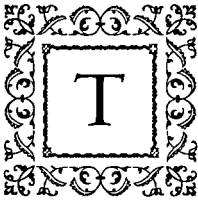


The Bone Called Luz

EDWARD REICHMAN and FRED ROSNER



THE Hebrew or Aramaic word *luz* has several meanings. It refers to a city in ancient Israel and another city in the land of the Hittites. It also means nut, almond, hazel, hazel nut, or nut tree. *Luz* also means to turn, twist, or bend. It also connotes libel or disrespectful talk.¹ Finally, *luz* refers to a bone, said to be at the bottom of the spinal column, which is the subject of this essay.

THE CITY OF LUZ

Luz is the Canaanite name of the city known to the Israelites as Beth El (literally: the house of G-d) because of Jacob's dream there.² Beth El is also called *Luz* when Jacob returned there.³ In his blessing of Joseph's sons, Jacob again refers to Luz where G-d appeared to him.⁴

In the description of the borders of Ephraim, Beth El and Luz seem to be separate entities as it is written: *And it went out from Beth El to Luz and passed along unto the border of the Archites to Ataroth.*⁵ The biblical commentary by Rabbi David Kimchi (1160–1235) suggests that this was a different Beth El. Another interpretation is that Beth El was outside the city of Luz and represented the outskirts of the city. This thesis is supported by a later biblical verse: *And the border passed along from thence to Luz, to the side of Luz—the same is Beth El—Southward.*⁶ Thus, when Jacob had his dream, he spent the night on the outskirts of Luz to avoid the danger of entering a strange town at night.⁷

1. M. Jastrow, *Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature* (New York: Pardes Publishing House, 1950), vol. 2, pp. 695–96, R. Alcalay, *The Complete Hebrew-English Dictionary* (Hartford: Prayer Book Press, 1965), p. 1106.

2. Genesis 28:19.

3. Genesis 35:6.

4. Genesis 48:3.

5. Joshua 16:2.

6. Joshua 18:13.

7. J. H. Hertz, *The Pentateuch and Hafiorahs* (Landon: Oxford University Press, 1929), vol. 1, Genesis, p. 244.

Another city called Luz was built by one of its inhabitants in the land of the Hittites, one of the seven nations of Canaan. This man delivered the city as described in the Bible:

And the house of Joseph, they also went up against Beth-el; and the Lord was with them. And the house of Joseph sent to spy out Beth-el—now the name of the city beforetime was Luz. And the watchers saw a man come forth out of the city, and they said unto him: “Show us, we pray thee, the entrance into the city, and we will deal kindly with thee.” And he showed them the entrance into the city, and they smote the city with the edge of the sword; but they let the man go and all his family. And the man went into the land of the Hittites, and built a city, and called the name thereof Luz, which is the name thereof unto this day.⁸

This explains how a city by the name of Luz should have existed in the days of the judges so far away from Canaan. It was built in memory of the original Luz. According to later sources such as Eusebius, Luz and Beth El are the same city. Some scholars conclude from the above biblical references that Luz remained the name of the city until the time of Jeroboam and that Beth El was originally the name of the Sanctuary to the East of it. More probable is the view that Luz was the ancient name of the neighboring town of Ai and that Beth El inherited the role and area of Ai.⁹

Later legend invested the city of Luz with marvelous powers. Sennacherib and Nebuchadnezzar were unable to conquer it, and no one who stayed within its walls died because the angel of death had no power there.¹⁰ It is also the place where the blue dye was made for the fringes.¹¹ The pertinent talmudic passage is as follows:

And the man went into the land of the Hittites, and built a city, and called the name thereof Luz: which is the name thereof unto this day. It has been taught: That is the Luz in which they dye the blue; that is the Luz against which Sennacherib marched without destroying it, and even the Angel of Death has no permission to pass through it, but when the old men there become tired of life they go outside the wall and then die.¹²

The Talmud proves from the words *which is the name thereof unto this day* that the city survived destruction and still exists. This indestructibility of the city of Luz is probably the source for the legend that the bone called luz is also indestructible as described below.

8. Judges 1:22–26.

9. C. Roth, ed., *Encyclopedia Judaica* (Jerusalem: Keter Publishing House, 1971), vol. 11, p. 593.

10. I. Landman, ed., *The Universal Jewish Encyclopedia* (New York: 1942), vol. 7, p. 244.

11. Numbers 15:38.

12. Sotah 46b.

THE BONE CALLED LUZ IN JEWISH SOURCES

The homiletical interpretation of the Scriptures known as Midrash describes the luz as an indestructible bone of the spinal column, probably shaped like an almond. It is from this bone that the resurrection of the dead will take place. Even if the rest of the body decays and disintegrates, the luz bone remains intact and will provide the starting point for the reintegration of the body at the time of the resurrection.

