This is the reason, no doubt, why none other than Niels Bohr himself from his matchless experience with physical forces had this advice: If Biology wished to move to a higher level of understanding it would have to employ new concepts and new approaches that did not require mechanistic and reductionist interpretations

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THE DARWIN CONVERSION STORY: AN UPDATE

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Abstract

Since the discussions of Rusch (1975), Rusch and Klotz (1988) and Herbert (1990), new information on the Darwin conversion story has come to light. The earliest version of the story has been located in the Watchman-Examiner and some further biographical information on a possible candidate for Lady Hope is presented.

Introduction

Probably no other individual in modern times has had a greater influence in turning people away from the biblical account of creation, the scriptural view of mankind, and the authority of the Bible than Charles Darwin. His *Origin of Species* (1859) and *Descent of Man* (1871) were seen by many of his contemporaries as giving scientific credibility to the idea that all life developed by purely naturalistic processes. As a result Darwin provided considerable impetus for several atheistic ideologies which have dominated our troubled twentieth century.

In view of this, most people are surprised to hear that Charles Darwin allegedly became a believer in Christ near the end of his life. This story—in which we should rejoice, if true—has circulated in numerous tracts and magazine articles since 1915 (Rusch, 1975; Rusch and Klotz, 1988; and Herbert, 1990). It narrates an interview with Darwin, in the fall of the last year of his life, by a "consecrated English, woman" identified only as "Lady Hope." According to her account, she was allowed to visit with Darwin, and found him reading the New Testament epistle to the Hebrews, which he called "the Royal Book." When she asked him about Creation, he became very distressed and said that people had taken his unformed ideas and made a religion out of them. Darwin then invited her to speak to some of his servants, tenants and neighbors in his garden summerhouse on "Christ Jesus, and His salvation," and promised that he would sing along with them from his open bedroom window.

As Rusch (1975), Rusch and Klotz (1988), Herbert (1990) and others have pointed out, this account does not square well with other information we have about Darwin. His correspondence in the winter and spring following this alleged incident give no indication that Darwin's agnosticism had changed or that his belief in evolution had lessened. When Darwin's daughter, Henrietta Litchfield, heard this story, she denied that Lady Hope had visited Darwin, that Darwin's estate had a summerhouse, or that the "servants or villagers ever sang hymns to him." She claimed the story was invented in America (Rusch and Klotz, 1988, pp. 20-21, quoting from *The Christian*, 23 Feb. 1922).

*Robert C. Newman, Ph.D., Biblical Theological Seminary, 200 North Main Street, Hatfield, PA 19440-2499. Some confusion exists in the various tracts as to whether this story was first reported by Lady Hope in Northfield, England or Northfield, Massachusetts. The date of her report is given as August 15, 1915. Rusch's attempt to find this report in the issues of the *Watchman-Examiner* available to him in the midwest was unsuccessful (Rusch and Klotz, 1988, p. 3).

Some New Findings

Intrigued by this story and spending my summers in the Washington, D.C. area, I decided to try to locate the article in the Library of Congress with its extensive resources. Assuming the *Watchman-Examiner* was some sort of periodical and using the date of August 15, 1915 as a starting point, the search was successful. The *Watchman-Examiner* was a national Baptist newspaper issued weekly from Boston and New York since 1819, with some variation in name over its history. The Library of Congress has nearly a complete run of the paper. The article turned up on the first issue following the above date (Hope, 1915) and is reprinted for your convenience:

This article was preceded by a four-page report on the 1915 Northfield Conference, a summer Bible conference held on the grounds of the Northfield Seminary, a girls' school in Northfield, Massachusetts founded years before by Dwight L. Moody. The conference that year ran from July 30 to August 15, and Lady Hope gave this testimony at one of the morning prayer services, the date not specified. The particular issue of this paper was stamped as received by the Library of Congress on August 19, so the account was in print no more than a few days or weeks after she gave it orally. Thus, so far as we know, the story was first circulated in the United States some 33 years after Darwin's death. Since this is also long after Darwin's wife Emma died in 1896, the suggestion that she started the story is unfounded.

Who was this Lady Hope? The *Watchman-Examiner* gives us no more information than has circulated in the tracts. As reported by Rusch and Klotz (1988) and Herbert (1990), a former editor of *Burke's Peerage*, L. G. Pine, was asked this question also. He could come up with only one "Lady Hope" who would have been grown in 1881 and still alive in 1915, a woman he names Elizabeth Reid Stapleton-Cotton, mentioned in

DARWIN AND CHRISTIANITY

BY LADY HOPE.

