Contrary to what some may assume, the plates were most likely made not of pure gold but rather of an alloy termed *tumbaga* by the Spanish.
with a black, hard stain, so as to make the letters more legible and easier to be read.”

—Orson Pratt

The following statements, though based on transcriptions of the characters engraved on the plates and not on examination or intimate knowledge of the plates themselves, are also of interest.

“It [Joseph’s transcription of characters from the plates] consisted of all kinds of singular characters disposed in columns, ... Greek and Hebrew letters, crosses and flourishes; Roman letters inverted or placed sideways were arranged and placed in perpendicular columns, and the whole ended in a rude delineation of a circle, divided into various compartments, arched with various strange marks, and evidently copied after the Mexican calendar.”

—Charles Anthon

“The characters were arranged in columns, like the Chinese mode of writing, ... Greek, Hebrew and all sorts of letters, more or less distorted, ... were intermingled with sundry delineations of half moons, stars, and other natural objects, and the whole ended in a rude representation of the Mexican zodiac.”

—Charles Anthon

“[Martin Harris] was in the habit of exhibiting to his hearers what he claimed to be a fac simile [sic] copy of the title page of the forthcoming book [Book of Mormon].” One who saw this copy said, “On it were drawn rudely and bunglingly, concentric circles, between, above and below, which were characters, with little resemblance to letters.”

—Charles W. Brown

OF WHAT MATERIAL WERE THE PLATES?

Were the Book of Mormon plates pure gold, or were they made from an alloy that looked like gold? The most serious investigation of this question was done 45 years ago by Read H. Putnam of Evanston, Wyoming, a blacksmith and metallurgist. Working first from the general dimensions of the set of plates as reported by eyewitnesses, he calculated that a block of pure gold of that size would have weighed a little over 200 pounds. A number of witnesses, however, put the weight of the set at about 60 pounds. The discrepancy can be partly accounted for by the fact that the leaves must have been handcrafted, presumably by hammering, and irregularities in flatness would have left air space between the plates. This led Putnam to surmise that the entire set of plates would have weighed probably less than 50 percent of the weight of a solid block of the metal.

Because the weight of a metal depends on its purity, we must also consider whether the plates were of pure gold. The Nephites were aware of purity distinctions and alloys. We know, for example, that the “brass” plates were of an alloy (quite surely bronze, a copper-tin mixture) and that the plates of Ether were specifically distinguished as being of “pure” gold (Mosiah 8:9). Furthermore, Nephi taught his associates “to work in all manner of metals and precious ores” (2 Nephi 5:15). Yet nowhere does the text say that the Nephites’ plates were of pure gold.

Joseph Smith’s brother William specifically said that the material of the plates was “a mixture of gold and copper.” (Someone must have provided an objective basis for that statement, for the natural assumption would have been that the plates were pure gold.) The cautious statements by other witnesses, including Joseph Smith himself, who spoke of the plates as having “the appearance of gold,” suggest that the metal may have been an alloy.

Putnam observed that the only two colored metals from antiquity were gold and copper. An alloy of those two elements was called “tumbaga” by the Spaniards and was in common use in ancient tropical America for manufacturing precious objects. Putnam put forward the reasonable hypothesis that metal plates made in Mormon’s day were of that material (the earliest Mesoamerican archaeological specimen of tumbaga—made from a hammered metal sheet—dates to the same century, the fifth century A.D., when Moroni hid up the plates he had in his possession). If Mormon’s Book of Mormon plates were made of tumbaga, their weight would have been much less than had they been made of pure gold. Putnam made that point in mathematical detail and concluded that the total weight of the plates in Joseph Smith’s charge would have been near the 60-pound figure reported by several witnesses.

It is of interest that tumbaga was commonly gilded by applying citric acid to the surface. The resulting chemical reaction eliminated copper atoms from the outer .0006 inch of the surface, leaving a microscopic layer of 23-carat gold that made the object look like it was wholly gold. Plates having “the appearance of gold,” then, are exactly what we would expect if they were made of tumbaga.
“What Meaneth the Words That Are Written?” Abinadi Interprets Isaiah

Ann Madsen


2. The brass plates version of Isaiah presumes that, in the era of Isaiah, the Seer Scroll was called the Great Isra Scroll; by about 400 B.C.E. it was known as the KJV Old Testament. So the writings of Isaiah in the Book of Mormon become the earliest text of Isaiah available to us.

3. 1 Nephi 3:17–20 implies that the record on the brass plates would have perished if Nephi had not recovered it. On the importance of this record, see 1 Nephi 5:17–19. 3 Nephi 10:17 offers an example of other precious material found in the brass plates concerning the “seed of Joseph.”


5. In my edition of the scriptures, Abinadi’s response runs for nearly five pages, including the last verse of Isaiah 12 and the entirety of Mosiah 13–16.