Commenting on the biblical verse, *And the almond tree shall blossom*,¹³ the Midrash states the following:

Rabbi Levi says it refers to the nut (*luz*) of the spinal column. Hadrian, may his bones be crushed, asked Rabbi Joshua ben Hananiah: whence will man sprout in the Hereafter? He replied: from the nut (*luz*) of the spinal column. He said to him: prove it to me. He had one brought; he placed it in water but it did not dissolve, he put it in fire, but it was not burnt, he put it in a mill but it was not ground. He placed it on an anvil and struck it with a hammer; the anvil split and the hammer was broken but all this had no effect on the *luz*.¹⁴

A nearly identical Midrash is found elsewhere including the conversation between Hadrian and Rabbi Joshua.¹⁵ Only once in recorded history was the luz bone destroyed and that was during the Flood when the Lord destroyed the entire world except for Noah and his family and the animals in the ark. The Bible records that the Lord said, *I will blot out man whom I have created*.¹⁶ The Midrash comments on this verse as follows:

Rabbi Levi said in R. Johanan's name: Even the nether stone of the millstone was dissolved . . . Rabbi Johanan said in the name of Rabbi Simeon B. Jehotzadak: even the nut (*luz*) of the spinal column from which the Holy One blessed be He will cause man to blossom forth in the future [that is, at the resurrection] was dissolved.¹⁷

The Talmud states that a hen lays its eggs for twenty-one days and corresponding to a hen is the almond tree (*luz*) among trees.¹⁸ This means that from the time of its blossoming until the fruits ripen, twenty-one days elapse. A similar statement is found in the Jerusalem Talmud.¹⁹ The Midrash, in two separate places, also makes the pronouncement

13. Ecclesiastes 12:5.

14. Ecclesiastes Rabbah 12:5.

15. Leviticus Rabbah 18:1.

16. Genesis 6:7.

17. Genesis Rabbah 28:3.

18. Bechorot 8a.

19. Jerushalmi Taanit 4:68.

that the almond tree (*shaked*) takes twenty-one days from the time it blossoms to the time when its fruit ripen.²⁰

It is thus clear from these sources that the luz bone is located in the spinal column and is shaped like an almond. Whether the luz represents the coccyx or lowest bone in the spinal column, as many writers suggest, cannot be established with certainty. Non-Jewish scholars in the Middle Ages accepted the legend of the indestructibility of the bone called luz and spoke of the Jews' bone or *Juden-knoechlein*. They identify it as the last vertebra of the spinal column, the sacrum, the coccyx, the twelfth dorsal vertebra, wormian bones in the skull, or one of the sesamoid bones of the great toe.²¹ These various opinions are discussed in the next section of this essay.

The 248 bones of the human body are enumerated in the Mishna.²² It is unclear from whence the Rabbis derived this number. In the only talmudic case which resembles a postmortem examination, 252 limbs or bones were found.²³ Although the bone called luz is not mentioned in the two aforementioned passages, there is mention in the Talmud²⁴ of a small bone at the end of the spine. Some have identified this bone as the luz bone.²⁵ According to Preuss, this unusual little bone, which can only refer to the coccyx, was sought in various sites of the body by the anatomists of the Middle Ages without their being able to find it.²⁶

THE BONE CALLED LUZ IN NON-JEWISH SOURCES

A number of non-Jewish sources discuss the notion of an indestructible bone. The sources vary from theological to literary to anatomical. Some of these sources attribute the notion to Rabbinic tradition, others do not. As each source merits its own discussion, they are addressed individually and in chronological order.