It was on one of those glorious autumn afternoons, that we sometimes enjoy in England, when I was asked to go in and sit with the well known professor, Charles Darwin. He was almost bedridden for some months before he died. I used to feel when I saw him that his fine presence would make a grand picture for our Royal Academy; but never did I think so more strongly than on this particular occasion.

He was sitting up in bed, wearing a soft embroidered dressing gown, of rather a rich purple shade.

Propped up by pillows, he was gazing out on a far-stretching scene of woods and cornfields, which glowed in the light of one of those marvelous sunsets which are the beauty of Kent and Surrey. His noble forehead and fine features seemed to be lit up with pleasure as I entered the room.

He waved his hand toward the window as he pointed out the scene beyond, while in the other hand he held an open Bible, which he was always studying.

"What are you reading now?" I asked, as I seated myself by his bedside.

"Hebrews!" he answered-"still Hebrews. 'The Royal Book,' I call it. Isn't it grand?"

Then, placing his finger on certain passages, he commented on them.

I made some allusion to the strong opinions expressed by many persons on the history of the Creation, its grandeur, and then their treatment of the earlier chapters of the Book of Genesis.

He seemed greatly distressed, his fingers twitched nervously, and a look of agony came over his face as he said: "I was a young man with unformed ideas. I threw out queries, suggestions, wondering all the time over everything; and to my astonishment the ideas took like wildfire. People made a religion of them."

Then he paused, and after a few more sentences on "the holiness of God" and "the grandeur of this Book," looking at the Bible which he was holding tenderly all the time, he suddenly said:

"I have a summer house in the garden, which holds about thirty people. It is over there," pointing through the open window. "I want you very much to speak there. I know you read the Bible in the villages. To-morrow afternoon I should like the servants on the place, some tenants and a few of the neighbors to gather there. Will you speak to them?"

"What shall I speak about?" I asked.

"CHRIST JESUS!" he replied in a clear, emphatic voice, adding in a lower tone, "and his salvation. Is not that the best theme? And then I want you to sing some hymns with them. You lead on your small instrument, do you not?"

The wonderful look of brightness and animation on his face as he said this I shall never forget, for he added: "If you take the meeting at three o'clock this window will be open, and you will know that I am joining in with the singing."

How I wished that I could have made a picture of the fine old man and his beautiful surroundings on that memorable day!

[At one of the morning prayer services at Northfield Lady Hope, a consecrated English woman, told the remarkable story printed here. It was afterward repeated from the platform by Dr. A. T. Robertson. At our request Lady Hope wrote the story out for THE WATCHMAN-EXAMINER. It will give to the world a new view of Charles Darwin. We should like the story to have the widest publicity. Our exchanges are welcome to the story provided credit is given to THE WATCHMAN-EXAMINER and marked copies are sent to us.—THE EDITOR.]

Figure 1. Facsimile of original Lady Hope article (Hope, 1915).

Burke's Peerage in the lengthy article on Viscount Combermere. In seeking to verify this reference, I discovered that Pine had mistakenly put her in the Stapleton-Cotton branch of the family, though her ancestors separated off from the line before the "Stapleton" was added. Her proper maiden name should be Elizabeth Reid Cotton.

According to Burke's Peerage and Burke's Landed Gentry, Miss Cotton was born sometime after 1841 and was married twice. Her first marriage (2 December 1877) was to Admiral of the Fleet Sir James Hope, G.C.B., by which marriage she became Lady Hope. He died less than four years later on 9 June 1881. So in the fall of 1881, when our story is sct, Lady Hope would have been less than 40 years old and recently widowed. She later married Thomas Anthony Denny (27 September 1893), son of a successful Irish bacon merchant and founder of T. A. Denny and Co. He, too, was much older than she (born 2 April 1818) and he died 25 December 1909. Apparently there was no issue from either marriage. Pine suggests that she preferred to be known as "Lady Hope" (certainly more prestigious than "Mrs. Denny") right up to her death (8 March 1922), but it is not known where Pine got this information. According to the 1921 edition of *Burke's Peerage*, her address when that edition went to press was Buccleuch Housc, Richmond, Surrey. Lady Hope's father, General Sir Arthur Thomas Cotton, K.C.S.I., has a brief obituary in *Who Was Who*, dying 25 July 1899.

