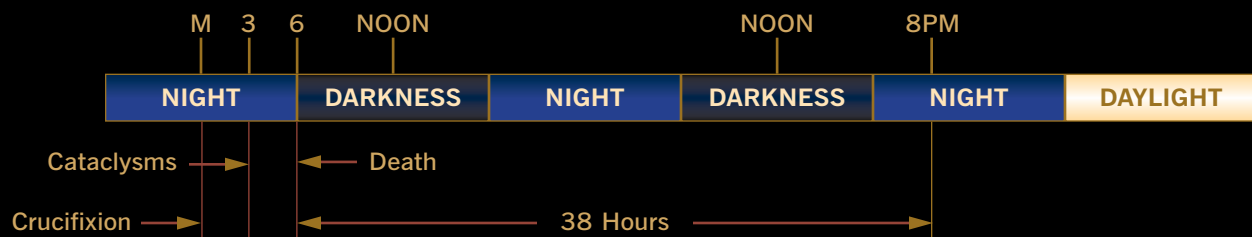
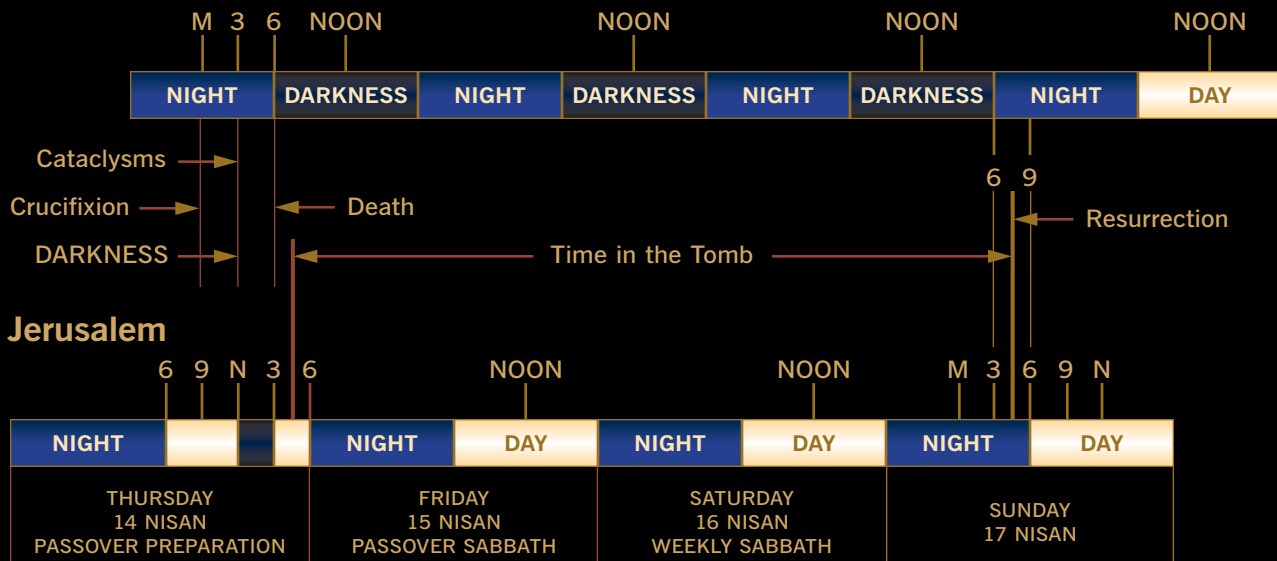


FIGURE 2: THREE DAYS AND THREE NIGHTS*

Times are modern notation

New World (Time about 9 hours behind time in Jerusalem)



*From Matthew 12:40

TABLE 2: Period of Time in the Tomb

Thursday Crucifixion

- Perhaps 1 hour Thursday afternoon
- 12 hours Friday night
- 12 hours Friday daytime
- 12 hours Saturday night
- 12 hours Saturday daytime
- Perhaps 11 hours Sunday night
- Total: About 60 hours (3 days and 3 nights)**

Friday Crucifixion

- Perhaps 1 hour Friday afternoon
- 12 hours Saturday night
- 12 hours Saturday daytime
- Perhaps 11 hours Sunday night
- Total: About 36 hours (2 days and 2 nights)**

CONCLUSION

The Bible and history alone have not been able to determine which day of the week the Savior was crucified. The more explicit statements, both prophetic and historical, in the Book of Mormon shed additional light on this question.