*Sebastian Muenster (1489–1552)*²⁷

Sebastian Muenster was an outstanding Christian Hebraist of the sixteenth century. His proficiency in the Hebrew language earned him the

20. Ecclesiastes Rabbah 12:7 and Lamentations Rabbah, poem.

21. F. H. Garrison, "The bone called 'luz,'" *N.Y. Med. J.*, 1910, 92, 149–51.

22. Oholot 1:8.

23. Bechorot 45a.

24. Berachot 28b.

25. E. Rokeach, *Sefer Rokeach Hagadol*, laws of prayer.

26. F. Rosner, trans., *Julius Preuss' Biblical and Talmudic Medicine* (New York: Hebrew Publishing Co., 1978), p. 65.

27. See Roth, (n. 9) *Encyclopedia Judaica*, vol. 12, pp. 505–06.

position of professor of Hebrew at Basel University in 1528. He authored a number of grammatical treatises as well as Latin translations of Hebrew works, including the Bible.²⁸ Amongst his many works is a small book of Christian-Jewish Polemics entitled *Sefer Ha-veekuakh* or *The Messiah of the Christians and the Jews*.²⁹ This work is a continuation of the tradition of Jewish-Christian debate in the Middle Ages and is derivative from earlier similar works.³⁰

It is in the context of this work that there appears a passage on the indestructible bone.³¹ The work is structured as a dialogue between a Christian and a Jew and this section is excerpted from the statement of the Christian.

But in the world to come and resurrection of the dead, it is farre otherwaies [sic] with us; for then man shall be by the resurrection, a new creature, and renewed upon their former bones, like that vision in Ezekiel, when the Lord G-d did raise up His people, saying I will lay sinews upon you, and will bring up flesh upon you, and will cover you with skin, and put breath in you, and ye shall live. Wherefore, your Rabbis have said in the secrets of the Law, that there is in the *neibe*,³² a very stiffe bone, which being put in the fire, is not hurt by it, and being put into the ground, doth not putrifie, and they affirm the resurrection of the body doth increase by that. So also it is in Genesis, and the Lord made; I say upon the bone, sinewes, flesh and skin, and breathed into her the breath of life, and brought her to Adam, that by this mystery he might foreshew, although man should dye, yet hee should rise in the same body and should be made a building of nerves, bones, and flesh joined together, which should not be dissolved, wherefore Adam called her bone of my bone, because the resurrection of man should be in his first bones of eternal life.³³

28. The earlier editions of Muenster's works are often sold at contemporary Judaica and Hebraica auctions. Muenster's Bible translation was recently sold at auction in Swann Galleries on 16 December 1993.

29. Sebastian Muenster, *Sefer Ha-veekuakh* (Basel, 1539). This book was originally published as one volume in both Hebrew and Latin. However, a number of libraries, including the British Library and the New York Public Library, only possess the Hebrew section of this work. For further bibliographical details, see J. Pijls, *Die Basler Hebraischer Drucke (1492-1866)* (Basel: Urs Graf-Verlag, Olten und Freiburg, 1964), pp. 91-93.

30. Pijls, (n. 29) *Hebraischer Drucke*, p. 92. See also, D. Berger, *The Jewish-Christian Debate in the High Middle Ages* (a critical edition of the *Nizzahon Vetus* with an introduction, translation, and commentary by David Berger) (Philadelphia: Jewish Publication Society of America, 1979), p. 377.

31. This passage does not appear in the British Library copy of *Sefer Ha-veekuakh*, which lacks a title page, consists of only the Hebrew section of this work, and appears to us to be an abridged version of Muenster's original. We were unable, however, to make a direct comparison between the British Library copy and other copies.

32. The Hebrew term is *tzavar*, which means neck. We were unclear as to the etymology of the word "neibe" and have been unable to locate it in either English or Latin language dictionaries.

33. This passage is excerpted from the translation of Muenster's work by Paul Isaah which was published in London, 1655.

Muenster refers to the indestructible bone, but does not ascribe to it the name luz. In addition, he quotes the source of this notion as being from the “secrets of the Law” which likely refers to mystical or kabbalistic literature. Muenster was familiar with the works of Menahem Recanati,³⁴ an early fourteenth-century Italian kabbalist and halakhic authority, but his notion of the indestructible bone could not have derived from Recanati as the latter places the bone at the bottom of the spine, not in the neck.³⁵ Other kabbalistic sources, however, do describe the bone as being in the neck.³⁶

*Andreas Vesalius (1514–64)*³⁷

Vesalius, the master of Renaissance anatomy, makes mention of an indestructible bone in his monumental work *De Humani Corporis Fabrica*.³⁸ The relevant passage is found in a discussion on the sesamoid bones of the foot.

