ROSWELL FIELD'S DINOSAUR FOOTPRINTS, 1854-1880

Robert L. Herbert, with Sarah Doyle, Joel Fowler,
Lynda Hodson Mayo, and Pamela Shoemaker
Mount Holyoke College, 2013

Roswell Field (1804-1882), a farmer of Gill, Massachusetts, supplied sandstone dinosaur tracks and fossil fish from the Connecticut River Valley to scientists, collectors, and institutions, from 1854 to 1880. Like his predecessor Dexter Marsh (1808-1853), he received only perfunctory thanks from his clients, and has been lost to history. He was nonetheless the first to uncover new species of animals who made Early Jurassic tracks. This biography is based upon his unpublished correspondence with scientists (Ebenezer Emmons, Charles U. Shepard, John Collins Warren, and others), transcribed in the Appendix. These letters give details of uncovering and selling the sandstone slabs in the years when dinosaurs and Jurassic fish were being rapidly identified. Field's activity is additionally documented from tax and property records.

1. Gill in 1871. Map from
www.old-maps.com

Preface

Roswell Field (1804-1882) of Gill, Massachusetts, is one of those people who were conspicuous in life but soon lost to history after their deaths. There is good reason to pull him up from the historical abyss because from 1854 to the middle 1870s he was the principal supplier of Connecticut River Valley sandstone impressions and fossil fish to scientists, collectors, institutions and museums of natural history. The stone slabs which Field quarried mostly on his own land in Gill bore imprints from early Jurassic dinosaurs, fish, insects and worms, as well as having fossilized fish, mostly from Sunderland and Turners Falls. These are now found in museums at Yale, Harvard, Amherst, Dartmouth, and Columbia, and in science museums in Boston, New York, and Philadelphia. One sometimes can find Field's name in the archives of these institutions, but nothing more than his name. Scientists from New York City, Albany, Boston, New Haven and Amherst visited his farm in Gill and acquired sandstone tracks from his quarries, among them Thomas T. Bouvé, James Dwight Dana, Ebenezer Emmons, Edward Hitchcock, O. C. Marsh, William C. Redfield, Charles Upham Shepard, and J. C. Warren. In 1876 Yale's O. C. Marsh took Thomas H. Huxley, the famous British comparative anatomist, to visit Field in Gill.

Information about Field's life and work is hard to come by. There are only fragmentary references to the several public talks that we know he gave, although we have the pleasure of looking into the one article that he published; it will be the subject of a sub-section below, "No more birds." He had one brother and several half-siblings, but nothing in the way of diaries or letters from any of them has been found. Childless, he enjoyed friendships and an extended family in Gill and Northfield, but few communications from relatives and friends are known. Letters from two men in Hartford tell us that he dealt in lumber and bought trees and bushes for his farm, but these were written in 1850, leaving us without evidence of what must have been similar business in other years. His will proves that he was quite prosperous in later life. That he was a proud man is certain because in his will he set aside a substantial sum for what remains today the most imposing tombstone in the Northfield Farms Cemetery (fig. 9), a showy piece that lords it over the otherwise plain stones of its neighbors.

All of this evidence gathered together would not be enough to sustain a biographer but fortunately a researcher, like a traveler facing a featureless desert, can feel unduly cheerful when stumbling upon an oasis. This welcome site is the helpful Gill Historical Commission that guards letters that Field received from nine scientists who bought sandstone impressions from him, and a smaller number of letters that he wrote to two of them. (Appendices C, D and E). A surprising amount can be harvested from them. Reading directly and between the lines, we can find enough to reestablish Field's principal, indeed his only claim to historical memory: his quarrying of early Jurassic fossils in the upper Connecticut River Valley. Through sales and gifts, his contacts with the scientific community tell us a good deal about his interests and his capacities. Other rewarding sites are the tax records and registers of deeds for Gill that detail the extent of his land, his buildings, his livestock, and his business transactions.

Piecing together the disparate facts of Field's life and work has been a collaborative effort or, better put, a collaboration. Any sense of effort was smoothed away by warm-hearted exchanges. I have taken on the writing but the research for this study has been shared with Sarah L. Doyle, independent scholar, Joel N. Fowler, Northfield historian, Lynda Hodson Mayo, Gill Town Clerk,

and Pamela Shoemaker, of the Gill Historical Commission. Special thanks are due to David Allen, Ed Gregory, and Alfred Venne, who generously offered key photographs, and to Elizabeth Bazler who provided photocopies of several J. C. Warren letters. For various essential assistance, I also thank Nicholas Baker, David Bosse, Daniel Brinkman, Sierra Dixon, Jack Eckert, John Maisey, Shirley Majewski, Peter S. Miller, and Violetta Wolf.

R. L. H., South Hadley, 2013

Abbreviations used throughout this study:

= illegible word
? = probable but uncertain word
AJS= *American Journal of Science*.
Field papers, GHC = Roswell Field papers, Gill Historical Commission
Registry = Franklin County Registry of Deeds

For all short titles, see Bibliography.

List of illustrations

2. Gill in 1858. Map from www.old-maps.com.

Field's life in Gill

Gill, where Field settled in 1842, is a rural town of nearly fifteen square miles, incorporated in 1793 when it separated from Greenfield (figs. 1 and 2). On its east the serpentine Connecticut River, flowing south, separates it from Northfield; the river then bends abruptly west to form the town's southern limit. Across the river at that point is the town of Montague with Turners Falls as its bustling village center. In Field's day it communicated with Gill by a ferry, and then in 1878 by a new suspension bridge. Gill is a hilly town as though some of Vermont had come rumbling down the river valley. Stacys Mountain and Mount Pisgah rise from the river to the south, while Mason, Grassy, Barnard and Stump hills dominate the north. The hills were mostly forested, and lumbering was a leading enterprise; its wood was rafted downstream as far as Hartford. In 1875 the U.S. census valued its agricultural and domestic produce at $148,348 with manufactures amounting only to $18,500. More prosperous and urbanized Montague across the river reversed those proportions: $175,186 for agriculture, $1,478,446 for manufacturing. Gill's population then was 673, Montague's, 3380. In 1875 the Turners Falls Lumber Co., on the Gill side of the river, was the town's largest employer; otherwise there were only a few shops in Gill. Field's house and land were in the southern portion of the town called Riverside, about three miles from Gill Center. On the 1858 and 1871 maps, his name is printed at the approximate location of his farm, north of Lily Pond. Riverside had its own post office and school. "Factory village" was a cluster of houses in Greenfield due north of the Falls, but was often informally extended to the western edge of Riverside just before the Connecticut veered southward over the famous falls. Letters to Field were sometimes addressed to Factory Village, but he lived in the more open and rural part of Riverside southeast (upstream) of the Falls.

3. Roswell Field, 1890s. Northfield Farms Library. Ed Gregory image

The present essay is a kind of archaeology that lays out scattered fragments of a life that lack narrative and biographical cohesion. The only known portrait of Field is in the Field Library, Northfield

Farms (fig. 3).[1] Roswell Field was born in Warwick MA on April 11, 1804, the son of Elizabeth Jennings (1781-1857).[2] In 1806 in Northfield, she married Hollis Field (1778-1812), who may or may not have been the boy's father. In various documents Roswell named 1808 as his birth year, presumably to hide being born out of wedlock, but his correct birth year was inscribed on his tombstone. His brother Dwight (1810-1871) was six years younger. Following Hollis's early death in 1812, Elizabeth married Obed Morgan (1792-1888) of Northfield. Of their four children it was Obed Jr. (1819-1909) to whom Roswell was particularly close; he was one of the executors of his will. Childless himself—Roswell never married— he became allied by marriages of his half-siblings to the Morgans, the Marbles, and the Purples who, with the Jennings and Fields, lived mostly in Gill and Northfield. Roswell's brother Dwight is the only member of his immediate family of whom we know something, but that is precious little. He was listed as a carpenter in Erving in the census of 1850. He had married Mary Allen (1811-1901) in 1832, and they had three children. Dwight was recorded as a "mechanic," the all-purpose word that then signified laborers and artisans.

Roswell spent his youth mostly in Northfield to which he remained attached all his life, but his early history is a void until May 16, 1842, when, aged thirty-eight, he purchased a 217 acre farm in Gill.[3] This elongated property stretched along the right or northern bank of the Connecticut River upstream from Turners Falls. (In 2013 Field's farmhouse, lying below Mount Pisgah, is still standing, although in a very dilapidated condition.) Just what Field did before 1842, or how he was able to buy this property, is a mystery. He was referred to as a "gentleman" and farmer throughout his life but, as we shall see, he sold timber, bought and sold property, lent money at interest, and most importantly, quarried and sold sandstone fossils and fossil fish to collectors, scientists and institutions.

Some of Roswell's family and friends wondered why he wasn't married, including his cousin Almira Dyke who wrote him in 1850 from New Jersey.[4] Roswell had enclosed a letter to her with one to her Aunt Susan Dyke Marsh. She feared that her aunt had read Roswell's letter to her, which was indeed intimate: "when you said you had concluded to get married. I supposed that as a matter of course that you were going to offer yourself to me." If that were the case, she would refuse. She warned Roswell to be careful lest he excite hopes in the hearts of tender females. "But I really do think it is the best thing you can do is to get married." Five years later, Roswell received more advice about marriage in two letters from Luther L. Alexander, an acquaintance who had moved from

---

[1] The anonymous portrait was donated to the Field Library in 1911 by Roswell's cousin Horace F. Field and Mrs. Martha Alexander: *Greenfield Gazette and Courier*, July 1, 1911 (reference volunteered by Shirley Majewski of the Deerfield History Museum). Sometime after Field's death the portrait (sight dimensions $21^{1/4}$ x $17^{3/4}$ in.) was painted by hand in watercolor, graphite and white chalk over a photograph taken in mid-life. An unclear inscription on the lower right ends with a possible reading of "95," perhaps meaning 1895. It's probably about then that the impressive frame was added to the portrait. Although unsigned, the portrait can confidently assigned to Field by circumstantial evidence.

[2] Joel Fowler is chiefly responsible for the Field genealogy, Appendix A.

[3] Registry, book 117, p. 308.

[4] Letter of Aug. 20, 1850, in Roswell Field papers, Gill Historical Commission (hereafter "Field papers, GHC"). It was written from "Centre Village, Camden Co.," and ended by asking for news, and "Give my love to the Marble family and aunt Susan."

Erving to Iowa, about sixty miles from Council Bluffs.[5] He missed Massachusetts and had subscribed to the *Greenfield Gazette and Courier*; he asked Roswell to send him interesting news. He was beginning to establish a homestead of forty acres, and wrote fascinatingly about problems with Indians, wild animals, and finding water. Farming there was a good thing, although Roswell, he thought, would not want land in Iowa. He would nonetheless have the means "should your Birds tracks prove satisfactory." It's evident that Roswell's growing venture in selling fossil sandstone tracks was well known by 1855. It encouraged Alexander to exercise his wit. In one letter he said "I hope you may make *a pile* out of your Birds Tracks." In the other he wrote that he was lonely and looking for a wife. He wondered "How do you prosper about the other half; do you get on the track yet? [. . .] The girls do love a man that has a basket full of Rocks (I like to have said *stones*.)."

Although he remained a bachelor, Field must have taken some satisfaction in having others living in a house attached to his or next to it. In the town's tax records from 1861 onward, two "houses" are treated together as his household (figs. 4 and 5). The 1850 US census for Gill lists him as a farmer with real estate valued at $3000. In his household lived the farmer James Day with wife and seven children. Day's own real estate was valued at $2000; of what it consisted is unknown. In the 1860 federal census, however, Field is recorded as being on his own as farmer, with a domestic named Sarah H. Ripley, aged twenty-two (subsequently the wife of Charles S. Munn of Gill). A year later, Field and "Edwin Smith" are listed together in the town's tax records in one entry, but this is a puzzle because the farm's buildings, land, and livestock are the same as when Field is listed by himself in other years.[6] In a separate tax notation in 1861, Field alone is recorded as having "Money at interest $300," and "3 shares Greenfield B[ank] $300."

---

[5] Letters of Jan. 6 and June 14, 1855, in the Field papers, GHC. Alexander (1819-1879) became a judge in Grove township, Iowa, and then had a grocery store until his death in 1879. See Anon., *Compendium and History of Cass County, Iowa* (Chicago 1906), pp. 72-73.

[6] Information about Edwin Smith has not yet been found. Apparently he lived with Field but did not own taxable property.

4. Foster and Field homes, 1890s. Gill Historical Commision.

5. Detail of fig. 4.

Among the rare surviving indications of Field's other activities—we'll broach his fossil business later—are two letters to him in the Field papers in Gill written from Hartford in 1850. One is from John McClay (April 3) who tells Field that he is sending him "some trees & vine - GooseBerry-bushes." He also orders from Field some logs to be taken to a sawmill to be cut into planks and boards which would then be sent downriver. He asks Field to tell "M. Martin" that if he has not sold his timber, he would buy it "at his last offer, viz six dolls. & seventy-five cents per [#] after it is well rafted & delivered at the head of the canal by Severances. The river is now falling fast & on Monday I shall go to Hadley & run my raft down. Should I get help enough at Hadley to run the whole at once I could be at your place some time about the last of next week."[7] He would then pay Field and Martin or Liverbas [?] if he buys their timber.[8] In that same year, the firm of Roberts & Burgess wrote Field three times from Hartford.[9] They propose buying timber from Field and want two or three wood choppers "at a fair wage," and some teams [horse or oxen]. That is, they would pay Field for the costs of readying the wood. Their "lot of timber" was brought down by McClay, and Burgess's sent Field a certificate of deposit on the Franklin County Bank for $300. From these letters we learn that Field was known to at least two men in Hartford,[10] but we lack information about how far flung was his lumbering. He presumably sold wood from his own property, but apparently also acted as a middleman for other landowners, in effect as a timber merchant. Rail service reached Greenfield from Springfield in 1846, but for a number of years wood was still rafted down the Connecticut. Floated downstream over the dams, the timber had no need of the canals.

Field's farm was prominently located in Riverside, and he became well known in Gill, Northfield, Turners Falls, and Greenfield. Following the death of Dexter Marsh in 1853, he was the principal source of fossil sandstone tracks until the mid-1870s.[11] Townspeople were fully aware that his clients numbered famous collectors and scientists, many of whom visited Field. Only a few documents survive that attest to his high standing in Gill and nearby towns. He was appointed Justice of the Peace in Gill in March, 1855.[12] No legal training was required for such an appointment, generally awarded to men with some attainment and in good standing. In 1870, he was named one of several councillors of the Pocumtuck Valley Memorial Association in Deerfield, newly chartered by the state legislature.[13] He must have volunteered for this post, but would have been chosen only if he had become well reputed in the region. It's recorded that he attended public meetings and ceremonies in Gill, Northfield, Erving and North Leverett.

---

[7] The 1858 map (fig. 2) places "L. Martin" just west of Gill Center, but he is not listed on the 1871 map.

[8] Letter of April 3, 1850, in the Field papers, GHC.

[9] Letters of Feb. 9, Feb. 15, and April 27, 1850, in the Field papers, GHC

[10] Sierra Dixon, Research and Collections Associate at the Connecticut Historical Society, informed me that McClay, born in Massachusetts, was listed as a sawyer in Hartford in 1850 but became a lumber dealer in 1855.

[11] For Dexter Marsh and the early exploitation of fossil tracks, see Robert L. Herbert, with the collaboration of Sarah L. Doyle, *The Dinosaur Tracks of Dexter Marsh: Greenfield's Lost Museum*, Mount Holyoke College online publication, 2012: http://hdl.handle.net/10166/3203. Hereafter *Dexter Marsh 2013*. See this publication for a basic bibliography of the early history of dinosaur tracks.

[12] *Springfield Republican*, March 20, 1855.

[13] *Springfield Republican*, May 28, 1870.