The arguments against the accuracy of Matthew 12:40, of course, are open to closer examination. Interpretations of the word *day*, how days were counted, and the reckoning of the Passover and

weekly Sabbath days, as we have seen, have reasonable alternatives. But, as shown in figure 1, a Friday crucifixion leads to only two days of darkness in the New World. However, a Thursday crucifixion matches the three days of darkness prophesied by Samuel the Lamanite, Zenos, and Nephi the son of Lehi and witnessed by the Nephi the son of Nephi, as shown in figure 2. These conclusions may not be readily accepted, but the alternative would seem to be two days of darkness in the New World rather than three. ■

dictatorships, being more likely to win or lose decisively than other regimes. A thorough development of the perceived relationship between democracy and war in Joseph Smith's day would require a much more expansive treatment than I provide. My concluding discussion is intended only to be suggestive. See Alexis de Tocqueville in Harvey Mansfield and Debra Winthrop, trans., *Democracy in America* (Chicago: University of Chicago Press, 2000), especially chs. 22–26, pp. 617–35.

36. I would like to thank S. Kent Brown for his valuable comments and three anonymous reviewers for their uncommonly thorough and insightful suggestions. Errors remain my own.

Three Days and Three Nights: Reassessing Jesus's Entombment
David B. Cummings

1. Harold W. Hoehner, *Chronological Aspects of the Life of Christ* (Grand Rapids: Zondervan, 1977), 65–74.
2. Raymond E. Brown, *The Death of the Messiah, From Gethsemane to the Grave* (New York: Doubleday, 1994), 2:1350–73.
3. John P. Pratt, "The Restoration of Priesthood Keys on Easter 1836, Part I: Dating the First Easter," *Ensign*, June 1985, 61–68.
4. Jack Finegan, *Handbook of Biblical Chronology: Principles of Time Reckoning in the Ancient World and Problems of Chronology in the Bible* (Princeton: Princeton University Press, 1964), 285–301.
5. Hoehner, *Chronological Aspects of the Life of Christ*, 66.
6. D. Kelly Ogden and Andrew C. Skinner, *Verse by Verse, The Four Gospels* (Salt Lake City: Deseret Book, 2006), 277.
7. James E. Talmage, *Jesus the Christ* (Salt Lake City: Deseret Book, 1947), 697 n. 1.
8. Pratt, "Restoration of Priesthood Keys," 61.
9. Brown, *Death of the Messiah*, 1351.
10. Hoehner, *Chronological Aspects of the Life of Christ*, 70.
11. Hoehner, *Chronological Aspects of the Life of Christ*, 69.
12. Brown, *Death of the Messiah*, 1351.
13. Pratt, "The Restoration of

Priesthood Keys on Easter 1836," 61.

14. Brown, *Death of the Messiah*, 1356–73.
15. Walter Bauer, *A Greek-English Lexicon of the New Testament and Other Early Christian Literature*, trans. William F. Arndt and F. Wilbur Gingrich, 4th rev. ed. (Chicago: University of Chicago Press, 1957), 498–99.
16. Bart J. Kowallis, "In the Thirty and Fourth Year: A Geologist's View of the Great Destruction in 3 Nephi," *BYU Studies* 7/3 (1997–98): 136–90.
17. George Reynolds and Janne M. Sjodahl, *Commentary on the Book of Mormon*, amplified and arranged by Philip C. Reynolds and David Sjodahl King (Salt Lake City: Deseret Book, 1973), 4:285.
18. John L. Sorenson, *An Ancient American Setting for the Book of Mormon* (Salt Lake City: Deseret Book and FARMS, 1985), 6, 12–14, 18–20, 26, 336.
19. Bruce R. McConkie, *Doctrines of the Restoration* (Salt Lake City: Bookcraft, 1989), 119.

The Hunt for the Valley of Lemuel

S. Kent Brown

1. See George D. Potter, "A New Candidate in Arabia for the Valley of Lemuel," *JBMS* 8/1 (1999): 54–63; also consult Michael Lloyd Ingraham, Theodore D. Johnson, Baseem Rihani, and Ibrahim Shatla, "Saudi Arabian Comprehensive Survey Program: C. Preliminary Report on a Reconnaissance Survey of the Northwestern Province (With a Note on a Brief Survey of the Northern Province)," *ATLAL: The Journal of Saudi Arabian Archaeology* 5 (AH 1401, AD 1981): 59–84, especially 64: "The Tayyib al-Isim gorge extends c. 4–5 km. and has vertical sides 400–800 m. high; the gorge itself is less than 50 m. wide."
2. Rushdi Said, *The River Nile: Geology, Hydrology and Utilization* (New York: Pergamon, 1993), 7; George Rentz also writes that "Arabia contains no large perennial rivers" ("Al-ʿArab, D̲jaz̲irat," *The Encyclopaedia of Islam* [Leiden: Brill, 1960–], 1:537).
3. Nigel Groom, *Frankincense and Myrrh: A Study of the*

Arabian Incense Trade (London: Longman Group, 1981), 87–88.