7. For more on this see David R. Seely, “The Ten Commandments in the Book of Mormon,” in David R. Seely, ed., The Ten Commandments in the Book of Mormon; and Orson Pratt, in a pamphlet titled An Interesting Account, offers a very different explanation; the title of his pamphlet is “Several Remarkable Visions, and of the Late Discovery of Ancient American Records” (Edinburgh, Scotland: Ballantyne and Hughes, May 1400), 12–13. The Wentworth Letter, the Prophet Joseph Smith’s sketch of the history and faith of the Latter-day Saints written for the editor of the Chicago Democrat, utilizes much of the same language found in Pratt’s pamphlet. Although Pratt did not see or handle the plates, he learned much about them through his close association with Joseph Smith. Nowhere in the documentary evidence did the witnesses or other key participants in the coming forth of the Book of Mormon describe the plates as being made of solid or pure gold.


10. From this point on in the dialogue, I quote rather than paraphrase Abinadi’s powerful words.


14. See John L. Sorenson, An Ancient American Setting for the Book of Mor­­mond (Salt Lake City: Deseret Book and FARMS, 1985), 283–84; and his “Metal and Metalurgy Relating to the Book of Mormon Text” (FARMS, 1992).


17. Ibid., 168.

18. Interview with Martin Harris, Tiffany’s Monthly, May 1859, 169.

19. Ibid., 168.

20. Ibid., 168.

21. Ibid., 168.

22. Ibid., 168.

23. Ibid., 168.

24. Ibid., 168.

25. Ibid., 168.

26. Ibid., 168.

27. Ibid., 168.

28. Ibid., 168.

29. Ibid., 168.

30. Ibid., 168.

31. Ibid., 168.

32. Ibid., 168.

33. Ibid., 168.

34. Ibid., 168.

35. Ibid., 168.

36. Ibid., 168.

37. Joseph Smith Jr., “Church History” ( Wentworth Letter), Pratt, An Interesting Account, 13. This description of the plates is slightly different, adding, for example, the following italicized words: “[The plates] were filled on both sides with . . . Egyptian . . . characters . . . . The characters or letters upon the unsalted part were small, and beautifully engraved.”


39. “Testimony of the Eight Witnesses” (Putnam’s manuscript, 1869 [probably written in 1859]) is found in the possession of his anti-Mormon friends. As reported in Richard L. Anderson, Investigating the Book of Mormon Witnesses (Salt Lake City: Deseret Book, 1981), 131.

40. Unless otherwise noted, all dates are given relative to the calendar of the Book of Mormon. Names of months are based on the Gregorian calendar.


44. From Charles W. Briner, “Manchester in the Early Days,” Shortsville Enterprise (Aug. 15) (ca. 1883), as recorded by Orsamus Turner, with additions by Putnam and James Whitney. The plates were discovered at his home in Manchester, New Hampshire.

45. Historical Department Archives, Deseret Register, 1 October 1879.


47. Ibid., 168.

48. Ibid., 168.

49. Ibid., 168.

50. Ibid., 168.

51. Ibid., 168.

52. Ibid., 168.

53. Ibid., 168.

54. Ibid., 168.

55. Ibid., 168.

56. Ibid., 168.

57. Ibid., 168.

58. Ibid., 168.

59. Ibid., 168.

60. Ibid., 168.

61. Ibid., 168.

62. Ibid., 168.

63. Ibid., 168.

64. Ibid., 168.

65. Ibid., 168.

66. Ibid., 168.

67. Ibid., 168.

68. Ibid., 168.

69. Ibid., 168.

70. Ibid., 168.

71. Ibid., 168.

72. Ibid., 168.

73. Ibid., 168.

74. Ibid., 168.

75. Ibid., 168.

76. Ibid., 168.

77. Ibid., 168.

78. Ibid., 168.

79. Ibid., 168.

80. Ibid., 168.

81. Ibid., 168.

82. Ibid., 168.

83. Ibid., 168.

84. Ibid., 168.

85. Ibid., 168.

86. Ibid., 168.

87. Ibid., 168.

88. Ibid., 168.

89. Ibid., 168.

90. Ibid., 168.

91. Ibid., 168.

92. Ibid., 168.

93. Ibid., 168.

94. Ibid., 168.

95. Ibid., 168.

96. Ibid., 168.

97. Ibid., 168.

98. Ibid., 168.

99. Ibid., 168.

100. Ibid., 168.

101. Ibid., 168.

102. Ibid., 168.

103. Ibid., 168.

104. Ibid., 168.

105. Ibid., 168.

106. Ibid., 168.

107. Ibid., 168.

108. Ibid., 168.

109. Ibid., 168.

110. Ibid., 168.

111. Ibid., 168.

112. Ibid., 168.

113. Ibid., 168.

114. Ibid., 168.

115. Ibid., 168.

116. Ibid., 168.

117. Ibid., 168.

118. Ibid., 168.
nished a product similar in appearance (see Lechman, “Pre-Columbian Sur-
face Metallography,” 1997, that George Strayer-Pearce, “The Eastem Region: A Second Locus for the Pro-
duction of Bronze Alloys in Ancient Mesoamerica,” Science 257, 28 August 1992, 1215). Moreover, Nephi’s original plates might have been of different composition than Mormon’s plates.