Thanks to the Franklin County Registry of Deeds, we know that Field regularly bought and sold property in Northfield and Gill. It's not possible to construct a biographical narrative from these transactions, but from the raw data a few useful observations can be made. He was closely involved with the Gilbert family of Northfield. Made guardian of the minor Cephas Gilbert after the death of his father Lyman in 1847, on April 22, 1848, Field sold on the boy's behalf two properties to Benjamin B. Murdock for $62.50: seventy-one acres of the Perry farm in Northfield, and seventeen acres in Warwick.[14] He apparently bought on his own account fifteen acres from the younger Lyman Gilbert for $500 on December 7, 1855.[15] (In 1882, Lyman was one of three executors of Field's will.) Then on September 21, 1858, as administrator of the estate of Emily L. Gilbert, Field accepted $200 from Cephas for land she inherited from Lyman Gilbert.[16] In one other instance Field acted in similar capacity as executor of the will of Joel French of Gill. On April 18, 1859, he sold fourteen acres of French's land in Gill to Philip Shiebel for $282, four acres to George Collett for $20, and twenty-one and one-half acres to William French for $200.[17]

When buying and selling land on his own, Field was active in Northfield, where he had many relatives, as well as in Gill. On November 6, 1849, he paid Ann Atkinson $500 for thirty-three acres in Northfield but on the same day sold her some land (acreage not given) in Gill bordering his own on the west, for $1220.[18] From 1853 onward he acquired several properties in Northfield. On March 22, 1853, he bought sixty-seven acres, the former Rawson farm, from Elmer Waite, Stephen Hill and their wives, for $700,[19] and on the following April 8, he sold sixty-four acres to Nelson A. Purple of Northfield for $200. We rarely know what profit he might have made in his transactions in land, but one purchase led to a huge gain. On July 5, 1861, he bought a triangular piece of land in Northfield for $25 from Frederick G. Morgan, and on June 1, 1874, he sold it to H. W. Montague for $700.[20] Twice he bought sizable tracts in Northfield that were still with him when he died (at least no sales are recorded), forty-four acres from A. B. Ross on March 30, 1868, for $2000, and thirty-five acres from Simeon Dudley on April 22, 1874, for $700.[21]

In Gill, Field sold a piece of his farm to Ann Atkinson in 1849, as we saw, and eleven acres to Edward Rice on October 20, 1852.[22] Intimate with the Purple families of Northfield and Gill (his half-brother Obed Morgan Jr. married Clarissa Purple), in 1853 Field used a mortgage on his own farm to borrow $1000 for one year from Jonathan S. Purple and Ezra O. Purple of Gill, the only

---

[14] Registry book 149, p. 5.

[15] Registry book 196, p. 271.

[16] Registry book 203, p. 30.

[17] Registry book 217, p. 259.

[18] Registry book 138, p. 334, and book 175, p. 19.

[19] Registry book 177, pp. 191 and 246.

[20] Registry book 231, p. 119, and book 314, p. 370.

[21] Registry book 260, p. 108, and book 309, p. 158.

[22] Registry book 176, p. 41.

known such occasion.[23] He added 33 rods to his farm in 1855 for $30, and two acres in 1857 for $400.[24] He acquired four more acres just west of his farm for $50 in 1859[25] and three parcels of land from Mary E. Carter for $980 in 1868. Two years later he sold the "Carter Place," apparently one of those parcels, for $400.[26] Frequently adjusting his property, he parted with eleven acres of his farm for $300 in 1852,[27] and for $500 in1872, he let go thirteen acres along the Connecticut River to three men who were presumably going to cut its timber, but reclaimed the land when they defaulted.[28] Toward the end of his life, as we shall see, he engaged in a flurry of purchases and sales of land in Gill.

Field's fossils

From 1835 until his death in 1853—he was only forty-seven—Dexter Marsh of Greenfield had been the principal supplier of sandstone fossil impressions to scientists, collectors, and learned institutions.[29] He acquired some of his fossil tracks from Field's land beginning no later than 1848, probably earlier. "Gill, July 18, 1848, Received of Dexter Marsh, twenty five dollars for the privilege of diging [sic] in the archasy [?] a specified distance understood between the parties. Roswell Field."[30] In February 1846, Field had visited the "Cabinet" (museum) Marsh established in an addition to his home in Greenfield and learned that other visitors came from near and far (some from Europe), a confirmation of the astounding interest in the fossil traces of ancient animals. It was only a few months after the auction of Marsh's collection in September 1853 that Field began selling stony tracks in his own right. He was no doubt impressed by the high prices some of the fossil specimens reached in Marsh's auction ($375 for one slab), and he took the opportunity to continue the enterprise on his own. Already in January 1854 he announced his readiness to succeed Marsh.

> Mr. Roswell Field of Gill, Mass., has found a new deposit of the specimens of bird tracks made on the clay slate of the Connecticut River valley. These tracks have excited the curiosity of the learned very much. Mr. F. has collected many interesting specimens which he is ready to dispose of.[31]

---

[23] Registry book 178, pp. 290-91, the mortgage dated June 15, 1853.

[24] Registry book 192, p. 390; book 210, p. 350.

[25] Registry book 210, p. 365.

[26] Registry book 269, p. 36, and book 285, p. 107. Deeds dated Jan. 1 and Jan. 3, 1872, and May 25, 1876.

[27] Registry book 176, p. 41.

[28] Registry book 293, p. 388, book 294, pp. 80-81, and book 326, pp. 16-17.

[29] See *Dexter Marsh 2013*. For all short titles, consult the Bibliography.

[30] Dexter Marsh papers, Amherst College Archives and Special Collections, folder 11 (miscellaneous receipts).

[31] *Boston Recorder*, Jan. 26, 1854.

How did sandstone fossils rise to such prominence that they became one source of Field's growing wealth? It was only eighteen years earlier that Jurassic fossil tracks from the Connecticut River Valley were suddenly lifted from their sandstone beds to a distinguished place in paleontology, a new science only one generation old. In April 1836, Edward Hitchcock (1793-1863), Massachusetts state geologist and professor at Amherst College, published the first account of these tracks in Benjamin Silliman's *American Journal of Science*. The following December, William Buckland, the dean of British paleontology, welcomed Hitchcock's revelation and reproduced one of his lithographs.[32] Hitchcock coined the terms Ornithichnology and Ornithichnites (stony bird tracks), and indeed founded this new branch of the discipline. He had been told of the tracks by Dr. James Deane (1801-1858) of Greenfield, who had acquired two specimens from his neighbor Dexter Marsh. In the next few years, Hitchcock visited quarries in the Connecticut River Valley, including Marsh's sites, and purchased a number of specimens from him that entered the nucleus of his college's collection of sandstone impressions; it became the largest in the world (figs. 6 and 7). Hitchcock continued to publish new evidence of the tracks and ways of classifying them, but gave only perfunctory thanks to Deane and none to Marsh until the late 1840s.[33]

Hitchcock sent specimens and casts of the sandstone prints to scientists in London and Paris, but in 1842, Deane shipped to London some specimens that were crisper in detail than Hitchcock's, and he was greeted as a significant interpreter of the fossil impressions. He nonetheless felt unjustly pushed aside by his Amherst colleague who had assumed the credit of being the tracks' first discoverer. Hitchcock, in turn felt aggrieved by Deane's assertions that it was he who first discovered the tracks.[34] Silliman, appealed to by both men, insisted that they publish their competing claims in his journal.[35] In the wake of this, Deane became acknowledged as the first "discoverer," and Hitchcock as the first qualified interpreter.

---

[32] Hitchcock, "Ornithichnology. -- Description of the foot marks of birds (Ornithichnites) on new red sandstone in Massachusetts," *AJS* 29, 2 (April 1836): 307-40; Buckland, *Geology and Mineralogy Considered with reference to Natural Theology*, the "Bridgewater treatise," (London 1836).

[33] For diagrammatic maps locating nearly all known footprint sites in the Connecticut River Valley, see Richard Swann Lull, *Triassic Life of the Connecticut Valley*. State of Connecticut, *State Geological and Natural History Survey*, Bulletin No. 24 (Hartford 1915), pp. 80-94.

[34] For a full account of the Hitchcock-Deane rivalry, see *Hitchcock-Silliman 2012*, the section "Hitchcock's controversy with James Deane, 1842-1845."

[35] Deane, "On the discovery of fossil footmarks," *AJS* 47, 2 (Oct. 1844): 381-90; "Rejoinder to the preceding article of Dr. Deane; by Prof. Edward Hitchcock," Ibid.: 390-99 (signed Sept. 16, 1844); "Answer to the 'Rejoinder' of Prof. Hitchcock; by James Deane, M.D.," Ibid.: 399-401 (signed Sept. 24, 1844)

6. “Appleton Cabinet.” Hitchcock lithograph 1858. Photograph courtesy of Alfred Venne.

7. Beneski Museum, Amherst College. Photograph courtesy of Alfred Venne.

Most of the leading British geologists were fascinated by the footmarks, although they wanted actual bones before they could accept definitively the ascription to birds. In 1839, when Richard Owen published news of the giant extinct Moa of New Zealand, Hitchcock's interpretation was given a boost. Even in 1843, when bipedal dinosaurs were known ("Dinosaur" was coined by Owen the previous year), Owen, Charles Lyell, Gideon Mantell, and Roderick Murchison still agreed with Hitchcock's birds. However, new discoveries of bipedal and quadruped dinosaurs began to weaken the case for birds, and the doubts climaxed in—of all things—an address delivered in 1859 by that provincial farmer-quarrier, Roswell Field! It was published by Silliman the following year. (Appendix B). Field was the first to deny publicly that birds made the stony impressions he had been selling. More about this astonishing claim later. "Bird tracks" nonetheless remained the common term for the rest of the century, used even by Field himself.

Meanwhile, Hitchcock and Deane followed their 1844 dispute with more publications on the tracks. By then they had recognized sandstone traces not just of birds, but also of prehistoric reptiles, lizards, fish, worms, and insects. Because Deane had accepted Hitchcock's nomenclature and made no attempt himself to discuss geological age, the elaboration of the new science of ichnology was left to the Amherst professor. He bought trace impressions from Field in 1856, 1858, and 1863, and mentioned these in his writings, concluding with an article in 1863, the year before his death.[36] In his 1859 address (see below) Field referred knowingly to the Amherst professor's publications to that date. For his part, Deane published valuable observations over several years about newly uncovered stony tracks, although he died before completing his major book which was published posthumously (*Deane 1861*).

Field was especially close to Deane whom he often saw before his death in 1858. Deane was the Gill man's veritable mentor, and his intercessor with potential clients. He knew many of the leading geologists and paleontologists in the U.S. and corresponded with some in Great Britain. In addition to the articles he contributed to the *American Journal of Science* on fossil tracks, he also published articles in the *Boston Medical and Surgical Journal*. A member of the Massachusetts Medical Society, he was acquainted with many medical people and geologists in the Boston area and generously served as intermediary between them and Field. His name appears in most of the letters that Field received from them and from other scientists. It's these unpublished letters, preserved by the Gill Historical Commission, that are the chief source of details about Field's activity.[37] Written from 1855 to 1858, these letters let us see that these men sought Deane's approval of Field's choices of specimens. They often gave greetings to Deane when addressing Field, and several of them saw him when they visited the Gill farmer. In at least one instance (Deane's letter of June 30, 1856) and probably in others, he facilitated Field's quarrying in the Turners Falls area. His multiple roles will become clear as we now look at the letters the scientists sent to Field. By introducing each of the writers in turn, we'll acquire a sense of how his fossils were fitted into the studies and collections of several leading American specialists and public institutions in the third quarter of the century.

---

[36] *Hitchcock AJS 1863*.

[37] Henceforth in this essay, the letters in Appendices C, D, and E will be referred to only by their dates and their authors' names.

Correspondence with scientists

On September 15, 1855, the Philadelphia naturalist Isaac Lea (1792-1886) wrote Field a letter full of revealing information. Field and Lea had already corresponded as we learn from letters J. C. Warren wrote Field the previous July and August.[38] Field had sent the Philadelphia man one or more specimens or casts, seeking identifications. Lea was a businessman and publisher who made important studies of conchology and geology, with special attention to freshwater and terrestial mollusks on which he had been writing since 1827. He was prominent in the Philadelphia Academy of Natural Science and the Americian Association for the Advancement of Science. Addressing Field in care of Deane, he acknowledged receipt of a box of fossil specimens for which he enclosed a check for $100. He thanked both men for their judicious selection. Some specimens were donations to the Academy of Natural Science that he had recently presented in Field's name, but he didn't mention the animals who made the specimens. This letter is the only evidence that Field made this donation, which discloses his wish to be known to distinguished scientific institutions.

Lea was anxious to obtain fossils of mussels but also shells of living animals from the Connecticut "above & below the Falls." This means that he knew something of the river's movement in Gill and Turner's Falls, either from visits there or from communications with Deane and Field. For living mussels he suggested that Field remove the soft tissues by pouring hot water over them. Field had asked him for learned books, but Lea wrote that for the "immediate subject of the fossils of your locality," he knew only Deane's and Hitchcock's memoirs. He will send Field a pamphlet and a copy of his book *Fossil Footmarks of the Red Sandstone of Pottsville* (1852). His postscript "Dromatherius is the Oldest Mammal yet known" suggests that Field had asked him a question about fossil mammals.[39] Indeed, as this letter shows, Field regularly recruited information and publications from the men who sought his sandstone impressions and also his living freshwater species. In this fashion Field was building a personal library.

Fossil fish were the concern of another of Field's clients, Ebenezer Emmons (1799-1863). Emmons was one of those multi-tasking scientists who patronized Field, perhaps the most distinguished of them save for Hitchcock. A physician and chemist, he was also a pioneering geologist. Among the founders of paleozoic stratigraphy, he contributed importantly to the geological surveys of both New York State (it was he who named the Adirondacks and identified the Taconic system) and North Carolina. While teaching at Williams College he published reports on the quadrupeds and herbaceous flowering plants of Massachusetts (1840), then on agriculture, geology and natural history of New York state (1842-1853). In 1852 he was named state geologist of North Carolina, and began writing about that state's geology and natural history. Among his many publications is *American Geology* of 1857, which illustrates and describes tracks of "birds," quadrupeds, and fossil fish. Some of his illustrations show fossil fish from Sunderland and Turners

---

[38] For Warren's letters of July 13 and August 22, 1855, see below and Appendix C.

[39] "Dromatherius" may be a now abandoned reference to eutherian animals (those having a placenta).

Falls.[40] He doesn't say who provided them, but they must have come from Dexter Marsh, and some fish probably from Field.

Four letters from Emmons are among the surviving correspondence in Gill (Appendix C). The first of them (Sept. 4, 1856) refers to fossil fish that he wishes to buy and to an "Indian relict" he had promised Field, perhaps in exchange or partial exchange for fossils.[41] His next letter (Jan. 18, 1857) postpones another visit to Field until he learns whether or not "anything new or any fish etc." were available. He still has "Indian relicts" and mentions recent publications on geology. Later that year ("11, 57" [sic]) he writes in response to a communication from Field that he wants recently found "tracks" at the lowest possible price. "But I want more particularly all your fish remaining." Again "Indian relicts" are promised as well as books on geology. In this letter and the next, he sends regards to Deane whom he apparently had known for some years. In his fourth letter (Sept. 15 [1857]) Emmons says that he postpones a visit to Field until the spring, and that he cannot yet procure "the vol. of prints you wished," but sends a copy of one of his reports on North Carolina. (It's not known if Emmons offered publications for Field's betterment or if there was a form of barter between them.) He has "all the fish," apparently meaning fossil fish that Field had supplied.

Like Emmons, William C. Redfield (1789-1857) was keenly interested in Field's fossil fish. Self-taught meteorologist and geologist, he moved from Connecticut to New York in 1827 where he associated himself with steam navigation and railroad construction. He wrote articles on Connecticut and New Jersey sandstone prints and fossils, and formed a major collection of fossil fish now in the American Museum of Natural History.[42] In 1849 he had obtained sandstone impressions from Marsh so he was familiar with the quarries in Gill and Turners Falls. His two letters to Field, correlated with those from Emmons and two from Field to Jeffries Wyman (Appendix E), allow a rare look into the Gill farmer's fossil enterprise. Redfield wrote Field on July 25, 1856, to acknowledge receipt of his letter of July 9 with its news of fossil fish newly found at Turners Falls. Redfield's letter implies that Field has asked his assistance in identifying fossils—Field presumably had read Redfield's articles or learned about them—and he would also have hoped Redfield would become a client. On his part, Redfield's letter says that he was eager to learn if these fossils were new species distinct from those at Sunderland and Chicopee; he proposes that Field bring samples to Albany or to his cabinet at West 19th St. in New York. At about the same time, Emmons somehow learned of the new finds, and visited Field that same summer, before the letter (above) he wrote on September 4. It's not known if Redfield and Emmons encountered one another in Gill but if not, Field would have told each of the other's visit. On September 29, 1856, Field wrote Wyman (1814-1874), a Harvard anatomist whom Deane knew; he was a mainstay of the Boston Society of Natural History.[43] Field told him about

---

[40] Emmons, *American Geology, Containing a Statement of the Principles of the Science, with Full Illustrations of Characteristic American Fossils* (Albany 1857), pp. 138-45. Preface signed Feb. 1, 1857.

[41] "Indian relicks" were among the objects in Field's collection that he bequeathed to the Mount Hermon School for Boys in Gill. See below.

[42] Redfield's fish fossils were acquired after his death by Robert L. Stuart, who donated them in 1877 to the American Museum of Natural History. Information kindly supplied by Dr. John Maisey, Curator and Chair of the Department of Paleontology.

[43] This letter is the most important of any that survive from Field's hand. It will be discussed below in the section devoted to his 1859 address.

newly located fish fossils that Hitchcock believed to be different from those at Sunderland. (Field had therefore consulted Hitchcock who was one of his regular clients.) He had thought of sending Wyman "a nice specimen" but Emmons had come and so he sold several to him for a prospective publication. This letter confirms that Emmons had indeed visited Field that summer.