Perhaps one of our British readers could follow up on this biographical information with the more extensive resources available in the United Kingdom. It would be of considerable interest to see if this Lady Hope was the sort of Christian worker pictured in the Darwin conversion story, with what Christian groups she might have been associated, what her reputation for veracity was, and whether she visited America in 1915. Of course, Elizabeth Reid Cotton might not be the Lady Hope for whom we are searching.

Alternative Explanations

What can we say of the authenticity of the story itself? Besides the two suggestions that (1) Lady Hope made up the whole account, or that (2) Darwin really became a Christian but his relatives sought to hide this, two other possibilities should be considered. (3) Perhaps Darwin did meet with Lady Hope but she later elaborated what were his much more non-committal statements. (4) Or perhaps Darwin did say all the things reported in the story, but he did so as a cover to avoid being evangelized by Lady Hope—a technique frequently encountered in personal work with unbelievers of the sort of strongly non-confrontational temperament Darwin is known to have had. The Darwin correspondence mentioned above makes alternative (2) unlikely, but there is still more work to be done before we can give a final verdict on this story.

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VARVES — THE FIRST "ABSOLUTE" CHRONOLOGY PART I—Historical Development and the Question of Annual Deposition

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Abstract

Varves have been used to set up the first "absolute" chronology, which significantly exceeds the Scriptural time scale from Genesis. Observations of modern glaciers and recent climate simulations show that the ice sheets during the Ice Age melted rapidly, much faster than indicated by varves. A further investigation of varves demonstrates that other mechanisms deposit varve-like couplets in a short time. Therefore, "varves" are not necessarily annual. A method to distinguish between annual depositional sequences and other mechanisms is difficult to apply.

Introduction

A varve is generally defined as a sedimentary lamina or sequence of laminae deposited in a body of still water within one year's time (Bates and Jackson, 1984, p. 551). More specifically, a varve is considered two sublayers, each seasonally deposited in a glacially-fed lake. The lower "summer" sublayer usually consists of light-colored silt or sand, and the upper "winter" sublayer consists of dark-colored fine silt or clay, which often contains organic residues.

Varves form in deep lakes or in brackish estuaries in which the salt content is less than in ocean water. The water must be deep enough to protect the sediment from erosion caused by wind-generated waves and currents and from biogenic mixing of the sediments at shallow depths. Varves normally do not form in ocean water. The reason for this is the reactions of salt ions with the silt and clay particles, causing them to coagulate and sink to the bottom, forming a featureless or massive deposit. Figure 1 shows a picture of a typical varved sequence from an ancient proglacial lake in Ontario, Canada. A pro-glacial lake is a lake that forms at the edge of a glacier or ice sheet.

Varves are a type of rhythmite. A rhythmite is a repeating unit of sedimentation that does not imply limits of thickness, complexity of bedding, time, or depositional environment (Bates and Jackson, 1984, p. 432). Rhythmites display alternations of two or more *Michael J. Oard, M.S., 3600 7th Avenue South, Great Falls, MT 59405.

rock units, such as siltstone alternating with sandstone. A laminite is similar to a rhythmite, except the lithologies are random. An annual period is the feature distinguishing a varve from a rhythmite.

Establishment geologists have employed "varves" to date the deglaciation of the last ice age of the Pleistocene Period. As the ice sheets receded, proglacial lakes or brackish estuaries temporarily formed in many areas, and in these water bodies rhythmites often developed. Supposed varves have also been used to determine the amount of time since the ice sheet melted. Varves have been especially employed in Sweden to develop the Swedish Time Scale, the first "absolute" and "exact" chronology according to Antevs (1922, p. ix). Important varve chronologies have also been generated in Finland, the north central and northeast United States, and southeast Canada.

The varve chronology is considered to be so accurate that it compares favorably with the carbon-14 dating method (Olsson, 1970). A revised Swedish Time Scale suggests that C-14 ages may be less than real time between 10,000 and 12,000 years ago (Stromberg, 1985, p. 104). Varve chronology is used to date geological and archeological events and to calibrate other dating methods. Cato (1987, p. 52) informs us of the importance of a revised varve chronology:

The consequences of the present connection of varve series to the present are far-reaching not only for the Swedish Geochronological Time Scale but also for all the geological and archeological