Another one of these bones is that which the magicians and followers of occult philosophy so often call to mind as being fashioned like a chickpea, liable to no decay, and which, buried in the earth after death, will (they affirm) reproduce man like a seed on the day of the Last Judgment. This may perhaps be the bone on either side, but is more likely to be the exterior, which is somewhat like a pea; for on bringing both bones in apposition we should obtain a whole pea. Then the internal ossicle is so large in men of great stature that a die might easily be made out of it. These bones differ, however, from those noted by the Arabs in that they may be burned or broken like other bones, as well as in being surely liable to decay to some extent, although of durable structure. But the dogma which asserts that man will be regenerated from this bone, of which we have just narrated the immense fiction, may be left for elucidation to those philosophers who reserve to themselves alone the right to free discussion and pronouncement upon the resurrection and the immortality of the soul. And even on their account we should attach no importance whatever to the miraculous and occult powers ascribed to the internal ossicle of the right great toe, however much one may be concerned about it. At our public dissections and even as an amateur, we have often obtained a better supply of these bones than those truculent male strumpets of the Venetian horde, who to obtain the bone

34. E.I.J. Rosenthal, “Sebastian Muenster’s Knowledge and Use of Jewish Exegesis,” in *Essays in Honor of the Very Rev. Dr. J. H. Hertz*, eds. I. Epstein, E. Levine, and C. Roth (London: Edward Goldston, 1942), pp. 351–69, especially p. 355.

35. See Commentary of Menahem Recanati to Exodus 25:30. We thank Jay Zachter for referring us to this source.

36. Aaron ben Moses Modena, *Ma’avar Yabok* (Bnei Brak, Israel: Yashpe, 1966), pp. 201–02.

37. For a comprehensive biography see C. D. O’Malley, *Andreas Vesalius of Brussels, 1514–1564* (Berkeley and Los Angeles: University of California Press, 1965).

38. Andreas Vesalius, *De Humani Corporis Fabrica* (Basel: Joannis Oporini, 1543), p. 126.

for purposes of comparison, as also the heart of an unpolluted male infant [pueruli virginis masculus], lately killed a child, cut the heart from its living body, and was punished, as they richly deserved, for the foulest of crimes. Moreover, this ossicle, called Albadaran by the Arabs and the truly occult and obscure philosophers alluded to, is less known to actual students of anatomy than to certain superstitious men who are capable of likening the fourth carpal bone [quartum brachialis os] to a chickpea.³⁹

Vesalius mentions the notion of the indestructible bone and the belief that it serves as the nidus for resurrection on the day of the Last Judgment. However, he cites it as a tradition of the magicians and occult philosophers, and later mentions it in the name of Arabic tradition. It is quite possible that by this time the luz bone of Rabbinic teachings had been filtered through Arabic sources.⁴⁰ What is particularly interesting is that Vesalius himself employs Hebrew terminology in this very work, *De Humani Corporis Fabrica*, as well as in the early anatomical work, *Tabulae Anatomicae Sex*.⁴¹ One might, therefore, expect Vesalius to have been familiar with Jewish anatomical tradition, in which case he should have quoted the tradition as one of Jewish origin, referred to the bone as the Luz⁴² instead of Albadaran, and located it in the neck or spine rather than in the big toe of the foot.

What was, in fact, the nature of Vesalius' training, if any, in the Hebrew language? It is speculated that he may have attended the lectures on Hebrew by Joannes van Campen⁴³ at the Pedagogium Trilingue in Louvain.⁴⁴ What is known for sure is that Vesalius was tutored in Hebrew by Lazarus de Frigeis, who assisted him with the Hebrew terminology used for the *Fabrica*.⁴⁵ Vesalius explicitly acknowledges his assistance in the introduction to this work.

I have decided to give in the index principally a simple list of the names of the

39. Translation by Garrison, (n. 21), p. 151.

40. Ibid. Garrison also quotes an introduction to the Koran published in 1821 which mentions the incorruptible bone, the seed for the future edifice, as being part of Islamic teachings. They call the bone al ajb, which is synonymous with the coccyx.

41. For a detailed study of the Hebrew terminology used by Vesalius, see the articles by Mordecai Etzioni, "The Hebrew-Aramaic element in Vesalius' *Tabulae Anatomicae Sex*," *Bull. Hist. Med.*, 1945, 18, 413-24; idem, "The Hebrew Aramaic element in Vesalius," *Bull. Hist. Med.*, 1946, 20, 36-57.

42. Although Vesalius himself does not mention the term "luz," some historians refer to the above quoted passage as the passage of the bone of luz. See L. Clendening, *Source Book of Medical History* (New York: Dover Publications, 1942), p. 150.