Cultivating his new contacts, Field wrote Redfield again on January 7, 1857. The letter hasn't been found, but Redfield's reply on January 14 discloses some of its content. Field had offered a box of specimens, but Redfield would only want those new to his collection, offering to show some others "to persons who would not go to Greenfield for this object, nor buy specimens without seeing them." Field had sent him two drawings of fish. He knew about Deane's drawings from the latter's publications and in person, and he knew the efficacy of informing a client in this fashion. The larger drawing Field had marked as homocercal (the vertebrae end in the middle of the tail's base) but, Redfield commented, "this is likely to be owing to the obscurity of the specimen." To have so marked his drawing means that Field knew the distinction between homocercal and heterocercal (the vertebrae extend into upper lobe of the tail), and therefore that he had been studying the scientific literature.[44] The smaller drawing "is probably the Inchypterus *terericeps* (?) of Agassiz, but I cannot decide without seeing it."[45] He told Field that his fossil fishes belonged to Agassiz's "Order of Ganoides." One living genus of this order, the *gar pike*, is found in American waters, for which he enclosed some scales of one fish and crude sketches that outline the scales' shapes. Redfield concluded by saying that he hoped to bring out "with the aid of Prof. Agassiz, a full description of these fossil fishes, with drawings." Alas! The New York collector died only a month later on February 12, ending any thought Field may have had of taking fossil fish to New York.

Meanwhile, Field wrote again to Wyman in Boston on January 10, 1857 (Appendix E) to tell him also about his new bed of fossil fish at Turners Falls. He thinks he might go to Boston in February if there were a meeting of the Boston Society of Natural History to which he could propose the new fish. He had been elected a corresponding member of the Society in December, 1854.[46] He hopes Agassiz would be there and would help identify the species. He describes "five beds of bituminous shales," three of them bearing good specimens, and the other two also likely to bear some. Furthermore, intermediate strata have footprints, so the rocks at the Falls are full of interest. He wonders why the site at the Falls "is not visited oftener by men of science." He was patently thinking of rallying interest in the site by visiting the Boston group, which he was doing his best to count among his clients. In one of many letters that has disappeared, he wrote to the Society to say that "he thinks he has discovered an entirely new footprint of a biped web-footed animal, two and a half inches long, with a stride of about ten inches, and with an impression of a tail. He thinks this is much more perfect than the one described by Prof. Hitchcock, and may even prove that the latter was not made by a web-footed animal."[47] Boston was the locus of a number of his contacts, as will be seen when we turn to letters he received from several collectors. As it is, the letters to and from

---

[44] The terms hetero- and homocercal are defined in the book by Field's correspondent J. C. Warren, *Warren 1854*, p. 42.

[45] Louis Agassiz, *Histoire Naturelle des Poissons d'Eau Douce de l'Europe Centrale* (Neuchatel 1839-1842).

[46] J. C. Warren (Dec. 9, 1854) notified him of his election.

[47] This letter is referred to in this fashion in a short note in *The Annual of Scientific Discovery* (Boston), 1857, p. 340. Hitchcock's reference to this track has not been identified.

Emmons, Redfield and Wyman, from July 1856 through January 1857, are crucial evidence of how Field conducted his business.

Closer to home, Charles Upham Shepard (1804-1886) became one of Field's regulars in 1855. He had been one of Marsh's clients and would have known that Field carried on Marsh's enterprise. Shepard was a mineralogist and geologist who had studied with both Silliman and Hitchcock, and taught at Yale and Amherst College, as well as at the Medical College of South Carolina. He published treatises on mineralogy from 1832 onward, and contributed to the geological survey of Connecticut beginning in 1837. His important collections of minerals are now in Amherst College and his meteorites in the Smithsonian Institution. He regularly worked and visited in Amherst where he had family relations, and by 1846 had come to know both Deane and Marsh.[48] From the latter he had purchased some fossil sandstone impressions, so it was only natural that he turned to Field upon Marsh's death. The first four of his five surviving letters to Field concern his purchases of sandstone "bird tracks."

On July 15, 1855, Shepard wrote Field to say that he would like the three specimens he had proposed, offering $15 "either in minerals or in money to your satisfaction." Deane could continue to use them—one of the many instances of Deane's collaborations with Field—but he'd like them "by Oct^{r} 1st, as that is the time when I close up my cases for the winter." The following December he wrote Field from Charleston that Hitchcock told him about a new slab of footprints like the one he had recently acquired, and that Field would reserve it for him. Shepard had no funds for it, but he hoped that Field could reserve for him several smaller specimens, about seven by nine inches, "of single foot-prints & rain-drops, & send them down to me at Amherst next May. I may be able to select a few of them, with which to complete my series. I have not much room for these specimens; but a few perfectly fresh, neatly shaped, rather thin (& therefore not heavy) specimens will always be acceptable, provided the prices are moderate." Shepard was evidently a pragmatic collector whose limited funds and spaces couldn't match those Hitchcock had at his disposal for large specimens.

Shepard's next letter is the only one from any correspondent that gives a look into Field's installation in Gill. It discloses that he had a regular showroom, and provision for collectors to make selections when he was away. On July 5, 1856, Shepard wrote from nearby Springfield that Field hadn't been home when he called on him two days earlier. "I indicated three tracks among your collection which would serve to render my own more complete, provided you should be willing to transfer them to me. I marked two of them, & the 3rd was a large, single one in your newer building. . . . The two marked with chalk stand under your show case. One is a long one & stands in the corner of the room—its shape is this." [Here a sketch of an oblong rectangle with feathery scribble in center]. We don't know where this "newer building" was located. It may have been one of the "sheds" that are on the town's tax list, or else an addition to one of Field's two houses. Shepard preferred barter to cash, so he sent Field twenty mineral specimens worth about $45. Field could then send him specimens of tracks that match that value. He ended his letter by saying that he hoped "you will get some good fish impressions." This is the first reference to fossil fish in any of the letters. Redfield's letter of twenty days later corroborates the assumption that Field had only recently uncovered fish sites at Turners Falls.

---

[48] See *Dexter Marsh 2013*, passim.

Shepard's next letter (October 11, 1856) recounted that Hitchcock and Field had talked about a book exchange valued at $50 for a foot track, but Hitchcock would give up the idea and transfer the exchange to Shepard.[49] If Field's specimens didn't match the encyclopedia's value, Shepard would await Field's reopening the "fish locality" in spring and take specimens to fill out the value. Five days later, Shepard wrote that he'd set the value of the encyclopedia at $3 per volume, half the subscriber's cost, for a total of $117. The Amherst college librarian Lucius Boltwood, who had keys to Shepard's college office, would deliver the books to Field in exchange for the specimen. (Shepard was about to leave for Yale). He and Field had talked or written about Field's discovery of "horned fish." "I only meant that I would be glad to purchase, even a fragment, if it showed the horns." (Several species of fossil fish have protuberances called "horns," but it's not known which was being referred to.) Shepard ended this last of his surviving letters to Field with a wish for success "in your future labors both on tracks & at the fish locality, or as you say, *in the fish-line."*

Shepard wasn't just a former student of Silliman and Hitchcock, he also became a professional colleague and a close friend of both men. He and Oliver Payson Hubbard (1809-1900), Silliman's son-in-law, collaborated with Silliman on his study of the sugar cane industry for the government.[50] Hubbard, who published articles on mineralogy and geology in Silliman's *American Journal of Science*, taught the sciences at Dartmouth College, where he also served as librarian from 1851 to 1865. He wrote Field on March 5, 1855, replying to a recent letter from him. (Shepard or Silliman may have mentioned Hubbard to Field, but the Gill man was capable of seeking clients on his own.) Hubbard wrote that he couldn't afford the $500 Field asked for a "collection of fossil footprints of Birds & Reptiles." This substantial sum indicates that Field was taking advantage of the flurry of interest in fossil impressions in the wake of the successful auction of Marsh's collection in 1853. Hubbard asked for Deane's opinion of the larger specimens on offer in comparison with the "better specimens" from Marsh's sale that were at Amherst and the Boston Society of Natural History. All this was in vain, however, for a month later he wrote Field that he could not raise the money.

The ever-present Deane was also involved in Field's correspondence with Henry I. Bowditch (1808-1892). Deane knew him as a fellow member of the Massachusetts Medical Society, and it was he who gave a memorial address on Deane after his colleague's death.[51] A summary of this address was published in Deane's posthumous book (*Deane 1861*). Bowditch was a physician at the Massachusetts General Hospital and a major figure in public health; for a period he was president of the American Medical Association. Well known as a pioneer in the use of the stethoscope, Bowditch was also often in the news because of his activity as an ardent Abolitionist. From one of his letters (undated) to Field, we learn that it was Deane who chose the specimen that Field sold him for $15. In that same letter and another (Feb. 25, 1855), the Boston doctor offered to help Field sell fossils to others, so Bowditch was one of several of Field's correspondants who together comprised an informal network that contributed to his sales. On February 25, 1855, Bowditch writes that J. C.

---

[49] Abraham Rees (1743-1824), *The Encyclopaedia or Universal Dictionary of Arts, Sciences, and Literature* (London, 39 vols., 1802-20).

[50] Silliman, *Manual on the Cultivation of Sugar Cane* (U. S. Department of Treasury, 1833).

[51] Bowditch, *James Deane, M.D. of Greenfield, Mass.* (Greenfield,, 1858). Address of Aug. 4, 1848 to the Franklin District Medical Society.

Warren transmitted to the Boston Society of Natural History a letter from Field that proposed a new fossil specimen for sale. (Warren's letters beginning that same month deal with this transaction.) Bowditch's later letter (Nov. 16, 1858), proposing his son's visit to Field, implies a continuing social relationship with the Gill farmer.

Field received another letter from a medical colleague of Deane's, Fitch Edward Oliver (1819-1892), a Boston physician and friend of Bowditch and Warren. He wrote Field on August 28, 1858, to say that at a recent meeting of the Boston Society for Medical Improvement, Bowditch showed "portions of the skeleton of an Indian recently found in Deerfield," offered by Field to the Society, and which the Society thanks him for. Field's donation to this Boston medical group was testimony to his friendship with Deane. It might also have been a politic move to extend his circle of potential clients in the state capital. It's not surprising that he had this skeleton because there had been a keen interest in early Indian culture for several decades. Marsh's auction listed 225 "specimens Indian Relics, found in the Valley of Connecticut River," and "Eleven pieces Pottery and Discoidal Stones from the Mounds of Mississippi." We don't know if Field uncovered the Deerfield skeleton while quarrying for fossil trace impressions, but Marsh's "cabinet" is sufficient proof that Indian artifacts and remains were much sought after. In 1873, as we shall see, Field exhibited a Canadian Indian canoe at the Greenfield fair. Other Indian objects were probably in the collection he willed to the Mt. Hermon school: "Fossils, Footprints, Shells, Minerals and natural and artificial curiosities." Curiosity about the people who had inhabited the region around Amherst and Deerfield was a consistent feature of the district's culture. Hitchcock, after all, had named prominent peaks "Norwottock," "Nonotuck," and "Pocumtuck."[52] One need only think of James Fenimore Cooper and Longfellow's Hiawatha to remember how much Indian lore entered into American Romanticism.

Correspondence with J. C. Warren

Among letters received by Field, the most surprising and informative are twenty-eight from John Collins Warren (1778-1856), the renowned Boston pioneer of surgical anesthesia. They record in detail the Gill man's way of conducting business, while also showing Warren's persistence in acquiring and documenting sandstone fossils. Field's letters to him are missing but often we know something of their content from Warren's replies. Professor of anatomy and surgery at Harvard's medical school, Warren was a founder of the *New England Journal of Medicine* and of the Massachusetts General Hospital. He was also a major figure in the Boston Society of Natural History to which Field sold sandstone impressions, often with his intercession. Earlier Warren had bought fossil tracks from Dexter Marsh for the Society—he was among those who signed the visitors' book in Marsh's museum—including one from Marsh's auction he bought for the Society for $375. Moreover, Warren formed his own collection of fossils that subsequently came to the American

---

[52] See Karen Halttunen, "Mountain christenings: Landscape and memory in Edward Hitchcock's New England," *New England Celebrates: Spectacle, Commemoration, and Festivity*, Dublin Seminar for New England Folklife, Annual Proceedings 2000 (Boston University, 2002): 166-77, and Robert L. Herbert "The Sublime landscapes of Western Massachusetts, Edward Hitchcock's Romantic naturalism," *Massachusetts Historical Review* 12, 2, 2010: 71-99. Hitchcock gave his own accounts of the mountain namings in *Hitchcock 1863*, pp. 212-70.

Museum of Natural History.[53] In his letters to Field, which we now turn to, it's not always clear whether he refers to his own collection or to that of the Boston Society of Natural History.

Warren's abiding fascination with Connecticut River Valley sandstone impressions is documented in a book he published in 1854, *Remarks on Some Fossil Impressions in the Sandstone Rocks of Connecticut River*.[54] He was among the very first to become involved in disseminating news of the new discoveries. In 1837, one year after Hitchcock's revelatory article, he took to London's Royal College of Surgeons the gift of seven specimens of sandstone footmarks and thirty-one casts of other impressions offered this institution by Hitchcock.[55] Then in 1845, Deane obtained for Warren, presumably from Marsh, a slab from Turners Falls. In his book, Warren gave a detailed description of the impressions on this slab which measured two feet by two and a half.[56] Early in 1854, while he was writing his book, he received from Hitchcock "a number of additional specimens of fossil impressions" which he lay before the Society of Natural History.[57] In his book he devoted many pages to Hitchcock's classifications of the footmarks and his reasoning, drawing from the Amherst professor's publications and apparently also from conversations with him. Warren credited "Mr. Silsbee, our photographist," for a plate representing "the remarkable slab from Greenfield" that was now in his collection, bearing several impressions including bird tracks and the foot of Hitchcock's huge *Otozoum Moodii*.[58] It was the first photograph, a salt print, ever to appear in a scientific book in America, and only the second in any kind of American publication.[59]

Warren's first known letter to Field (August 6, 1854) refers to five fossil specimens he acquired from Field when he visited him that summer. He was already familiar with Greenfield from attending the auction of Marsh's collection the previous year. This letter is the earliest evidence we have of Field's selling trace impressions; in effect he was taking over the late Marsh's role. Warren's second letter (September 28, 1854) announces the safe arrival of a box of specimens. He refers to "other specimens you mentioned" that he wishes Field to bring to Boston. To cement relations, he offers to give the Gill farmer "medal rulings" [metal rulers?] that Field had found too expensive, and promises some geological books. A month later (October 21) he writes that he will send copies of the *Cleveland scientific journal*. He hopes that he shall soon see the slab of Field's *Brontozoum* that he

---

[53] Information kindly provided by Jack Eckert of the Countway Library of Medicine, Harvard University.

[54] *Warren 1854*. Originally read before the Boston Society of Natural History in late 1853 and the first months of 1854. Warren sent Field a copy of his book on Aug. 6, 1854 (see letter of that date).

[55] Katherine Tyte, Project Archivist, Museums and Archives, The Royal College of Surgeons of England, searched the transcripts of donation books and found the following from August 9, 1837: "Dr J C Warren, 31 Casts of Bones of the Megalonyx laqueatus and 7 specimens of Natural History" and "Prof Hitchcock, 7 spec. of footmarks of animals in sandstone of the Valley of the Connecticut - 29 Casts of other footmarks." Warren later wrote (*Warren 1854*, p. 13) that the Royal College thanked Hitchcock by offering Amherst College "casts of the skeleton of the famous Megatherium of South America." The casts were mislaid, however, and never reached Amherst.

[56] *Warren 1854*, p. 17.

[57] Ibid, p. 22.

[58] Ibid, p. 54: "The surface represented in the plate may, by the aid of a magnifier, be studied without the presence of the stone itself; for the photographic art displays the most minute objects without alteration or omission." It was James Gerht of the Mount Holyoke library who put me on the trail of Warren's photograph.

[59] The first was the frontispiece of Anon., *Homes of American Statesmen* (New York, G. P. Putnam, 1854).

might buy. In his next letter (November 2, 1854), he looks forward to having the *Brontozoum* foot and "your Otozoum" if it's finished (that is, cleaned and prepared) for a meeting at his house. Since he already had in his collection the *Otozoum* photographed earlier for his book, the specimen he anticipates would be for the Society of Natural History. In this letter he proposes buying some fossil impressions from Field that he would send to Sir William Jardine, the Scottish naturalist who had recently published a book on sandstone footmarks from his own region.[60] This begins a long and amusing saga carried through ten more of Warren's letters. Field provided the Bostonian with twenty specimens for Jardine at $1 apiece, and five others as a gift; he hoped to get fossil coal specimens in return. The canny Scotsman delayed paying for Field's fossils until October 1855. Warren's annoyance shows throughout the communications, but he persisted on Field's behalf.