4. For the coastline south of Aqaba, Jordan, consult the "Geographic Map of the Ḥaql Quadrangle, Sheet 29A, Kingdom of Saudi Arabia," Geoscience Map GM–80B, Ministry of Petroleum and Mineral Resources, Deputy Ministry for Mineral Resources (Jiddah, Saudi Arabia, AH 1404, AD 1984); this map repeats the name of this wadi; also "Wadi as Sirḥan" map, Series K462, Edition 1-AMS, Stock no. K462XNH37W, Prepared by the Army Map Service (AM), Corps of Engineers, U.S. Army, Washington, D.C. Copied from Miscellaneous Geologic Investigations (1963); also "Geologic Map of the Ḥaql Quadrangle, Kingdom of Saudi Arabia," Mineral Investigation Map MI–12, Ministry of Petroleum and Mineral Resources (1966); finally "Arabian Peninsula," Series 5211, Edition 2–GSGS, Director of Military Survey, Ministry of Defence, United Kingdom (1980).
5. Wadi Nuwaybiʿ is the choice of Paul Hedengren; see his *Land of Lehi: Further Evidence for the Book of Mormon* (Provo, UT: Tepran, 1999), 19–23.
6. "Geologic Map of the al-Badʿ Quadrangle, Sheet 28A, Kingdom of Saudi Arabia," Ministry of Petroleum and Mineral Resources (AH 1407, AD 1987).
7. A wadi near Biʿr Marshah is favored by Jeffrey R. Chadwick; see his "The Wrong Place for Lehi's Trail and the Valley of Lemuel," *FARMS Review* 17/2 (2005): 214–15; "An Archaeologist's View," *JBMS* 15/2 (2006): 72–73. The distance was measured by Potter in his vehicle; see his "A New Candidate in Arabia for the Valley of Lemuel," 59. See also Daniel C. Peterson's brief response to Chadwick's first study in "Not So Easily Dismissed: Some Facts for Which Counterexplanations of the Book of Mormon Will Need To Account," *FARMS Review* 17/2 (2005): xxv–xxvi, xlvi.
8. In private correspondence, George Potter writes that his odometer measured 104 miles from Aqaba to al-Badʿ (dated June 9, 2007).

9. Lynn M. Hilton and Hope A. Hilton, *In Search of Lehi's Trail* (Salt Lake City: Deseret Book, 1976), 63–64; Lynn M. Hilton and Hope A. Hilton, *Discovering Lehi* (Springville, UT: Cedar Fort, 1996), 49–55.
10. Hedengren, *Land of Lehi*, 19; Chadwick, "Wrong Place for Lehi's Trail and the Valley of Lemuel," 210. In recent private correspondence, dated June 8, 2007, Lynn Hilton has kept to his earlier position of favoring al-Badʿ.
11. Ingraham, Johnson, Rihani, and Shatla, "Saudi Arabian Comprehensive Survey Program: C. Preliminary Report on a Reconnaissance Survey of the Northwestern Province," 71–75.
12. Chadwick, "Wrong Place for Lehi's Trail and the Valley of Lemuel," 211; Chadwick, "An Archaeologist's View," 72; Nibley points out that the expression "river of water" (1 Nephi 2:6) means that the streambed contained flowing water (*Lehi in the Desert; The World of the Jaredites; There Were Jaredites* [Salt Lake City: Deseret Book and FARMS, 1988], 80).
13. Said, *The River Nile*, 7; Rentz, "Al-ʿArab, D̲jaz̲irat," *Encyclopaedia of Islam*, 1:537.
14. Maps that I have consulted show no such stream in Wadi Nuwaybiʿ nor have my two brief visits to the area of the Jordan-Saudi Arabia border. See the "Geographic Map of the Ḥaql Quadrangle, Sheet 29A, Kingdom of Saudi Arabia," Geoscience Map GM–80B (1984); "Wadi as Sirḥan" Map, Army Map Service (AM), Corps of Engineers, U.S. Army, Washington, D.C. Series K462, Edition 1-AMS, First Printing, Sheet NH 37–W, Stock no. K462XNH37W (1963), based on USGS, Map 1–200B, edition 1962; and "Geologic Map of the Ḥaql Quadrangle, Kingdom of Saudi Arabia," Mineral Investigation Map MI–12, Ministry of Petroleum and Mineral Resources (1966).
15. "Wadi as Sirḥan" Map, Army Map Service (AM), Corps of Engineers, U.S. Army, Washington, D.C. Series K462, Edition 1-AMS, First Printing, Sheet NH 37–W, Stock no. K462XNH37W (1963), based on USGS, Map 1–200B, edi-