43. See Roth, (n. 9) *Encyclopedia Judaica*, vol. 5, p. 76.

44. O'Malley, (n. 37) *Andreas Vesalius*, p. 33.

45. Ibid., pp. 119-20. De Frigeis apparently appears as one of the observers of Vesalius' dissection on the famous frontispiece of the *Fabrica*. See ibid., p. 142.

bones, first presenting those I use in the text; then the Greek; then, any others in Latin taken from authoritative writers, and all that in such way that it may have value. After these will follow the Hebrew, but also some Arabic, almost all taken from the Hebrew translation of Avicenna through the efforts of Lazarus de Frigeis, a distinguished Jewish physician and close friend with whom I have been accustomed to translate Avicenna.⁴⁶

Returning to the notion of the indestructible bone, Vesalius categorically rejects it because “these bones . . . may be burned or broken like other bones.” He leaves the discussion of resurrection to the domain of the philosophers. Vesalius’ attention to dissection and experimentation enabled him to rectify a number of errors perpetuated by the teachings of Galen (2nd cent. C.E.)⁴⁷

Girolamo Maggi (d. 1572)⁴⁸

Biographical information on Maggi is scant,⁴⁹ but it is known that he was an Italian engineer who wrote a number of books on theology, including *De Mundi Exustione et Die Iudicii* (concerning the Burning of the World and the Day of Judgment). This book was published in Basel by the same printer who, some twenty-three years earlier, printed *Sefer ha-Veekuakh* by Sebastian Muenster.⁵⁰ The passage relevant to our discussion is found in Book Five, Chapter One, on the topic of resurrection.

Some occult philosophies, or rather followers of Philomoria [lit., “Love of Foolishness”], indeed admit resurrection, but they say that a man must be restored from a certain bone of the foot, as if from a seed. Andreas Vesalius, chapter 1, summary of his books concerning the structure of the human body, speaks thus on this topic . . . The heretical Talmudists and other Hebrew authors blab out not dissimilar things. For they think that on the last day a man must be restored and regenerate from a certain uncorruptible bone (this, they have written, is indeed, next to the base of the calvaria, or in the base itself or the so-called nut [*nuca*]; others say that it is the first of the twelve vertebrae from which the thorax has its beginning, which when we bend our head and neck,

46. Vesalius, (n. 38) *Fabrica*, p. 166. Translation by O’Malley, (n. 37) *Andreas Vesalius*, p. 120.

47. F. H. Garrison, *An Introduction to the History of Medicine*, 4th ed. (Philadelphia: W. B. Saunders, 1929), p. 219.

48. Maggi is also known synonymously as Hieronymus Magius.

49. See Benjamin Vincent, ed., *Dictionary of Biography Past and Present* (London: Moxon, 1877), p. 371; Marlo Emilio Cosenza, *Biographical and Bibliographical Dictionary of the Italian Humanists and the World of Classical Scholarship in Italy, 1300–1800* (Boston: G. K. Hall, 1962), pp. 2070–71; De M. Le D’Hoefer, ed., *Nouvelle Biographie Generale* (Paris: Firmin Didot Frères, 1863), pp. 698–99.

50. Girolamo Maggi, *De Mundi Exustione et Iudicii* (Basel: Henric Petre, 1562). We thank Dr. Louis Feldman for translating both the title and the subsequent passage from the original Latin.

sticks out and swells out a very great deal) which they themselves call Luz. But it will be worthy of effort to refer to what is written in chapter 28 of the book which is called *Bereshith Rabbah*, in explanation of these words of Genesis, chapter 6 which we cite: I shall destroy from the face of the earth the man whom I have created, etc. Rabbi Joanan [Johanan] in the name of Rabbi Shimon the son of Jozadach [Jehozadak], mentioned also that the bone of the back and that vertebra whose name is Luz has been destroyed, from which the Lord G-d, at the future time of resurrection, will cause a man to shoot up. Hadrian asked Rabbi Jesue [Joshua], son of Anina [Hananiah], from which thing the Lord G-d in the future time is going to produce a man. He replied: from a certain bone of the human back, which is called Luz. When Hadrian asked him, whence he knew this, Jesue asked him to order the aforementioned bone to be brought and that he would reveal the matter through an experiment. That bone which is below the jawbone was not able to be rubbed away and rubbed out; when placed in fire it was not burned; when cast into water it was not dissolved; and finally, when it was placed on a forge and struck with a hammer it was so far from being able to be worn out and diminished in any part that the anvil was split and dashed to pieces and the hammer was broken before anything was lacking to the bone. The author of that book says these things: that they are true no one is going to persuade me, for although bones according to the witness of Plato, are especially long lasting, nevertheless we see every day that they are crushed and rubbed out by stones and hammer by a slight effort into the shape of dust, that they are dissolved by the force of water and old age into dirt, and turned into ashes by flames, unless teeth (as Pliny in Book 7, chapter 16, testifies and antiquity noticed and observed) survive, which at last a longer-lasting fire, like all remaining things, subdues and abolishes. But let the Hebrews depart with their lies; let us return to our subject.⁵¹