Warren's fifth letter (November 7, 1854) lets us know that he, too, was shrewd about money, for he told Field to use ordinary means to send him the *Otozoum* specimen, not the more expensive way. He will shortly send the pamphlets (not otherwise described) mentioned in the previous letter. At some point before late February, 1855, Field told Warren about "valuable specimens" he had recently discovered that might interest the Society of Natural History. On February 23, Warren wrote to say that the Society wanted a full description, a sketch, and a cast of the proposed piece. By March 2, Warren had received Field's description of the specimen but not its dimensions, and no cast was included. Two weeks later he told Field he had received "the three pieces you sent me with your note," and that he was preparing to ship the box for Jardine to Liverpool. On March 23, he told Field that he had shown hisspecimen and information about it to the Society. Thomas Bouvé, a fellow committee member (who was likewise acquainted with Deane) might go to Greenfield to see Field, but that's uncertain and Warren promises expeditiously to "forward the matter." He did indeed, and on April 5 wrote that at the previous day's meeting of the Society, the members declined to make an offer without seeing the slab; they would pay the costs of having it sent, and Warren was confident that once they saw it they wouldn't return it. A week later he wrote Field that he would present it the next day to a meeting of "scientific gentlemen," and the following week to the Society, together with Field's remarks. On his own account he wrote "I shall always be glad to receive any little specimens or fragments you do not want, with your remarks, which are ingenious and always to be respected as those of a practical man."

Hardly had that specimen been considered by the Society when Field zealously dispatched another one. Warren thought that on this new slab, one of the impressions had been made by a Herpetozoa, an amphibious reptile or lizard, and urged Field to continue his investigations. "You have already done much and will, I hope, be able to do more with advantage to yourself and to science." (May 4, 1855). On July 9, 1855, Field wrote Warren that he had seen an account in the *Evening traveller* of the reception of his recently sent specimen.

> Boston Society of Natural History. A letter was read from Mr. Roswell Field of Greenfield, addressed to the President, giving some description of the sandstone slab referred to at the last meeting. The letter was accompanied with a plan of the slab and the impressions upon it. Mr. Field states that there are about 130 sets of tracks or 260 Impressions, generally very

---

[60] William Jardine (1800-1874), *Ichnology of Anandale or Illustrations of Footmarks Impressed on the New Red Sandstone of Corncockle Muir* (Edinburgh 1853).

> perfect, but in some the forefoot is missing. The tracks, he thinks, are batrachian, but whether all were made by batrachians of the same species is doubtful.[61]

From this lost letter that Warren referred to, we learn that Field made drawings, but we have no idea of their quality. On July 13, in his reply to that letter, Warren reproduced the text of a statement about the slab that he had composed for the Society. In it he gave a minute description of the prints on both sides of the stone "about two feet square and an inch thick." One impression about fifteen by one inch "has been suggested by Mr. Field on the ground of an idea of Mr. Lea, the distinguished geologist of Philadelphia, to be the trace of the mollusc, or shell-fish." Field had wondered if "Cambridge" (presumably Harvard) would buy fossils, but Warren thought this unlikely.

Field took advantage of Warren's eagerness and proposed sending him another specimen, this one of a quadruped's impressions, apparently accompanied with remarks by Lea. On August 22, Warren told Field he would welcome the slab. Jardine continued to vex him for "I have had more trouble in trying to oblige him than in making my whole collection from President Hitchcock, Dr. Deane and you." The new slab arrived at the end of the month and on September 14, Warren wrote that he would "take the Quadruped slab on your terms. Dr. Deane, who is a competent judge, thinks the price is not too high and you are of the same opinion. These considerations, also, a desire to encourage your researches, your liberality on various occasions, and the hope of being considered by you in future discoveries have contributed to this conclusion." He asked Field and Deane to comment on the exact location of the rock from which the slab was taken and their views of the quadruped impressions as well as of other tracks and marks.

Every few weeks Warren continued to receive stony prints from Field. On October 22, 1855, he announced reception of a specimen with impressions of rain drops, and either on the same or another slab, a bird track "the most distinct I ever saw." He agrees with Field's idea about a track of an *Aethiopus*, and makes the startling statement "the impress of the heel shows marks of feathers." Without knowing the trace impression being mentioned, this reference to feathers is peculiarly frustrating! Warren's next letter (December 9, 1855) offers evidence of rivalry among collectors, and of the willingness to pay well if one were the first to own a new specie's track. "The specimen which you describe must be very interesting I think, and I should like much to see it and, perhaps, purchase it, if not valued too high; the previous possession and publication by President Hitchcock having the priority, would of course lessen the value of any other specimen." Field had asked about the head of a reptile he had seen when visiting Warren, but his host didn't know which saurian he was referring to. He was unable to lay hands on a "vegetable specimen" Field mentioned, but it "is safe somewhere." The Gill man had also asked about copies of Silliman's journal. Warren had none to spare but mentioned a bound set of sixty volumes that could be had for $150. He also informed Field that "If I live long enough, I shall publish drawings of the most interesting specimens I possess, not with a view of profit, but for general information." On December 23, he told Field that he would buy the new slab for $150, having now the comfort of a favorable opinion and description by Deane.

Warren's last four letters to Field in early 1856—a virtual flurry shortly before his death on May 4— concern the "Gigantipus slab," probably the one for which he had offered $150. It seems

---

[61] *Daily Evening Traveller*, Boston, March 27, 1855.

that Field had received another offer for this specimen, but Warren claimed first refusal.[62] The outcome of this negotiation is not known. Warren died two months later, on May 4, 1856. He was then seventy-seven, one of those Bostonians who maintained a vigorous life into old age. One gets little sense of any declining powers from a man who was planning another publication in his last year (to Field, December 9, 1855). Redfield was also vigorous into old age, although he was a decade younger when he died one month after his last letter to Field. Among Field's other clients, Shepard reached eighty-two, Bowditch eighty-four and Lea ninety-four before they passed on. They were all pursuing business with Field in their late fifties or sixties, well along in maturity although only two decades after the discovery of the sandstone impressions—still considered the tracks of birds—that fascinated them. If we add to all the letter-writers the names of other scientists who visited Field—Agassiz, Dana, Hitchcock, O. C. Marsh, Henry Rogers, Silliman, and Wyman—we have called up a whole galaxy of American geologists and paleontologists, to whom we can add Britain's famed T. H. Huxley (1825-1895) who came to Gill in 1876.

Surviving letters to Field from scientists end in 1858. Perhaps there's some connection with Deane's death that year. He was the intermediary with nearly all of the scientists, and also Field's mentor, so an era ended with his disappearance. (Alas! His correspondence and archives have also disappeared.) However, it seems likely that Field received more letters after1858 but failed to save them. Certainly he had letters from O. C. Marsh a decade later, but these are lost although his to Marsh have been preserved (see below); they will help write the last chapter of Field's life. Meanwhile, looking back over the letters of the 1850s tells us how much we have learned. For the first time it's now established that Field uncovered a new site of fish fossils at Turners Falls, apparently meaning both actual fossils and trace impressions different from those previously known from Sunderland and Chicopee. References to the new discovery are in Redfield's letter of July 25, 1856, and Emmons' of the following September 4. Fossil fish began then to rival "bird tracks" in Field's enterprise.

We now know that Field had one or more rooms in which he displayed stone impressions (Shepard, July 5, 1856) and that in his absence clients were free to visit and mark specimens they wished to purchase. Some specimens were displayed there in a show case because Field didn't wait for clients to visit or write him. These were viewed in a "newer building" but the town's tax lists don't reveal what that might have been. In the mid-1850s he freqently wrote to collectors, in one case (to Hubbard, spring 1855) proposing a "collection" for $500. To judge from the prices for individual slabs that we can identify, this would have meant a number of specimens, probably chosen to represent several types, not just several of the same sort. He sent out quite a few letters offering individual specimens, in some cases supplying sketches of them. No sketch survives, so we have little idea of his skills as draftsman. In only one instance is there a detailed description of a slab on offer, Warren's letter of July 13, 1855, already mentioned. More than once Field pooled a number of specimens as a "collection." In the winter of 1862-1863, Hitchcock bought for Amherst what he called "Mr. Roswell Field's private collection," large enough to require additional space in the

---

[62] There was both an *Otozoum Giganticus* and a *Brontozoum Giganticus*, but it's not known which one Warren had received. Hitchcock wrote Silliman on November 23, 1855, to say there was no further news "respecting the tracks of the *Gigantipus*. Mr. Field has worked hard to get more but says he has removed most of them. I think he has found enough however to get $100 or 200 out of somebody." For that letter see *Hitchcock-Silliman 2012*.

museum.[63] Field would reconstitute his own collection after such a sale; upon his death he willed his last private collection to the Mount Hermon School for Boys.

Field's clients unwittingly revealed themselves in their correspondence. Shepard, for example, seems to have been intent on saving money for he was keen to barter books in exchange for trace impressions. And on September 15, 1855, Lea wrote that "You mention you desired to have books to aid you," so barter was an effective way of bargaining for both sides. Emmons and Warren made outright gifts, and they seemed ready to help Field educate himself. Nearly all his correspondents wrote that they would help him find other clients, but several made clear that they were anxious to have first claim on recently discovered fossils. The prestige of being first owner was added to the basic value of the piece.

No more birds

In August, 1859, in Springfield, Roswell Field addressed the annual meeting of the American Association for the Advancement of Science with a sensational claim. It wasn't birds that made the "bird-tracks," but four-legged reptilian animals![64] He didn't use the word "dinosaur," coined in 1842 by Richard Owen, but by 1868 (see below) that word took hold for the track makers. His address was Field's only publication, a singular one that gives him a special, if minor place in the history of paleontology. Published soon afterward (Appendix B), it gave him high visibility in his neighborhood. The *Springfield Daily Republican* announced on August 5, 1859, that he had been made a new member of the AAAS. It was then, perhaps in good-natured teasing, that he acquired the honorific "Dr." with which thereafter he customarily signed his name.[65] In his address he reasoned that sandstone impressions often were limited to the marks of the larger hind feet of a quadruped, because the shorter, lighter forefeet either didn't touch the mud or else made slight traces that didn't penetrate the underlayer from which many specimens were taken. However, on other specimens many of these bipedal quadrupeds left impressions of smaller forelegs as well as traces of tails unlike those of birds. Impressions of the hind legs of these undoubted quadrupeds are remarkably like those that birds would make, hence the understandable errors of classification. There were no sandstone birds, only the impressions of the posterior legs of reptilian creatures!

Field's article was published with the proceedings of the AAAS in 1860 but got wider currency from its nearly simultaneous appearance in Silliman's journal, boosted by editorial praise: "Mr Field is a plain farmer, who makes no claim to be an authority in science but, like Hugh Miller, has hammered his geology out of the rocks on which he lives. He is well known as one of the most successful collectors of the foot-marks of the Connecticut sandstone, and his testimony as to the impression made on himself of their probable character and origin, has the merit of a conviction

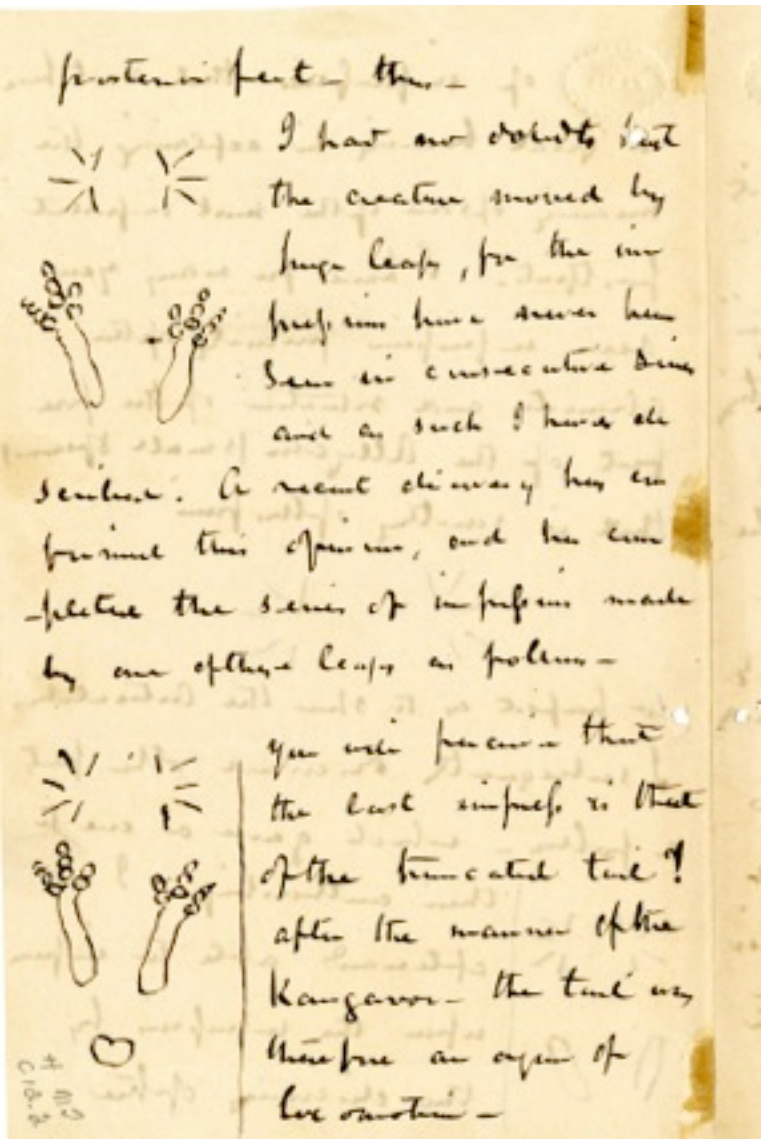
---

[63] *Hitchcock AJS 1863*. The purchase from Field was noted in the *Boston Recorder*, Feb. 19, 1863, p. 31.

[64] "Ornithichnites, by Roswell Field, of Greenfield, Mass.," *Proceedings of the American Association for the Advancement of Science*, vol. 13 (Cambridge 1860): 337-40 (from the annual meeting in Springfield, MA, Aug. 1859). See Appendix B for the text. Hugh Miller (1802-1856) was the well-known Scotch geologist who began life as a working class stone worker.

[65] On the 1858 map of Gill (fig. 2), "MD" appears after his name. This is probably the map-maker's error, but might possibly mean that Field awarded himself the honorific before the Springfield address.

8. James Deane to Jefffies Wyman, 1856



making head in an honest mind against all the weight and bias of opposing authorities."[66]

Although Field's address must be acknowledged as the first publication to deny that birds made the fossil tracks, he wasn't really alone in drawing this conclusion. Deane and Hitchcock lay behind his claim, and we need to go back to both men to see that Field's address was really the result of several years of reasoning by all three. Already in 1856, Deane privately challenged the assertions dating from Hitchcock's 1836 article that birds made the tracks. In a letter to Wyman, he wrote that posterior tracks of some four-legged reptiles who possessed shorter forefeet couldn't be distinguished from bird tracks. He would soon send the Harvard anatomist daguerreotypes of relevant footmarks. He made outline drawings of hind feet with three toes and forefeet represented by five flaring short lines (fig. 8). Deane writes:

> "The remarkable fossil thus exhibits two fore feet of five toes each, toes a saurian type, and two posterior feet of the ornithic type with the impress of the fore arms connected with them, and also the impress of the stout muscular tail, if it can be called such, the os coccygis.
>
> There never yet has been the slightest proof, or argument, to show that the ornithic footprints were really produced by a quadruped, but this discovery which has taken 15 years to perfect, will I think disturb the doctrine of ornithic origin. The creature has only to rise upon its posterior feet, and walk, and the consequence will be a row of footprints of Birds, for there is not the least difference in the posterior footprints from those of Birds.

[66] The address was published with very minor changes in wording that don't affect the meaning: "Ornithichnites, or tracks resembling those of birds," *AJS,* n.s. 29 , 57 (1860): 361-63.

> When you get the drawings you will be able to judge for yourself. I have never regarded the hypothesis that the footprints were not of Birds as of much importance, but facts cannot be disregarded, and in the present subject, are entitled to profound consideration."[67]

In another letter to Wyman on October 23, 1856, Deane returned to the same set of deductions. By then he was gathering plates and notes for a book that was left unfinished when he died two years later. These are preserved in its posthumous publication (*Deane 1861*). He sent Wyman several photographs of trace impressions or lithographic copies of them (apparently both), marked with diagnostic alphabetical letters. Some of the tracks made him feel that

> the ornithic impressions, many of them at any rate must finally be assigned to quadrupeds of unknown types, for although I have ever believed that from the exact comparison which the extinct impressions hew to living, these could only be due to Birds, still, the extraordinary facts I am now stating, certainly overthrow this opinion in part, and greatly disturbs it altogether.
>
> That the animal also walked upon all its feet, after the same manner of quadrupeds, I have indisputable evidence. I have formerly supposed that the anterior feet were not organs of locomotion, as in the Kangaroo, but I have recently seen impressions supposed to be ornithic, which were attended by the Reptilian foot in the method indicated by the sketches, which are outlines.[68]

In the meantime, what was Hitchcock thinking? He had long allowed for diverse kinds of animals who made the fossil tracks. In a major essay in 1848 on Connecticut River Valley prints, he described forty-nine species of animals, going out of his way to avoid dogmatism in naming the species and inviting others to make their observations and perhaps reach different conclusions. Among his classes were thirty-two bipeds of which twenty-two were birds and two "perhaps bipedal batrachians [tailless frog-like creatures]; and the remaining eight may have been birds, but will more probably turn out to have been either lizards or batrachians."[69] He was therefore far from believing all the biped tracks were made by birds. Sometime before 1854, Warren had acquired from him a specimen of an *Anomoepus* from "the red shale of Hadley." The larger posterior feet had three toes, the forefeet, five. Warren wrote that Hitchcock, citing Deane's agreement, posited a frog-like creature about three feet high.[70] We shall shortly return to this track.