The Book of Mormon Plates
Janne M. Sjodahl

Like the article itself, the following notes are as they appeared in the original article from the April 1923 Improvement Era, with the exception that publication data has been added in brackets.

1. This is quoted from (Gregg Thomas, The Prophecy of Palmyra [New York: J. B. Alden, 1896]) and may or may not be authentic.

2. An excellent little book by George Reynolds (Salt Lake City: Juvenile Instructor Office, 1883).

3. The American edition, published at Nauvoo, 1842, has 566 pages, 5 1/2 inches, including the margins.


5. The account related must have been given by the Prophet himself to his mother. [The pages cited correspond to the 1902 edition of this book, revised through the Destruction of the First Nauvoo, 1842, has 566 pages, 5 1/2 inches, including the margins.]

Epigraphic Considerations on Janne Sjodahl’s Experiment with Nephi’s Writing John Gee

1. Robert Deutsch, Messages from the Past Hebrew Bibles from the Time of Isaiah Through the Destruction of the First Temple, Philadelphia: Jewish Publication Society and an Up-to-Date Corpus (Tel Aviv: Archaeological Center Publications, 1999).


The Book of Mormon Art of Arnold Friberg
Vern Swanson


3. John L. Sorenson correspondence with the author (21 May 1999), in the au-
thor’s possession. Two generations later, Sorenson would issue a book, Images of Ancient America: Visualizing Book of Mormon Life (Provo, Utah: Research Press/FARMS, 1998), that pro-
vided some of the information Friberg had hoped for in 1951.

4. Arnold Friberg notes (February 2001), SMA Library.


6. Margot J. Butler, Special Education Co-
ordinator, Church Education System, Salt Lake Valley North Area, transcript of an interview with Friberg (3 June 1986). This and other quotes from the transcript were modified by Friberg himself upon reviewing this article in manuscript form in February 2001.

7. Ibid.


10. Ibid.


12. Quoted in Grady Johnson, “Moses and the Mormon Artist,” Instructor, September 1954. The final nine words in the quotation were added by Friberg in an interview with the author in February 2001.

13. Arnold Friberg notes (February 2001), SMA Library.

14. All the comments are from Butler’s 1986 interview, modified by Friberg in February 2001.

15. Friberg statement to Vern Swanson, December 2000.


17. It was exhibited in December 2000 at Williams Fine Art in Salt Lake City on the occasion of a show of Friberg’s work.

The Journey of an 1830 Book of Mormon Gerald E. Jones

1. Journal of Samuel Smith, Historical Department Archives, Church of Jesus Christ of Latter-day Saints, Salt Lake City, 3:347.

2. I have obtained three other 1830 books from the Nauvoo edition of this book, revised through the Destruction of the First Nauvoo, 1842, has 566 pages, 5 1/2 inches, including the margins.


4. Some consider 2 Nephi 27 to be partly from the text of Isaiah 29 with Nephi’s comments interspersed. Because Isaiah 29 in the Joseph Smith Translation contains almost the exact wording of 2 Nephi 27, I accept the whole chapter of 2 Nephi 27 as the original text of Isaiah except for the introductory verse and a slight paraphrasing of verse 19, and 3 2 Nephi 28 also implies that Nephi had concluded his quoting of Isaiah and was now adding his com-
ments.

5. See Sidney B. Sperry, Doctrine and Covenants Compendium (Salt Lake City: Bookcraft, 1960), 1. The quote is from the text of Isaiah 29:25–26 of “how in ‘that day shall the Lord of hosts be for a crown of glory, and for a diadem of beauty, and for the remnant of his people’” (Isaiah 29:25). The context of that chapter is Ephraim, or northern Israel, in the day of its wickedness, prior to being taken into captivity by Assyria in 721 B.C. Typical of Old Testament prophecy, a message of doom (captivity) is followed by a mes-
sage of hope referring to the restora-
tion of the latter days as “in that day.” The residue is probably the remnant of the tribes of the north that would someday return (see Isaiah 6:13, 7:3 the name Shear-jashub means “remnant shall return”).

6. “The crown of glory” suggests the tem-
ple endowment and sealings in other scriptural passages. Enoch was com-
manded to ascend Mount Sionon, where he was “clothed upon glory” (see Moses 7:2–3). President Joseph Fielding Smith believed that Peter, James, and John received their endowments on the Mount of Transfiguration (see Matthew 17:1–9) when they were given the keys of the kingdom (see his Doctrines of Salvation, comp. Bruce R. McConkie [Salt Lake City: Bookcraft, 1999], 2:165). The Lord has often used the mountain for his holy place when there were no temples available (as he did with Moses in Exodus 24:12–13:8 and with Elijah in 1 Kings 19). While we have no direct scriptural statement that the “rich treasure” mentioned in D&C 13:4 are genealogical records, the above script-
s suggest that such records will constitute at least a part of that legacy. One of the most significant contributions of the latter-day restoration is the

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