Maggi cites Vesalius but then mentions the independent Rabbinic tradition of the indestructible bone. Maggi is the first of our sources to explicitly use the term luz.⁵² In addition, he quotes the exact Rabbinic source for this tradition. As little is known of his education, we can only speculate as to how he obtained such detailed knowledge of Rabbinic sources.⁵³ Apparently, Maggi, at some point, worked in the printing shops of Venice.⁵⁴ Venice was a major center of Jewish culture and Hebrew print-

51. *Ibid.*, pp. 170-71

52. In Maggi's work which was printed in Latin, the word luz is printed in Hebrew characters, as are the words *Bereshith Rabbah*. In the entire book, there are perhaps less than ten words printed in Hebrew characters. As mentioned above, Maggi's *De Mundi* was printed by Henric Petrie, who also printed Hebrew language works at his press. Hebrew letters were therefore likely available for discriminate usage in the printing of *De Mundi*.

53. Maggi quotes Rabbinic sources multiple times throughout his work and, in his index of sources, which appears after the table of contents, a number of Rabbinic sources can be found.

54. Cosenza, (n. 49) *Dictionary*, p. 2071.

ing in the Renaissance. Ironically, Christians owned and operated many of the Hebrew printing shops where Jewish scholars were employed as editors.⁵⁵ It is possible that Maggi came into contact with some of these scholars, or perhaps simply befriended Italian Jews, who comprised a significant portion of the Italian population at that time. We need not even postulate that Maggi had contact with the Jews, for this was a thriving period for Christian Hebraists, many of whom also worked at Italian printing shops.⁵⁶

Regarding the location of the Luz bone, Maggi cites two differing opinions, both in the name of the Hebrew or Talmudic tradition. Some say it is located at the base of the skull or the so-called nut (*nuca*) while others identify it as the first of the twelve thoracic vertebrae. The term *nucha* or *nuchal* is used by anatomists to refer to the nape of the neck. The word *nucha* means nut, as does the word *luz* (hazelnut). In addition, it is true, as Maggi and Muenster state, that some Rabbinic sources locate the *luz* in the area of the nape of the neck. It is, therefore, possible that the anatomical term “*nucha*” may ultimately derive from the Rabbinic bone of *luz*.

Similar to Vesalius, Maggi rejects the notion of an indestructible bone because it does not stand the test of experimentation. In addition, he has less than kind words to say about the Jewish tradition. He concludes, “but let the Hebrews depart with their lies.”

Caspar Bauhinus (1560–1624)

Bauhinus was a native of Basel, where he ultimately became professor of anatomy and botany in 1589. His work on anatomy, *Theatrum Anatomicum*, was a popular text in its day because it was systematic and provided adequate coverage of the ancient authorities.⁵⁷ According to Fielding Garrison, the first reference to the name *luz* in any work on anatomy is to be found in the 1621 edition of the aforementioned work by Bauhinus.⁵⁸

However, in his book, *History of Medicine*, Garrison erroneously states

55. See, e.g., David Amram, *The Makers of Hebrew Books in Italy* (London: Holland Press, 1963)

56. Roth, (n 9) *Encyclopedia Judaica*, vol. 8, pp. 9–71.

57. Leslie W. Dunlap, ed., *Heirs of Hippocrates: The Development of Medicine in a Catalogue of Historic Books in the Health Sciences Library, the University of Iowa* (Iowa City: Friends of the University of Iowa Libraries, 1980), pp. 123–24.