In 1855 Hitchcock acquired from Field an unusual slab. He wrote Silliman about this heavy specimen weighing nearly a ton, bearing four gigantic tracks of a biped and traces of a tail. He

---

[67] Deane to Wyman, September 21, 1856, in the Countway Library of Medicine, Harvard University, H MS C 12.2

[68] Deane to Wyman, October 23, 1856, in the Countway Library. Deane's daguerreotypes and photographs sent to Wyman have not been found. The quadrupeds he refers to are represented in plates 31 to 36 of his posthumous book.

[69] *Hitchcock 1848*.

[70] *Warren 1854*, p. 35.

proposed naming it *Gigadipus caudatus* [now Eubrontes caudatus].[71] "My impression is that it will cast a good deal of light upon the footmarks & I am not without fears that it will weaken or destroy the proof that any of the tracks are those of birds. But I say this as yet inter nos only." In May, 1856, half a year before Deane's September letters to Wyman, Hitchcock published remarks about this new footprint. "Upon the whole, the evidence is very strong that this animal was an enormous biped with a very long tail!" It could not have been a bird, he wrote, and "many of these extinct animals may have belonged to a type of animal existence intermediate between that of birds and the lower classes of vertebrates."[72] Because we now know that theropod dinosaurs were the ancestors of birds, this seems like a very prescient thought.

On September 29, 1856, four months after Hitchcock's article and a few days after Deane's letter of the 21st, Field wrote Wyman (Appendix E), by then one of his clients, to say that in view of previously unseen tracks, Hitchcock and Deane would have to "modify their theory of ornithichnites." Many tracks showed bipeds with tails unlike those of birds, and quadrupeds who lacked tails. He described the footprint that Hitchcock had recently acquired from him—the very one the Amherst professor had just commented upon—made by a quadruped sitting "on his hind feet & legs or forearms," that is, on his "rump." A month after Field's letter, Deane also wrote Wyman, as we saw, to describe what must be the same track, showing an animal "in a sitting posture, as the dog and other quadrupeds, sits."[73] This was a quadruped that walks upon two or four feet "at pleasure" or else leaped. Its forefeet have five toes, "clearly Reptilian," but its posterior feet "are unequivocally ornithic." Deane concluded "that the ornithic impressions, many of them at any rate, must finally be assigned to quadrupeds of unknown types." Reading Deane's detailed observations and deductions makes it evident just how much he would have taught Field. As we saw, he was the intermediary between Field and the scientists and collectors who bought sandstone slabs from him, and of course it was from Field that Deane acquired sandstone fossils after Marsh's death in 1853.

Hitchcock also knew Wyman and was himself one of Field's major customers, so it's no surprise to learn how often the same or similar ideas could reverberate among Deane, Field, and Hitchcock. More than once the Amherst professor bought individual slabs from Field, and sometimes whole "collections" of them. Several Massachusetts newspapers reported that Hitchcock had paid $600 for a set of footprints in February 1857,[74] and only eighteen months later, another such sale was remarked upon. "Dr. Roswell Field of Gill has sold his valuable collection of footprints in the sandstones on the Connecticut River, to Amherst College."[75] When Hitchcock published his major opus on sandstone impressions in 1858, little more than a year after Deane's

---

[71] *Boston Recorder*, Jan. 3, 1856, p. 4: "A letter to Prof. Silliman from Prof. Hitchcock, dated Amherst, Oct. 12th, 1855." This letter is similar to, but not identical with the letter of the same date in Amherst College's archives: See *Hitchcock-Silliman 2012*. The sentence "My impression is . . ." comes from the archival letter.

[72] Hitchcock, "On a new fossil fish, and new fossil footmarks," *AJS,* n.s. 21 (May, 1856): 96-100.

[73] Deane to Wyman, Oct. 23, 1856, one of five letters from Deane to Wyman in the Countway Library, Boston, H MS C 12.2.

[74] *Boston Recorder*, Feb. 12, 1847. The same notice was published in the *Boston Evening Traveller*, and papers in Salem and Pittsfield.

[75] *Boston Evening Transcript*, Oct. 7, 1858.

and Field's correspondence with Wyman, he wrote about the tracks of the *Anomoepus major*, a specimen acquired from Field. It's again the same track as the one Deane had described in his letter of October 23, 1856, to Wyman. It seems, Hitchcock wrote, "as if we almost saw a huge frog sitting upon his haunches ready for a leap; but his forefeet have five toes, corresponding well with those of the kangaroo. Yet the hind feet have only three toes, and the distinctness of the phalanges makes it a perfect bird's foot, with a long heel; but the shape of the caudal appendage is different from a [bird's] tail."[76]

Despite this crucial observation, Hitchcock didn't draw Deane's and subsequently Field's inferences that the prints of hind feet of such animals were so like birds' tracks that the latter couldn't be isolated to avians. Hitchcock was probably aware of Field's speculations because his book is full of references to him as the source of more than a dozen specimens he documented from Field's own collection as well as those purchased from him. He also thanks him (p. 94) for providing a sketch of one specimen, and he praises him warmly for his skill and for bringing to light "more species than any other man." Nonetheless, he probably didn't think Field's ideas were worth mentioning because he was an untrained amateur. Further, there's no known record of Hitchcock reacting to Field's disclosure at the AAAS meeting or its publication in Silliman's journal. His whole professional pride was engaged in his own path-breaking identification and classification of "bird tracks." He died in 1863, still believing that birds made some of the tracks.

As for Deane, he died in 1858 while working on his book on fossil footprints. It was edited in 1861 by two Boston colleagues, Bowditch and Bouvé. Bouvé, who compiled and commented on Deane's unfinished notes, praised Field and thanked him for "original materials and observations." Both he and Hitchcock are thanked for help in preparing the edition. Field had supplied Deane with many stone tracks over previous years and was fully cognizant of the Greenfield doctor's writings about them. In the book, Bouvé repeated Deane's doubts that birds made the sandstone tracks, presenting them as a prediction of the view that "the whole theory of the ornithic character of any of the footprints would be overthrown." Bouvé himself thought the overthrow was likely to be verified. Nonetheless, true also to Deane's reluctance to give up birds entirely, he retained many of Deane's manuscript descriptions of tracks that were "doubtless footprints of birds." Elsewhere in the book (p. 20), Deane himself wrote that "Roswell Field, Esq., a gentleman of acute powers of observation, succeeded Mr. Marsh as an explorer; and, possessing an intimate knowledge of the subject, began at once to make discoveries of significant importance. His estate, being at Turner's Falls, embraces the richest localities yet discovered, and his success has been very remarkable. In the preparation of this paper the author will have frequent occasions to acknowledge his obligations to him for original materials and observations."

Field was also invoked by Hitchcock in 1863, when he gave a paper at the April meeting of the AAAS in Boston. Suffering and wraith-like (he died the following February), Hitchcock was anxious to bring up-to-date his work on fossil tracks. A month after the April meeting, he sent to Silliman's journal the salient portion of this AAAS address.[77] He wrote that "during the past winter (1862-3) I have made a large addition to the Cabinet by the purchase of Mr. Roswell Field's private collection. Unexpectedly, many new facts have been brought to light, not contained in my

---

[76] *Hitchcock 1858*, p. 44.

[77] *Hitchcock AJS 1863*.

'Ichnology of New England.'" The purchase of Field's collection was so extensive that, as we saw, a new room had to be added to the Amherst museum. Examination of many new specimens "unsettled" his convictions that the stony tracks were made by birds, uncertainties particularly prompted by the tracks of the frog-like *Anomoepus* that he and Deane had already described. This four-footed creature had posterior feet just like those of birds, therefore wouldn't one be forced to conclude that all the makers of such tracks were quadrupeds? However, Hitchcock, after this admission, evoked the recently discovered *Archaeopteryx*, the bird-like animal, and cited letters from James Dwight Dana that on the evidence of *Archaeopteryx*, "there were Reptilian birds in ancient times." Instead of giving up his birds, Hitchcock wrote that because "the ornithic characters" of the *Anomoepus* were striking, the animal "may after all have been a bird, of so low a grade, that even with its skeleton before him, the anatomist would hesitate where to place it, as in the case of the *Archaeopteryx*."

Hitchcock's conception of a four-legged reptilian bird was more fully elaborated in a book he was preparing in 1863 that was published two years after his death, edited by his son Charles.

> I would not have it understood, however, that I adopt the opinion that any of these ancient quadrupeds which used their fore feet for locomotion, were really birds. I could believe that a bird might have four feet; but I have imagined that in such a case the anterior feet would be very peculiar, and not ordinarily used for locomotion. But the very decided ornithic type of everything about the tracks of the Plesiornis [P. mirabilis, a new species just described], may well raise the question whether an animal might not be a real quadruped moving on four feet, with a tail, and yet a real bird. However, most naturalists, probably, will take the ground that such an animal was rather an ornithoid Batrachian, or a lizard, or marsupial. And this perhaps would be the safest conclusion. Yet the facts are certainly very remarkable; and should lead us to keep our eyes open to all reasonable suggestions, and certainly to admit that the bird-type in sandstone days may have exhibited forms very different from the perfect bird-type of the present day.[78]

Hitchcock was finally unable to renounce "bird-tracks" which were the repository of his central contribution to paleontology since 1836, but he had almost stumbled upon the correct view by 1856 and in so doing, contributed to Field's deductions. Even closer to Field's revelation were the unpublished considerations of James Deane already discussed. In effect, Field's 1859 address grew out of the exchanges among Deane, Hitchcock and himself, although he took a forward step that neither of the others could bring themselves to take.

Although Field was the first to deny birds, his article provoked no startled reactions, probably for two reasons. The first is that many scientists had never accepted that birds made the tracks because no bones had been found and no adjacent impressions of feathers. Therefore they would not have been surprised by Field's assertions, having already accepted the existence of a number of lizard-like creatures. Already in 1856 Wyman had been alerted by Deane to the weakness of the ascription of the tracks to birds, and Wyman was in constant communication with other scientists in

---

[78] Hitchcock, *Supplement to the Ichnology of New England, a Report to the Government of Massachusetts in 1863*. Edited by Charles H. Hitchcock, who provided supplemental notes and "Descriptive catalogue of the specimens in the Hitchcock iconological cabinet of Amherst College" (Boston 1865). Edward Hitchcock signed his text July 1, 1863.

Cambridge and Boston. The second reason is that for the scientists, Field was merely an untrained provincial collector who lacked the bona fides that could give credence to his disclosures. It was Hitchcock who should have been perturbed when he read Field's piece, but in fact he was himself a party to Field's conjectures!

Field's later years

No letters that Field received after 1858 have come to light, so we're left to guess at the further extent of his sandstone business. For a rarity, however, letters that he wrote to a client have survived, nine letters to O. C. Marsh (1831-1899) from January 1867 to June 1876 (Appendix D).[79] (Only two others from his hand have come to light, those to Wyman already mentioned, Appendix E). Marsh—no relation to Dexter Marsh—was the Yale paleontologist who became one of America's most famous dinosaur hunters, along with his arch rival Edward Drinker Cope (1840-1897). In one of Field's letters to Marsh, a long fragment whose first portion is missing, Hitchcock figures importantly. Marsh had informed Field that the so-called bird tracks "were made by a peculiar kind of reptile." The Yale paleontologist had his ear to the ground because that same year his rival Cope had made a remark about reptile tracks to the same effect (see below). Although Field himself had proposed this in his Springfield address in 1859, he wanted in his letter to make sure that Hitchcock, whose work he briefly characterized, would be adequately honored by Marsh. He was so thoroughly aware of Hitchcock's careful calculations and classifications that he feared Marsh would set them aside. It's a curious but laudable defense of an older colleague whom he had known, and much to his credit.

Most of Field's other letters to Marsh are querulous demands that he come to Gill to fetch slabs he had agreed to buy, twice saying this was imperative because he was renting or leaving his house.[80] He sold the Yale curator one "collection" for $500 and another for $525. Marsh was simultaneously buying sandstone impressions from Timothy M. Stoughton (1817-1908), an enterprising neighbor of Field. The two had a prickly relationship ("Mr. Stoughton is not friendly to me"),[81] but Hitchcock temporarily stored specimens for Marsh at Stoughton's place. Their odd collaboration continued until 1875, when a local paper reported that "Mr. Stoughton and Dr. Field disposed of many valuable specimens of bird tracks and Indian relics to Prof. Marsh last week."[82] Field subsequently gave Marsh exclusive rights to the quarry at Lily Pond for one year for $100 (June 7, 1876). A few other things can be gleaned from the letters to Marsh. One has a very rudimentary drawing, merely a few scratchy lines (Nov. 7, 1867). The same letter admitted that he spoiled one track while working on a joined set of several slabs. Later (July 13, 1868) he asked

---

[79] Letters to Othniel Charles Marsh (1831-1899) are in the archives of the Peabody Museum of Natural History at Yale University, kindly communicated by Daniel L. Brinkman, Museum Assistant. In 1866 the museum was founded and Marsh was named Professor of Paleontology, the first such appointment in the U.S. In 1867 he was made curator and soon became the de facto director of the Peabody.

[80] On Oct. 7, 1867, he wrote that he had rented his house; on Feb. 19, 1870, he said that "this place will soon pass out of my hands." No record of either of these moves has been found, and tax records have him at home every year.

[81] Field to Marsh, Oct. 7, 1867.

[82] *Greenfield Gazette & Courier*, July 5, 1875.

Marsh to send him a lecture on cattle breeding that Marsh had mentioned. It was bound to interest him because he regularly raised cattle.

Because no other correspondence after 1858 survives, our principal source for knowing what Field was doing are public records of various sorts. The town's taxes ("Valuation lists") were fortunately itemized in helpful detail. From 1861 onward Field had two houses treated as one household. In the photograph that Ralph Stoughton reproduced as from the 1890s (figs. 4 and 5), it's the righthand building that he labels the Field "homestead," the other as "the Foster homestead."[83] Field's house lends itself to speculation. Its large and double-gabled structure might well been roomy enough for two families, and the outdoor staircase to the right suggests rooms above the ground floor garage or workroom. (Of course the inheritance of his niece Eugenia and her husband Frank B. Foster would have allowed a remodeling of Field's house after 1882, so we remain in the realm of speculation.)

The valuation list of 1861 groups the two houses and a wood-house valued at $1775, three barns ($225), one "cornhouse" ($75), one tobacco shed ($100), one "shed and shop" ($50) and one "wagon house and shed" ($50). It's no surprise to learn that he grew corn, but a tobacco shed must mean that he sold that product. He had a horse, two oxen, pigs weighing together 200 pounds, and enough cows to let us conclude that he sold milk: eight cows, two three-year old heifers, and three yearlings. The younger cows may mean that he raised some for sale, hence his interest in breeding. His land is broken down by the assessors to twenty-eight acres of mowing, ten of tillage, sixty-three of pasture, eighteen of wood, and eighty "unimproved." Most of the land can be accounted for as firewood and provision for his animals, but ten acres under cultivation might have included produce for sale, including tobacco. The value of his aggregated real estate that year was $4725 (taxed at $25.32).

In 1870 the U.S. census lists Field as farmer, with a fifty-five year old domestic, Orra Whipple, and $8000 in combined real and personal estate. Tax records for the year list buildings, livestock and land nearly as they were in 1861. His buildings are the same except that he now has two tobacco sheds, and "one barn Carter Place." On the 1858 map (fig. 2), the Carter farm is located due east of Field's with one intervening farm. He presumably used this barn for storing hay that he cut on the farm of David and Mary E. Carter, which he subsequently bought in 1868; we have seen already that he sold portions of it of two years later. In 1874 the tax records show Field's ownership of the "Pasture Carter Place 41 acres," so he retained that land. By comparison with 1861, the distribution of his farmland is about the same in 1874, except that pasture increased from 63 to 80 acres, and "unimproved" decreased from 80 to 61 acres, which suggests that some of the latter had been turned into pasture. The assessor's valuations are the same for the smaller buildings, but the three barns are assessed at $450 instead of $225. There are now two tobacco sheds at $250 instead of one in 1861, then listed at $100; values of tillage and pasture rose by 75%. These values reflect the moderate rise of the economy after the turbulent years of the Civil War. There was, however, one surprising drop: Field's two houses and woodhouse assessed at $1775 in 1861 were reduced to $1300 in 1870 and the same value was given in 1874. Are we justified in thinking that this reflects a deterioration of the two houses' condition, or could it be the vagaries of another assessor's judgement? In 1870 Field's aggregate real estate had jumped to $6950 from $4725 nine years earlier.

---

[83] *Stoughton 1978*, p. 255.

Separate from this, his money at interest is pegged at $2500 instead of 1861's $300, and his invested shares at $587 rather than the earlier year's $300.

Field's holdings can be helpfully compared with those of Timothy Stoughton, situated in Gill to the west of his, just north of Turners Falls. Stoughton was a more prosperous townsman who eventually became Field's enemy and his rival in the fossil sandstone business. In the 1870 assessor's account, his livestock and lesser buildings are much the same as Field's in extent and value, but his single house is pegged at $2000, compared with the latter's $1300 for two structures. He owned much less land, only forty-eight acres; it was divided into a number of small parcels. These must have been in more desirable locations, which helps explain why the aggregate value of his real estate was $10,097, compared with Field's $6950. The difference between the two estates was even greater in 1874 when Stoughton's real estate, swollen by far larger acreage, was valued at $17,000, compared with Field's $7250. The assessor entered $4000 for Field's "Money at interest."

From all these recorded facts, we can deduce something of Field's affairs. His dealings in property, chronicled above, were certainly profitable, although just how much he gained is not known. He was increasingly prosperous by the gross measure of the evaluation of his real estate that steadily rose from $4725 in 1861 to $7250 in 1874, and of the amount of money lent at interest which went from $300 to $4000 over that span. For day-to-day living his out-of-pocket expenses were minimal because he had his own fruits and vegetables, dairy products, pork, firewood, and tobacco. Even if he smoked (it's not known), possession of two tobacco barns means that he raised tobacco for sale. His neighbors Chandler S. Munn and J. B. Marble also raised tobacco, so it was a valued regional crop. In January 1873, Munn sold 3421 pounds for $530.[84] We can also assume that Field sold fruit and vegetables,[85] as well as dairy produce, while his annual listings for heifers and yearlings, with no increase in the number of mature cows, may well mean that he regularly sold dairy cattle.

Field had become a trustee of "the old agricultural society" and usually attended its meetings, but there's no account of his participation in its activities.[86] His one known venture away from his hometown area was in 1859 when he gave the address in Springfield that has already been discussed. Except for the Springfield meeting, there is little record of his travel. In a letter to Jeffries Wyman in 1857 (Appendix E) he proposed going to Boston to attend a meeting of the Boston Society of Natural History. Like any prosperous farmer of his area, he probably also visited cities and villages in western Massachusetts, as well as Hartford, Connecticut, and its vicinity. Although well known locally, Field held no office other than that of a justice of the peace. However, he made public appearances that testified to his prominence. At the dedication of Gill's Town Hall in 1868, he spoke of the fossil sandstone tracks and it was noted that he and Stoughton were collectors of these objects.[87] While no scholar, his knowledge of geology was considerable, so in 1870 he was invited

---

[84] Munn's pocket diary of 1873 and Marble's of 1866 are with the Gill Historical Commission and have been transcribed and annotated by Pamela Shoemaker.

[85] *Springfield Republican*, Aug. 20, 1856, p. 2: "Roswell Field of Gill has ripened peaches thus early."

[86] His obituary in the *Springfield Republican* (Dec. 3, 1882) mentions this society without giving any details.

[87] Gill, *Dedication of the Town Hall*, Feb. 5, 1868.

by the Turners Falls autumn festival to lecture "on the geology of the place."[88] Three years later at the Greenfield fair he exhibited a Canadian Indian birch bark canoe, one of the rare mentions of the curios that he showed visitors to his house.[89]

Beginning in 1872, Field's other public appearances give us access to some of his activity. As we shall see shortly, that year he was made one of the directors of the new Turners Falls Bridge Co. Perhaps this was in recognition of his astuteness in matters of money. In 1877 he lent the town of Gill $1,023, and received interest on it again in 1878.[90] His occasional purchases and sales of land suggests that he was using his money to advantage, but this doesn't mean that he was always successful. In the autumn of 1873 he was one of several who petitioned the Franklin county commissioners "for a road from the Turners Falls bridge to Factory Village."[91]A new road along the river around to Factory Village would serve Field and other residents of Riverside. The Greenfield selectmen opposed this road, further described as "from the west end of the suspension bridge to Fall River," and in December the county commissioners denied the petition.[92]

One of Field's public engagements that provides some measure of his role in town was with a proposed bridge that would span the river from Turners Falls to Gill. Greenfield and Turners Falls were connected by the "White Bridge," a suspension bridge south of the falls opened in 1872. This left Gill without a bridge across the Connecticut. The Turners Falls Bridge Company was established in 1870, at the initiative of the Turners Falls Lumber Company on the Gill side of the river. T. M. Stoughton was an investor in the lumber concern, and one of the principal boosters of the bridge. In a curious transaction on February 1, 1871, Roswell's brother Dwight Field and his son-in-law Frank B. Foster (1845-1909) accepted $800 from Timothy M. Stoughton for land Stoughton had sold to them on July 22, 1870.[93] In February 1872, at the annual meeting in Greenfield of the bridge company, Field joined Stoughton, Peleg Adams, Lyman Barton, and Nathaniel Holmes as directors. Stoughton was elected president, and Field served with Adams on the finance committee.[94] In the same year, the private bridge over the river from Turners Falls to Gill constructed by the newly relocated Russell Cutlery Co. was opened. Although the road leading to it was primitive, locals could use this bridge, and this presumably eased some of the pressure for a new public span. However, in a surprising turnabout, in mid-December 1873, Field, recently one of the bridge company's directors, became a spokesman for Gill residents who opposed the new span. His speech was punctuated repeatedly by laughter at his witty sallies. It's well worth quoting because it's the only document that gives us a good idea of how Field wielded his political intelligence.

---

[88] *Greenfield Gazette and Courier*, Sept. 19, 1870.

[89] Ibid., Sept. 29, 1873

[90] Gill annual town reports of the selectmen for 1877 and 1878. In the latter year he was paid $70 on the town note, implying an annual interest rate of 7%.

[91] *Greenfield Gazette and Courier*, Oct. 6, 1873.

[92] Ibid., Oct. 13 and Dec. 15.

[93] Registry book 279, p. 195, and book 285, p. 89. Dwight died in 1871; Foster was one of Roswell's executors and a beneficiary of his will (see below).

[94] *Greenfield Gazette and Courier*, Feb. 12, 1872.

> Dr. Field now took the floor and proceeded to make one of his witty and caustic speeches. He said he had been employed by Gill people to resist this wild project. He had come down to Greenfield to employ some counsel. [However] all the legal talent in Greenfield that could be had was 'grabbed' by this Riverside Lumber Co. (Laughter.) In fact they had bragged and blustered, and one would think to hear them talk, that they had bought up all the votes in the County. He thought Stoughton & Co. were trying to put an elephant in the little town of Gill. He hoped that the Commissioners would call him to order if he was two [sic] personal; he might say some plain things about his neighbors. (Laughter.) Riverside school district was where he lived. Stoughton had told him the bridge would increase his property $10,000, and hence his opposition must be disinterested. [. . .] The whole scheme was in an egg shell and he proposed to crack it (Laughter.) The Turner Falls Lumber Co. was the yolk, the vital point. [. . .] Round this yolk is Tim Stoughton. (Great laughter.) He spreads around about three-fourths of a mile. He owns 325 acres, and has got all the legal talent in Greenfield to help him operate. Stoughton has some land to sell, but then he does not want to sell till the land is higher. A Gill man wanted to build a machine shop, but Stoughton would not sell land cheap enough so the man gave it up. (Laughter.) [. . .] The Barton family were the white of the egg. (Great laughter.) Here's lawyer Barton, retained on the other side, and there's Leonard Barton, the 'old Bach.' The Bartons and the Stoughtons all hate us like pizen, and I do them. (Sensation and roars of laughter.) Not that I have any grudge against them; O no. (More laughter.)

Field continued with highly personal attacks.

> Lawyer Barton owns one-eighth and 'Old Bach' owns one-half of a large farm, and Deacon Holton is prospective heir when 'Old Bach' dies. (Great laughter.) Lyman G. Barton, who wants to be County Commissioner, plays second fiddle to the rest. (Laughter.) He had not had the pleasure of hearing what Hon. A. C. Parsons, of Northfield (who would go 20 miles any time to show his eloquence and flowing locks) has said at the former meetings, being too ill to attend. Then they obtained the testimony of a feeble old man from Gill, at the Farren House hearing, and he did not hear that, but he was afraid the Commissioners had been imposed upon. He knew there was nothing in this but a Lumber Co. elephant, and Gill did not want to be taxed for such nonsense.

Field concluded his long intervention by showing with considerable irony how small Riverside was and how unlikely to bear the burden of the taxes for the Bridge.

> He invited the Commissioners to visit Gill at the expense of the town, and see what a place Riverside was. But he would tell them that the people could not get on to the bridge. He wanted to show them a Riverside store. He believed there were three. He would take a fair sample. William Johnson sold beer when it was lawful, and when it was not he sold cider, and his neighbors reckoned he sometimes sold something stronger. He also sold peanuts and candy. He kept a saloon and his store was about as good as the rest. He

> wanted to show them [the Commissioners] the first Orthodox church. (Laughter.) It was in the third story of Woods' store. It was a magnificent place. You go up two pairs of stairs and you find a room large enough to hold a dozen settees. [. . .] He could not recollect where the other churches were located, but if there were any he would show them to the Commissioners. (Laughter.)[95]

With such words we can see why some neighbors hated Field "like pisen." His animosity with Stoughton was clearly based on conflicting property interests, and probably also on Stoughton's rivalry in the sale of fossil sandstone slabs. Again in 1874, Field objected to the proposed bridge at a hearing of the legislative committee while of course Stoughton favored it.[96] Opponents in Gill worried about an increase in their taxes to pay for the construction. A year later Field reappeared before the legislative committee to oppose the bridge with "many personal 'hits' which did not fail to bring down the house."[97] Nonetheless, the utility of the bridge was too powerful an argument and Stoughton too effective a proponent (with clout as a major businessman and landholder), so a new suspension bridge, the "Red Bridge," was opened in 1878. It connecting Riverside to the east end of Turners Falls, just upstream from the falls.

Field's enmity with Stoughton brings to light their contrasting lives and careers. For one thing, Stoughton had more political ambition.[98] At the age of twenty-five he became one of the three town selectmen, and served again in 1843 to 1844, and in 1849. He cultivated relations with lawyers and businessmen in Greenfield and Turners Falls, and became an up-and-coming entrepreneurial capitalist. Already by 1859 he was alert to the commercial prospects of selling fossil sandstone slabs and began quarrying in Gill near the site of the future Red Suspension Bridge, presumably on his own land. At 375 acres by the mid 1870s, his property was one of the largest in Gill. He also leased two sandstone footprint sites from Field, one proving worthless because the stone crumbled.[99] By 1871, as the town map shows (fig. 1) he had a fossil quarry on the left bank of the river, that is, south of the stretch of water called "Horse Race," labeled on the map "T.M. Stoughton fossil footprint quarry." According to Ralph Stoughton, O. C. Marsh acquired from Stoughton a large fossil slab in 1868.[100] This was at a time when Field was frequently selling to the Yale paleontologist who was, as we saw, one of Field's principal clients. Given their enmity in the mid-1870s, it was more a *modus vivendi* than a true partnership when Field and Stoughton acted in concert in the sale of fossil stones.

A final flurry of land purchases and sales marked Field's years from 1877 to 1880. On January 4, 1877, he paid $1200 to Simeon Field, his cousin and eventually one of his executors, for thirteen acres along "the Narrows," east of the promontory that led to Lily Pond. Then on May 1, 1879, he further enlarged his land by paying $700 to acquire the mortgage on fifty-eight acres along

---

[95] Ibid., Dec. 22, 1873. See also the *Franklin County Times*, Dec. 19, 1873.

[96] Ibid., March 30, 1874.

[97] Ibid., April 12, 1875.

[98] *Stoughton 1978*, passim.

[99] Ibid., pp. 239-40.

[100] Ibid, p. 240.

the Connecticut in the easternmost portion of Gill.[101] Just how these acquisitions entered into his calculations remains a mystery. The latter piece of land wasn't included in the 125 acres he sold to Stoughton on June 22, 1880, which comprised the westernmost portion of his farm, and which included the Lily Pond quarry.[102] Clearly by then Field was withdrawing into a quiet old age, and willing to let Stoughton take preeminence. In November that year, it was reported that "T. M. Stoughton is having a building 12 by 36 feet erected at his fossil foot-print quarry, Lily Pond, in which to store the numerous valuable slabs that are being obtained."[103] This large shed was robbed, however, so Stoughton put up near his own home a storehouse for the sandstone slabs.[104] Like Field, he maintained a collection of sandstone impressions, one that was considered worthy of mention in 1904, four years before his death.[105]

Well before Field's death, the bird tracks that he and Dexter Marsh had uncovered had been redesignated as dinosaur prints. In 1867, eight years after Field's noteworthy Springfield address, the American paleontologist Cope published a short note saying that most of the Connecticut River bird-like tracks "approached" those of certain dinosaurs.[106] The following year Huxley, the world-famous British biologist, made a more extensive declaration that dinosaurs, not birds, were the track makers, and the ancestors of birds.[107] He had been using the Connecticut River Valley sandstone impressions as vital elements of his analysis. On August 14, 1876, during his only trip to America, he came up to Springfield and the Connecticut River Valley from New Haven, where he was the guest of O. C. Marsh.[108] He wanted to see the sandstone fossils in situ. Marsh introduced him to Stoughton and Field, and in 1879, Field told the historian Samuel Durant that Huxley, "when first shown the foot-prints, called for a piece of chalk, and rapidly sketched the saurian who might have made them."[109] Field was surely thrilled to be in the presence of the most famous paleontologist in the world, who vindicated his claim in 1859 that the bird tracks were made by reptilian animals. With Huxley's declaration, the case was built for recognizing that Theropod dinosaurs were the ancestors of birds. It should be said, however, that well into the twentieth century, despite this agreement, the Lily Pond

---

[101] Registry book 329, p. 218, and book 339, p. 363.

[102] Registry book 349, p. 135.

[103] *Turners Falls Reporter*, Nov. 22, 1882.

[104] *Stoughton 1978*, p. 240.

[105] Francis M. Thompson, *History of Greenfield, 1682-1900, Shire Town of Franklin County Massachusetts* (Greenfield 1904), vol. 2, p. 972. "In this connection, the valuable cabinet of Dr. Roswell Field, late of Gill, willed by him to the Moody school, and the extensive collection of Timothy M. Stoughton, of Riverside, ought to be mentioned."

[106] Cope, "An account of the extinct reptiles which approached the birds," *Proceedings of the Academy of Natural Sciences of Philadelphia* 19 (1867), 234-35.

[107] Huxley, "On the animals which are most nearly intermediate between birds and reptiles," *Annals and Magazine of Natural History* 2 (1868), 66-75.

[108] Adrian Desmond, *Huxley: From Devil's Disciple to Evolution's High Priest* (London 1994), p. 472.

[109] *Durant 1879*, p. 576. Field's neighbor and rival collector, T. M. Stoughton, later recalled Huxley's visit and his sketch of a tall biped: "Quarrying for the footprints; T. M. Stoughton tells of his work with Huxley and Agassiz," *Springfield Sunday Union*, Jan. 1, 1905. Given their rivalry, it's no surprise that Stoughton failed to mention that Field was included in Huxley's visit.

quarry was regularly referred to as the "bird-track quarry," and many collectors and museum curators kept the term.

By 1880, when he sold Lily Pond and most of his land to Stoughton, Field had wound down his long career as the premier supplier of sandstone trace impressions since 1854. He was seventy-eight years old when he died on November 26, 1882. "Mr. Field, who was about 80 years old, was of an eccentric and quaint disposition. He was a bachelor and usually a family lived with him to care for the farm. A visit to him was a genuine treat, for his house was stored with curiosities gathered in a long life of research and investigation. He enjoyed bringing out his treasures and a good many people visited him."[110] Alas! No account by visitors to his "curiosities" has yet come to light. His will gave some idea of what they could have seen, for he bequeathed to the Mount Hermon School for Boys "my entire cabinet consisting of Fossils, Footprints, Shells, Minerals and natural and artificial curiosities."[111] Among the curiosities would have been the Indian relics that many people collected (including Emmons, as we saw), and the Canadian Indian canoe that he had exhibited in 1872. As for his fossils and fossil footprints, we know that on several occasions he sold a "collection" of them to Emmons and to Hitchcock, reestablishing them after each sale. Was his final collection the last of the series he had formed or a representative sampling across his career? From the extent of the fossils and footmarks now in the Northfield Mount Hermon School in Gill, we would guess the latter. It would suit his pride to bequeath a group that included his most famous discoveries.

His will gave Mount Hermon School for Boys $1000 for "replenishing and enlarging" his Cabinet, and $600 for housing it, tokens of the importance he granted his benefaction. The school had been founded only a year before Field's death by Dwight L. Moody (1837-1899), an evangelist, educator and publisher who was famous in America and the United Kingdom, especially for sermons that drew hundreds and sometimes thousands. He came from Field's home town Northfield, and the two likely knew one another before Field made his bequest. In any event, Moody's campaign for the new school—he had founded the nearby Northfield Seminary for Young Ladies in 1879—would have been well publicized and Field may have made his donation either because he admired Moody or because he viewed the school as a convenient institutional home for his collection, perhaps for both reasons.