58. Garrison, (n. 21), p. 149. Garrison points out that the passage about *luz* does not appear in the earlier editions of Bauhinus' *Theatrum Anatomicum*. We were able to consult the 1605 edition, where in fact, this passage does not appear. We were unable, however, to obtain a copy of the 1592 edition, which coincidentally was printed in Basel by none other than Henric Petri, the printer of Meunster's *Sefer ha-Veekuakel* and Maggi's *De Mundi*.

that Bauhinus' work is the first in which the term *luz* appears outside Rabbinic literature.⁵⁹ The publication of Maggi's *De Mundi*, discussed earlier in this article, predates the *Theatricum Anatomicum* by fifty-nine years. Bauhinus writes as follows:

Hebrew writers affirm that there is a bone in the human body just below the eighteenth vertebra which cannot be destroyed by fire, water, or any other element, nor be broken or bruised by any force; this bone G-d shall, in His exceeding wisdom, water with the celestial dew, whence the other members shall be joined to it, coalescing to form the body, which breathed upon by the Divine Spirit, shall be raised up alive. Such a bone they call *Lus* (not *Luz*); and its site, they say, is in the spine, from the eighteenth vertebra to the femur. The author of this fable is the Rabbi *Uschaia*, who lived 210 A.D., about which time he wrote the book called *Bereschit Rabbi*, i.e., *Glossa magna in Pentateuchum*, from which many later Rabbis have taken this fiction. This bone, they say, can never be burned or corrupted in all eternity, for its ground substance is of celestial origin and watered with the heavenly dew wherewith G-d shall make the dead to rise, as with yeast in a mass of dough. They insist, moreover, that this bone will outlast all the others because it does not assimilate food as they do and because it is harder than the rest, being the fundamental part of the body, from which it is built up. We read further that the Emperor Hadrian once asked Rabbi Joshua, the son of Chanin, how G-d would resurrect man in the world to come. He made answer: From the bone *Luz* in the spinal column. Whence Hadrian asked him how he came by this knowledge and how he could prove it. Whereupon Rabbi Joshua produced the bone so that he could see it. When placed in water it could not be softened; it was not destroyed by fire, nor could it be ground by any weight; when placed on an anvil and struck with a hammer, the anvil was broken in sunder but the bone remained intact. Munsterus says the Rabbins believe it to be located in the neck. But Vesalius writes that this ossicle is called *Albadaran* by the Arabs, resembling a chickpea in size and shape, and he questions whether, being notably hard, it may not be the ossicle between the two bones of the great toe. Heironymus Magius represents that, according to the Talmudists and other Hebrew commentators, the real bone is near the base of the skull, whether it be in the base itself or in the spine. To others it stands apart as the twelfth of the dorsal vertebrae with which we incline the head and bend the neck. But what Joshua said to Hadrian the Emperor, no one can be persuaded to believe. For if bones as Plato bears witness, are highly durable, nevertheless we see daily that they can be pulverized by hammer or stones or reduced to ashes by fire; as Plato [Plinius]⁶⁰ testifies and

59. Garrison, (n. 47) *History of Medicine*, p. 230.

60. Garrison inadvertently wrote Plato instead of Pliny, which appears in the original text. This is obviously borrowed from Maggi.

the ancients point out, only the teeth can survive, being more enduring than the fire which subdues and effaces all other remains.⁶¹

Thus these circumcised fathers are accustomed, when they are unable to explain the true reason of a more difficult thing, to take refuge in fables which they gulp down on behalf of the articles of their holy faith, lest they seem to have been ignorant of anything. But let the Hebrews depart with their lies; also let the magicians and the followers of occult philosophy depart; let the Cabbalist depart who both jest and impose so impudently in manifest matters.⁶²

Bauhinus quotes all three of the aforementioned sources, two of which are theological and not anatomical. He cites the same reference from *Bereshith Rabbah* as does Maggi, but differs in his information about the Rabbinic tradition regarding the bone's location. Bauhinus says that "Hebrew writers affirm that there is a bone in the human body just below the eighteenth vertebra which can not be destroyed . . ." It is clear that Bauhinus' information about the Rabbinic teachings did not derive exclusively from the works of Maggi and Muenster as neither of these sources identify the luz bone in this location. As with Maggi, we can only speculate about his education in Jewish literature. In his youth Bauhinus trained in Padua. For various reasons the University of Padua was the major center of medical training for European Jews in the Renaissance.⁶³ Could the young Bauhinus have interacted with Jewish students at the university and thereby gained his knowledge of Rabbinic sources? It is possible. Alternatively, his knowledge might well have been obtained in Basel, which, although not a center for medical training, was a center for Hebrew printing in the sixteenth and seventeenth centuries.⁶⁴ As, by law, no Jews were allowed to reside in Basel at this time, special permits had to be secured for Jewish scholars who came to Basel to proofread the Hebrew works printed at the Christian printing presses.⁶⁵ In addition, the tenure of Bauhinus at the University of Basel

61. Up to this point, the translation is by Garrison, (n. 21), p. 149. The passage beginning with "thus" was not translated by Garrison in his article and was translated for us by Dr. Louis Feldman, whom we thank for his efforts.