At the end of his life, Field was certainly wealthy by the standards of his day. His will lists monetary gifts totaling $21,510, including those just mentioned, and the interest on $1000 for a library in Northfield Farms. Gifts to individuals, mostly relatives, included $3000 each to his half-siblings Obed Morgan Jr., Elijah S. Morgan, and Jerusha A. Marble, and $1000 each to five members of the Morgan and Marble families. Lesser sums were designated for nine other individuals, including three members of the Gilbert family in Northfield, and Henry Park who worked for Field. Two-thirds of his real estate in Gill was bequeathed to his half-sister Mary E. Morgan, and the remaining one-third to his niece Eugenia M. Foster and her husband Frank B. Foster; she was the daughter of his brother Dwight. Roswell willed only ten dollars to Eugenia's brother Albert A. Field,

---

[110] *Springfield Republican*, Dec. 3, 1882, p. 3.

[111] Field's will was filed in Gill's Probate Office on Dec. 5, 1882 (vol. 53, p. 124). He named Lyman Gilbert, Obed Morgan, Jr., and Frank B. Foster as his executors. See Ed Gregory, *The Roswell Field Collection of Fossil Footmarks in Residence at the Campus of Northfield-Mount Hermon School, Gill, Massachusetts* (privately printed, 2009).

perhaps implying a lack of closeness. In 1890, Frank and Eugenia are recorded in the town's tax lists as having a working farm of fifty acres. Curiously, Roswell's will makes no mention of land in Northfield—only Gill real estate is mentioned—although he had bought a total of seventy-nine acres there in 1868 and 1874 (see above), and there's no record of its sale or disposition.

9. Roswell Field's tombstone, 1882-83.
Northfield Farms Cemetery. Ed Gregory image.

Conclusion: Roswell Field and Dexter Marsh

Looking back upon Field's life, we are puzzled to explain the curious parallels with Dexter Marsh.[112] There are so many likenesses that they need to be put side by side, but they don't closely mirror one another. Both were small-town men who educated themselves in geology and paleontology. Their contemporaries compared each with the Glasgow geologist Hugh Miller, famed for his working-class beginnings as a stonemason. They not only dug up sandstone impressions, they

[112] See *Dexter Marsh 2013*.

also knew enough to be the first to identify some of the creatures who made them. Each was praised by scientific clients for acute observations and significant contributions to geology and paleontology. However, by selling specimens to more qualified men like Deane, Hitchcock, and Warren who published and interpreted their findings, they disappeared beneath their sandstone prints and became lost to history. Several of Marsh's scientific clients (Deane, Hitchcock, Shepard, Emmons, Warren, Redfield) turned to Field after his death, so they were linked in this fashion. Each man put together collections of the fossils and sandstone tracks that were treasured by the scientific world (and which nurtured their incomes), accompanied by rare minerals, shells, and "curiosities." Marsh's objects were detailed in the auction of his estate—Indian relics, stuffed birds, boa skins, early copper coins—but Field's "natural and artificial curiosities" were not specified. Marsh's ambition was the greater because he made his collection into a veritable museum that drew many hundreds of visitors. Field had no such public outlet, and merely displayed his objects to those who visited his home.

Although the lives of both men are only sparsely documented, enough is known to distinguish them despite their parallel circumstances. Marsh, born in 1806, was actually two years younger than his successor in the fossil sandstone business. Thanks to his journal and his visitors' registers, we know more about him although his journal entries are so short as to reveal rather little. He was literally poor in early life, and used his hands to earn a living as a laborer, gardener, and janitor. Even after he opened his museum and enjoyed a widespread acquaintance among geologists, he delighted in using gunpowder to gain access to buried strata. He had two fruitful marriages (his first wife died young) and several children.

Field's youthful years are a stark mystery. He had enough money at age thirty-eight to buy a large strip of land along the Connecticut River in Gill, and thereafter was known as a gentleman and farmer whose preoccupations can only lightly be sketched in. Unlike Marsh, who lived in the center of the busy village of Greenfield, he resided in a thinly populated rural countryside. A bachelor, he had no wife or children to involve him in Marsh's give-and-take with neighboring families. Two of Marsh's neighbors wrote biographies of him, providing characterizations that are lacking for Field. By comparison with his predecessor, Field was a middle-class farmer. He bought and sold property, and lent money at interest. There's no evidence of how much he worked by hand, although his pride in discovering rare fossil prints lets us assume that he explored quarries and likely sites with tools in hand. On farm and in the quarries, however, he hired workers and presented himself as a gentleman farmer and business man. Perhaps because he was fifty years old when he began selling sandstone impressions, and because at first he lacked Marsh's widespread acquaintance among collectors, he was far more aggressive in cultivating clients. He wrote to several with whom he had had no prior contact, and repeatedly approached the Boston Society of Natural Sciences with specimens for sale.

Marsh and Field each left one publication that gives a bit of luster to an otherwise recessive life. In 1848 Silliman's journal printed a short piece by Marsh about a new quarry he had recently found along the Connecticut River near the mouth of Fall River.[113] His description of this discovery shows just how careful he was in analyzing the sandstone impressions. Field's Springfield address of 1859, we saw, had much greater ambition. He published the forward-looking idea that the supposed bird tracks were actually made by reptiles. This linked him closely with Deane and Hitchcock, and showed that he had distinctive powers of reasoning. He surely would have been proud when he read

---

[113] "Fossil footprints, by Dexter Marsh," *AJS*, n.s. 6 (Nov. 1848): 272-74.

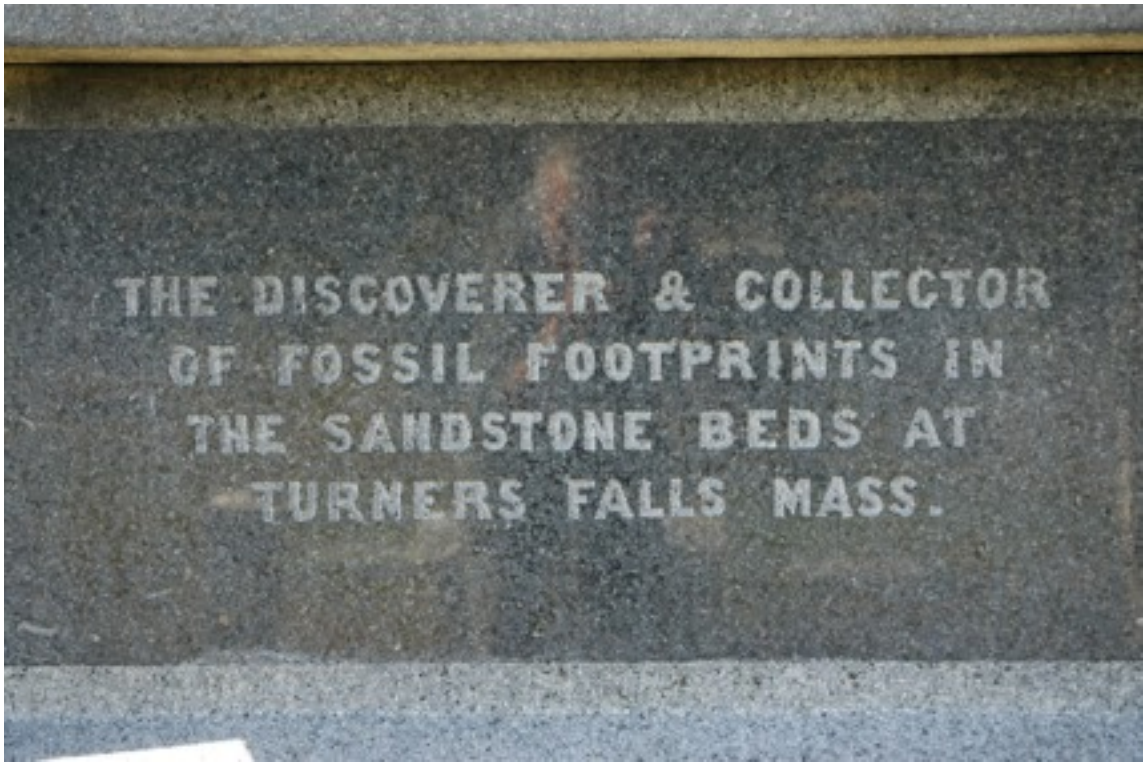
praise for his contributions to geology by several who were qualified to judge him, like J. C. Warren: “You have already done much and will, I hope, be able to do more with advantage to yourself and to science” (May 4, 1855).

Field’s self-importance has a permanent memorial in the form of the oversized tombstone (fig. 9) that marks his grave in the Northfield Farms Cemetery. It’s a striking contrast with Marsh’s plain stone in the Greenfield Cemetery (fig. 10).

Dexter Marsh’s tombstone, Federal Street Cemetery, Greenfield. Ed Gregory image.

In his will Field allocated the huge sum of $2000 for his monument plus $400 for expenses, to Lyman Gilbert, Simeon A. Field, and Samuel G. Pratt. The design was to be theirs, but the tombstone must bear the inscription “There is no God, but God, and Christ is his Prophet.” It’s incised on the north side of the monument. The three men decided to add an inscription that honored Field’s most notable accomplishment. On the south side one reads (fig. 11) “DISCOVERER & COLLECTOR OF FOSSIL FOOTPRINTS IN THE SANDSTONE BEDS AT TURNERS FALLS MASS.” The extravagant monument in Quincy marble and granite rises high above neighboring tombs and its costly materials cry out for contrast with their humble stones.

11. Inscription on Field's tomb. Ed Gregory image.



Bibliography

Deane 1861 James Deane, *Ichnographs from the Sandstone of Connecticut river*. Boston, Little, Brown, 1861. Edited by Henry I. Bowditch and Thomas T. Bouvé

Dexter Marsh 2013 Robert L. Herbert, with the collaboration of Sarah L. Doyle, *The Dinosaur Tracks of Dexter Marsh: Greenfield's Lost Museum.* Mount Holyoke College online publication, 2013.

Durant 1879 Samuel W. Durant, "History of Franklin County, Massachusetts," in vol. 2, pp. 565-793, *History of the Connecticut Valley in Massachusetts*. Philadelphia, 2 vols., L. H. Everts and Co., 1879.

Hitchcock-Silliman 2012 Robert L. Herbert, trans. and ed., *The Complete Correspondence of Edward Hitchcock and Benjamin Silliman, 1817-1863, The American Journal of Science and the Rise of American Geology*. Amherst College online publication, 2012.

Hitchcock 1848 E. Hitchcock, "The Fossil footmarks of the United States and the animals that made them," *Memoirs of the American Academy of Arts and Sciences*, 1848, n.s., vol. 3: 129-256. Also separately published.

Hitchcock 1858 E. Hitchcock, *Ichnology of New England. A Report on the Sandstone of the Connecticut Valley, Especially its Fossil Footmarks, Made to the Government of the Commonwealth of Massachusetts.* Boston 1858.

Hitchcock AJS 1863 E. Hitchcock, "The fossil footmarks of the Connecticut valley," *AJS*, n.s. 36, 106 (Nov. 1863): 46-57.

Hitchcock 1863 E. Hitchcock, *Reminiscences of Amherst College*. Northampton 1863.

Stoughton 1978 Ralph M. Stoughton, *History of the Town of Gill. Franklin County, Massachusetts, 1793-1943*. Greenfield 1978.

Warren 1854 John Collins Warren, *Remarks on Some Fossil Impressions in the Sandstone Rocks of Connecticut River*. Boston 1854. Originally read before the Boston Society of Natural History.

Appendix A: Field's genealogy

Elizabeth Jennings (1792-1857)
April 11, 1804, birth of Roswell (d. 1882) in Warwick
Jan. 21, 1806, married Hollis Field (1778-1812)
June 19, 1810, birth of Dwight (d. 1871)
Sept. 8, 1832, Dwight married Mary Allen (1811-1901). 2 children, Albert and Eugenia
1812, Elizabeth Jennings Field married Obed Morgan (1792-1888)
1814, birth of Jerusha Ann Morgan (d. 1888), married Joseph B. Marble (3 children)
1816, birth of Elsworth Morgan (d. 1842)
1819, birth of Obed Morgan Jr. (d. 1909), married Clarissa Purple (3 children)
1822, birth of Elijah Stratton Morgan (d. 1915)
1826, birth of Mary Elizabeth Morgan (d. 1899)
Rufus Field (1780-1858), brother of Hollis
1813, birth of Rufus Jr. (d. 1847)

Appendix B: Field's 1859 scientific address

"Ornithichnites, by Roswell Field, of Greenfield, Mass.," *Proceedings of the American Association for the Advancement of Science, 13th meeting,* Springfield, Aug. 1859 (Cambridge 1860), pp. 337-40.

When fossil foot-prints were first discovered in the sandstone of the Connecticut valley, it was indeed thought to be a great discovery; but that the tracks thus found were made by birds was received by men of scientific attainments with great distrust and skepticism. That they were tracks made by once living animals there could be no doubt, but that they were ornithichnites was very much doubted. And it was not until after my esteemed friend, Dr. Hitchcock, had spent much time in comparing, describing, and in distributing specimens, that the scientific public became satisfied that they were the tracks of once living birds. The great and only proof that they were the tracks of birds, is the organization of the fossil foot, in the number of toes, and the number of joints, or labial expansions in the toes; in this they are supposed to agree, and probably do, with living types. This, with alternate steps of right and left foot, is all the evidence we have that they were the tracks of birds. Living in the immediate vicinity of Turner's Falls, the locality that has furnished the most numerous, and beyond all comparison the most beautiful specimens, my attention was drawn, years ago, to this particular subject, and it was from my farm that the late Dexter Marsh obtained his finest specimens.

And it was in the vicinity of these falls where my much lamented friend Dr. Deane, found 'new walks in an old field;"[114] where our most barren and rocky wastes were to him a garden of

[114] Hugh Miller, *The Old Red Sandstone, or New Walks in an Old Field* (Edinburgh 1841). Miller was a self-taught Scotch geologist who had often been compared in the previous decade with Dexter Marsh.

delight. It was here I witnessed their labors with pleasure, and in a more obscure way have followed in their footsteps.

I think I may safely say that I have uncovered more foot-prints and found more new species and a greater variety of tracks than any other man; I think I might also say, with propriety, than all others that have preceded me; and if I have learnt anything on this subject I have learnt it at the quarries. It is there, and there only, I have studied the history of Liassic days; and the more I have studied, the greater have been my doubts as to the ornithard character of any of the tracks which these tables of stone contain. I have seen thousands of tracks that others have not seen. With injudicious blasting, and the carelessness of workmen, many choice specimens have been broken and lost; other slabs, literally covered with foot-prints, have been spoilt by sun-cracks, the stratum over which the animal moved being either too hard or too soft to receive or retain good impressions. All such are rejected and lost to the student at the quarries. I have no new theory to advance, and none to build up, but if I can rightly decipher these fossil inscriptions, impressed on the tombstones of a race of animals that have long since ceased to exist, they should all of them be classed as Reptilia.

If I have not studied this subject in vain, they were all quadrupedal. That they usually walked on two feet I admit, and that they could as readily walk on four when necessary, is equally true. In proof of this we find tracks as perfect as if made in plastic wax, which to all appearance, as to the number of toes and the labial expansions in the toes, perfectly agree with those of living birds; and still we know that these fossil tracks were made by quadrupeds, by the impression made by their forward feet. And in other cases, where the animals sank deep into the muddy stratum over which they moved, we know that they usually dragged their tails in the mud, leaving a groove ploughed up, from one half to an inch in width; this groove is not always found on the surface where the foot rested, the weight of the animal causing the foot to sink through the yielding stratum, while the tail dragged on the one above. And this we know was the case with animals that were surely quadrupeds; they show no such appendage as a tail only when the foot sunk deeply in the plastic clay, and the proof that we once relied upon to prove them the tracks of birds, can be relied upon no longer. The fact that there were quadrupeds in those sandstone days, which had hind feet perfectly agreeing with the stony bird tracks, throws great doubt and distrust on the opinion that there were any true birds in this age of reptiles. If there were birds, they were apterous and naked, for we should naturally suppose that, where so large a number of birds congregated upon the muddy banks, that in dressing and pluming their feathers some of them must have been trodden underfoot; but the impressions of feathers have never been found, though we find the smallest leaves of vegetables, and the pathway and tracks of annelids and insects, some of them so small that they can hardly be seen with the naked eye. Even the Otozoum, whose giant-like track measures twenty inches in length, was once supposed to have been a biped reptile. Later discoveries have proved it to have been four-footed. And other new discoveries have reduced the number of birds and added largely to the quadrupeds; where I verily believe is the proper place to class them all. The smoothness of the bottom of the foot in our fossil tracks agrees better with some species of batrachians that now live in and about the water than they do with such animals as live on the land. Had birds indeed existed at this early geological period, when the sandstone of the Connecticut valley was depositing, there had indeed been a woful [sic] gap in their history from then up to near the historical period; and the die from which they were struck, at their creation, was not broken, but a new edition struck off in these latter days. The work

perhaps may have been revised, but not enlarged; that is, as to the size of the animal. I know that many eminent men and men of great scientific attainments—men who have spent much time and labor for many years in the investigation of this subject, have come to different conclusions, and it is not for me to say that they conclusions are wrong; I will only add, that when fossil tracks were first discovered, there was so little known of the formation of the feet of fossil or of living animals, and particularly of their foot-prints, that it is possible the first discoverers might have been mistaken as to their ornithard character. The study of these fossils is very interesting to the geologist and naturalist, and there is no locality in the known world where they are found in such an abundance, and beyond all comparison in such perfection, as at Turner's Falls, the northern terminus of the sandstone beds. Very few, indeed, have any conception of the marvelous perfection of these fossil inscriptions, as of the multitude of once living creatures, whose existence they commemorate. During the vast sandstone deposition countless individuals have inscribed upon the shores whereon they congregated their instructive history.