62. Caspar Bauhinus, *Theatrum Anatomicum*, 3rd ed. (Basel: Henric Petri, 1621). Dunlap, (n. 57) *Heirs*, p. 123.

63. Much has been written on the history of the Jews at the University of Padua. See, e.g., C. Roth, "The medieval university and the Jew," *The Menorah Journal*, 1930, 19, 128-41; J. Shatzky, "On Jewish medical students of Padua," *J. Hist. Med. Allied Sci.*, 1950, 5, 444-47; A. Modena and E. Morpurgo, *Medici E Chirurghi Ebrei Dottorati E Licenziati Nell'Universita Di Padova dal 1617 al 1816* (Bologna, 1967); D. Ruderman, "The Impact of Science on Jewish Culture and Society in Venice (With Special Reference to Jewish Graduates of Padua's Medical School)," in *Gli Ebrei e Venezia* (Venice, 1983).

64. See Roth, (n. 9) *Encyclopedia Judaica*, vol. 4, p. 304. See also Prijs, (n. 29) *Hebraischer Drucke*.

65. Roth, (n. 9) *Encyclopedia Judaica*, vol. 4, p. 304.

coincided with that of Johannes Buxtorf I (1564–1629), a renowned Christian Hebraist who, in 1591, became professor of Hebrew at the university, a position held earlier in the century by Sebastian Muenster.⁶⁶ Buxtorf was well-versed in the full spectrum of Rabbinic literature and could easily have been the provider of information for Bauhinus.

Much like Maggi, Bauhinus concludes his discussion of the luz bone with less than kind words for the Jewish tradition. He even quotes a phrase verbatim from *De Mundi*, “but let the Hebrews depart with their lies.”

Samuel Butler (1612–80)

Another reference to the luz bone outside Rabbinic literature appears in the literary work of Samuel Butler entitled *Hudibras*. In the context of this satirical poem lampooning Puritan rule, Butler has occasion to employ the Rabbinic luz bone for the purpose of metaphor.

The learned Rabbins of the Jews
Write there's a bone which they call Luz
In the rump of man, of such a virtue,
No force of nature can do hurt to;
And therefore at the last great day,
All the other members shall, they say,
Spring out of this, as from a seed
All sorts of vegetals proceed;
From whence the learned sons of art
Os sacrum justly style that part.
Then what can better represent
Than this Rump Bone, the Parliament,
That after several rude ejections,
And as prodigious resurrections,
With new reversion of nine lives,
Starts up and like a cat survives?⁶⁷

Butler clearly identifies the *Os sacrum* as the luz bone. As this bone (luz) is associated with resurrection, the use of the religious term, “the sacred bone,” makes this identification palatable. A contemporary anatomy book has perpetuated this notion of the origin of the term sacrum.

SACRUM = holy or sacred; it looks like the pile of ashes after cremation (the sa-

66. *Ibid.*, vol. 4, p. 1543.

67. Garrison, (n 21) also quotes this passage from Butler, which appears in Part 3 Canto 2 of *Hudibras*. Samuel Butler, *Hudibras* (London, 1663–78). Garrison misquotes the date of this work as being 1615–1630. In fact, Butler was only born in 1612 and the 3rd part of *Hudibras* appeared in 1678. See M. H. Abrams, ed., *The Norton Anthology of English Literature*, 3rd ed. 1 (New York, 1974), p. 1965.

cred bone). It was supposed to resist decomposition longest and to be the seed from which the body was resurrected.⁶⁸

CONCLUSION

The notion of the bone called luz, or the analogous concept of the indestructible bone, is clearly of Rabbinic origin. Although it has been ascribed to other traditions, including those of mystics, philosophers, and Moslems, the earliest recorded source is that of the Midrash (400–600 C.E.), and all subsequent sources either quote the Midrash explicitly or allude to it, whether knowingly or unwittingly.

The theological import of this bone, by virtue of its association with resurrection, has fueled continued discussion about it throughout the ages. Despite its religious significance, however, it is quite evident from the above sources that the location of this elusive bone remains obscure, even to this day. Clarification of this latter issue may have to wait until the very time of the resurrection.