[Field's article was published with slight revisions in the *AJS,* n.s. 29, 57 (1860): 361-63, with a note from the editors: "Mr Field is a plain farmer, who makes no claim to be an authority in science but, like Hugh Miller, has hammered his geology out of the rocks on which he lives. He is well known as one of the most successful collectors of the foot-marks of the Connecticut sandstone, and his testimony as to the impression made on himself of their probable character and origin, has the merit of a conviction making head in an honest mind against all the weight and bias of opposing authorities." Large extracts from the article, with some changes of wording, were published in the *Annual of Scientific Discovery* (Boston, 1860).]

Appendix C: Scientists' letters to Field[115]

Henry I. Bowditch (1808-1892)

Feb. 25, 1855
Dear Sir,

My friend Dr. Bacon of Somerset St., Boston, wants some small specimens of bird and quadruped tracks valued about $10.00. If you feel disposed to correspond with him on the subject you may make a bargain with him.

Dr. Warren has laid your letter to me before the N.H. Society.

Yours,

Henry I. Bowditch

Boston, Nov. 16, 1858
Dear Sir,

My son's vacation commences next Monday & I write to know whether you will be working during the week, and, if so, whether it would be convenient for you to receive him.

---

[115] Except for six letters from J. C. Warren (see below), these letters are among the Field papers, GHC. Punctuation and paragraphing have been added or corrected.

Respectfully yours,
Henry I. Bowditch
Mr. Roswell Field

[No date or heading:]
Dear Sir,
I enclose $15 for the specimen Dr. Deane procured for me. I do not doubt its value but it has cost a little more than I hoped to pay.
If I can aid you in dispensing some of your best specimens at any time I shall be happy to do so.
Yours,
Henry I. Bowditch
P. S. Please send Receipt

James Deane, M.D. (1801-1858)

Envelope:
"To Roswell Field, Esq.
Greenfield Fac. Village"

Greenf., 30 June / 56
D. Sir,
Mr. Davis says he has not the least objection to you hammering away upon the rocks to your heart's content. On the contrary, should be most happy, if it will [#] the cause of science.
Truly yours,
J. Deane

Ebenezer Emmons (1799-1863)

Albany, Sept. 4 1856
My Dear Sir,
I observed for the first time yesterday that I had left out of my package that Indian relict. I laid it out but as it was out of sight when I made up the package rather hastily, this was forgotten. I though I had omitted something but couldn't imagine what. I did not think it will be worth the expences to forward it now by Express, but will send it hereafter with something also or bring it myself. I want to find all your fishes in order to make out perfect descriptions of all their parts. Save them all for me.
Yours truly,
E. Emmons

Albany, Jan 18 57

Mr. Roswell Field,

Sir,

I have been almost on the point of starting for Greenfield but upon the whole I concluded to wait till I can hear whether you have anything new or any fish etc.

I mean to visit you if possible before I go south again & I want much to see the Dr. [Deane] I have still the Indian relicts (sic). I have published my report on parts of the Geology of N. Carolina another part of my American Geology with about 200 new figures of fossils.

Write me at Williamstown as I go there for a month next week.

Give my respects to Dr. Deane & Believe me yours,

E. Emmons

Albany 11, 57 [sic]
My Dear Sir,

I have been on the point of writing to you for some time. I am glad you have been so successful in finding tracks. I don't know what to say but I want them yet fear the cost. Don't dispose of them till you hear from me then give me the refusal at as low a price as you can afford.

But I want more particularly all your fish remaining. Don't sell them till you have given me a chance.

In the morning I go to Montreal. I shall be absent a few days. I want much to go over to Greenfield, but can't promise now.

If I don't go, I will send you the Books & Indian relicts.

Give my best regards to Dr. Dean, and believe me yours truly forever,

E. Emmons

15 Sept
My Dear Sir,

I cannot procure as yet the vol. of prints you wished. I send the only copy of my Rept. of N.C. I have [##] all the fish.

[#] yours,

E. Emmons

Write me at N.C. [#] Raleigh.

My best regards to Dr. Deane. I can't get over till spring. My determination, respecting the age of your sandstones the Virginia & N. Carolina are confirmed & Sir. C. Lyell has changed his views & has announced the fact in the German Edition of his Elements published at Freyburgh. My Dromatherium [?] is the Oldest mammal yet known.

Oliver Payson Hubbard (1809-1900), excerpts

Dartmouth College, Hanover, Mar. 5, '55
Mr. Roswell Field,
Dear Sir,

I have your letter of the 27th ult. concerning your collection of fossil footprints of Birds & Reptiles which you offer for sale at $500.

I need not say we should very much like to possess your collection & if we can do, it must be accomplished by the means of donations from our friends. I should like to hear from you with a more particular description of the size of the larger specimens—size of the tracks &c, number & size & stride of tracks on a slab. Perhaps you will have the goodness to send me Dr. Dean's [sic] opinion of them as to their comparison with the better specimens procured by the late Mr. Marsh & which [are] at Amherst & the Boston Nat. His. Society.

I shall be desirous to attempt the acquisition of the collection if I can have some specific data [sic] & time for correspondence with our friends.

In hope of hearing from you again,

I remain Respectfully Yrs

O.P. Hubbard

Hanover Ap. 4 '55

Dear Sir

I have your letter of March 27^{o} but have not been able to reply till now. From your account of the tracks I am very desirous to possess some of the best specimens.

It is impossible for us to compete with Boston money. We have in hand no funds which we can use at short notice for a purchase like this. When such an occasion arises, we must seek funds of our friends & this takes time.

From your letter I judge that we cannot act soon enough to meet your wishes. I must be consoled with the belief that as quarrying goes on the supply of tracks will continue & at some future time we shall be able to obtain of yourself or of some other collector, such as we can afford. I regret much I am not now able to do as I would.

Respectfully Yrs

O. P. Hubbard

Isaac Lea (1792-1886)

Envelope "Mr. Roswell Field, near Greenfield, Mass., care of James Deane M.D."

396 Locust St. Sep 15, 1855.

Dear Sir, I duly rec^{d} your letter of 31st ult & the boxes all arrived a few days since. The specimens were packed with great care & all came perfectly safe except a single small thin one the fracture of which was not of the least consequence. I am very much pleased with the selection & I think you & Dr. Deane have both done me full justice in the selection. There is but one thing which seems to be omitted, perhaps they do not occur with you. I mean the *coprolites*. If you have any I should like at a future time to have some so as to know them of your formation.

The specimens for the Academy of Nat. Scie. was presented a few evenings since at a meeting in your name, & its beauty a perfection attracted the members present. We feel much obliged by this donation.

You mention you desired to have books to aid you, but I really do not know of anything with [?] immediate subject of the fossils of your locality except the memoirs of Dr. Deane & Prof. Hitchcock. I will send you a copy of my folio ed^{n} of "Foot Marks" & some other little matters with great pleasure. I sent you a small pamphlet "New Mollusk" from the Red Sandstone of Pottsville, by mail.

I enclose you my check for one hundred dollars on the Western Bank of this city which I presume your bank at Greenfield will receive for you.

I shall enclose this letter to D. Deane's care.

I am very anxious to get the Mussels of the Connecticut above & below the Falls. I am desirous of comparing them with those of the rivers East & West which I have. Could you oblige me if the water is pretty low? If taken alive the soft part can be easily removed by hot water being poured over them. I am anxious to have the different species, *old* & *young*. The small ones are very important to have. Your attention to this would oblige me. The shells ought to be as perfect as can be had.

I am very truly yours, Isaac Lea

Dromatherius is the Oldest Mammal yet known.

Fitch Edward Oliver (1819-1892)

Bowdoin St. Boston, Aug. 28, 1858

Dear Sir,

At the last regular meeting of the "Boston Society for Medical Improvement," two thigh bones (one exhibiting marks of previous fracture and subsequent union) and a skull, supposed to be portions of the skeleton of an Indian recently found in Deerfield, were shewn by Dr. Bowditch, who also stated that they had been presented by Mr. Roswell Field for the Society's Cabinet. Whereupon it was voted

That the thanks of the Society be presented to Mr. Field for these interesting and valuable specimens.

I have the pleasure to be

your obt servant

Fitch Edward Oliver

Secy of Bost. Soc. Med. Imp.

Roswell Field Esq.

William C. Redfield (1789-1857)

53 West 19th St., New York, July 25, 1856

Roswell Field Esq.

Dear Sir,

Yours of 9th inst. came during my absence in the western states. I am pleased to learn that fossil fishes have been found at Turners falls, and am anxious to know whether the species differ from those found at Sunderland and Chicopee. I would gladly refer you to some works affording the

elements of the science of these fossils, but know of none, except the great work of Agassiz, in French, which is hardly available.[116] I could probably decide the question of new species by inspection, and if you can bring samples of your species to the meeting at Albany, which opens 20th of August, I shall be pleased to examine them.

With my best regards to Dr. Deane I am dear Sir

truly yours

Wm. C. Redfield

P.S. Should you be coming to the city at any time the examination and comparison could better be made in my cabinet.

Yours, W.C.R.

53 West 19th St.
New York Jan. 14th 1857
Mr. Roswell Field,
Dear Sir,

Yours of 7th inst. reached me yesterday. I should like to see the fishes you have obtained since I was with you, but it would not answer for me to take a whole box or more, at your prices, as there might be few that would be desirable for my collection while the others might be as desirable as any, to some other person. My object in the suggestion was to increase the extent of my purchases from you, so far as practicable, and at the same time to help you to some sales here, to persons who would not go to Greenfield for this object, nor buy specimens without seeing them. If you send a box, on any terms, I shall use my best judgment, and try to do you justice.

I have never seen a fish from our red sandstone which had a truly homocercal tail. The larger drawing you have sent me you have marked as homocerque (?), but this is likely to be owing to the obscurity of the specimen. The smaller one is probably the Inchypterus *tenuiceps* of Agassiz, but I cannot decide without seeing it.

It would afford me pleasure to visit your place again, but the cold weather and the expense are serious objections.

The fossil fishes of your rocks all belong to the Order of Ganoides, according to the classifications of Agassiz, in his great work. There is one living genus of this order in our waters: known as the *bony pike*, or the *gar pike*.* I send you enclosed part of a row of scales of one of the species from which part of the inner skin is scraped off. The scales of all the fishes of this order have a hard enamelled [sic] surface and are of a rhomboidal shape, [crosshatch square on one tip], varying in different parts of the body. Those near the tail are the most elongated. [parallogram sketch].

I am now consulting on measures for bringing out, with the aid of Prof. Agassiz, a full description of these fossil fishes, with drawings.

Yours truly,

Wm. C. Redfield

---

[116] Agassiz, *Histoire Naturelle des Poissons d'Eau Douce de l'Europe Centrale* (Neuchatel 1839-1842).

*These gar-pikes have tails which are just about as heterocervical as those of our fossils: while nearly all our living fishes have homocervical tails.[117]

Charles Upham Shepard (1804-1886)

N. Haven, July 15, 1855
Mr. Field,

My dear sir, Your letter has been forwarded to me here from Amherst. I am well satisfied with its contents. Please reserve the three specimens for me. I will pay you the difference, i.e. $15 either in minerals or in money to your satisfaction. Dr. Deane can have the use of them as long as he wishes. Perhaps however, I shall be able to have them by Oct^{r} 1st, as that is the time when I close up my cases for the winter.

Yours very truly,
Ch. U. Shepard

Charleston Dec. 11, 1855
Dr. Field
Dear Sir,

Dear Sir, Dr. Hitchcock has informed me that you have brot [sic] to light a new slab of foot-prints similar to those you recently sold him: & that you have been good enough to retain the specimen for a few days for my decision respecting its purchase. I am sorry to say that I am unable to avail of the opportunity proffered. I have already purchased so extensively this year that I have no surplus means at command.

Should you be able to lay aside a dozen or two, hand specimens (i.e. about the size of this sheet of note paper [7 x 9 in.]) of single foot-prints & rain-drops, & send them down to me at Amherst next May, I may be able to select a few of them, with which to complete my series. I have not much room for these specimens; but a few perfectly fresh, neatly shaped, rather thin (& therefore not heavy) specimens will always be acceptable, provided the prices are moderate.

Please remember that if the specimen is badly shaped, or scratched or otherwise marred, it will not be attractive to me.

Please write me soon, if you have any thing of this character—how many such specimens & at what prices—directed to me here. I expect to be at New Haven in May & for a part of the month at Amherst.

Yours truly, C U Shepard

Springfield, July 5, 1856 [on stationery of Massasoit House, Springfield, with bill of far for Friday, July 4, 1856.]
Mr field

Dear Sir

---

[117] Heterocercal tail: vertebrae extend into upper lobe; homocercal: vertebrae end near middle of the base of tail with upper and lower lobes being nearly symmetrical.

I was sorry not to find you at home when I called on the 3rd. I indicated three tracks among your collection which would serve to render my own more complete, provided you should be willing to transfer them to me. I marked two of them, & the 3rd was a large, single one in your newer building. It is not trimmed with exact symmetry—the sides being somewhat broken in the process.

The two marked with chalk stand under your show case. One is a long one & stands in the corner of the room—its shape is this [sketch of oblong rectangle with feathery scribble in center].

I have selected a box with about 20 good mineral specimens which I have directed to be forwarded to you. I suppose the are worth about $45. You can keep them, & send me what you please.

Yrs. very truly,

Ch Shepard

P.S.: I hope you will get some good fish impressions.

Amherst College, Oct^{r} ll/56

Mr. R. Field

Dear Sir

I have talked with Dr. Hitchcock to-day, about your tracks, & intimated to him that in case he did not want the $50 [#] (to which we referred in our correspondence about a book-exchange) perhaps I might wish to obtain it. He said that he had other specimens of yours, in view, & that in no case was he desirous of that particular one, as he believed he had the same already in his own collection. The way is clear, therefore, if you are disposed to send me a box. Should your specimens fall short of my price for the Encyclopedia, I will wait for the balance until you open the fish locality next year. Dr. H. expects to be in Boston next week.

Yours truly

C U Shepard

Amherst Oct. 16 1856

Mr. Field,

Dear Sir,

The Encyclopedia is Rees' in 36 vols. (I believe) quarto. The price to subscribers I think was $6. per vol. Should you decide on making the exchange of the specimen, I think it more valuable than when we talked about it. I do not object to a higher price. I should call the Encyclopedia $3 the volume. My nephew Mr. Lucius Boltwood, College Librarian, has the keys of my library & would deliver the books to you at any time during my absence on receiving from you the specimen.

In reference to the horned fish, I only meant that I would be glad to purchase, even a fragment, if it showed the horns.

Please write me at New Haven, if you decide upon the exchange.

Wishing you success in your future labors both on tracks & at the fish locality, or as you say, *in the fish-line*,

I remain truly yours,

C U Shepard

John Collins Warren (1778-1856)[118]

Brookline Aug. 6 / 54
Mr. Roswell Field,
Dear Sir,

I send you by mail a copy of a little book on "Fossil Impressions."

I wish to ask you to give me some account of the pieces I had of you, which I will mention in the order of size. No. 1, large ripple marks (which you gave me) I understand. No. 2, small ripple marks with an impression on the opposite side, is this a leaf? No. 3, a blue slate with impressions of worms or phucoids [fucoids], or both? No. 4, a shale with a piece broken off, -- what is this? No. 5, small black marks sometimes in pairs -- may these be vegetable or insect? No. 6, very small specimen, with marks like grains of wheat is, I suppose, leaves of hemlock?

If you will have the goodness to write the best answer you can immediately after my questions I will be greatly obliged to you.

If you should find anything new, please to let me know. What would you take for the large vegetable impression? How have you succeeded with the great slab you were at work on when I was with you?

Please to direct to Dr. John C. Warren, No. 2, Park St., Boston.

Boston Sept. 28/54
Dear Sir,

I received this morning the box you sent, all safe, am much pleased with them, and thankful to you for sending so promptly.

The medal [sic] rulings I have succeeded in obtaining, but as you seem unwilling to go to the expense I shall present them to you for your improvement and pleasure.

The partridge marks and the other specimens you mentioned I should be glad to see, if you can bring them with you. As to the prices, we shall have no difficulty, I will pay you when you come. At present, I do not think of any Geological books—except an address to the Natural History Society—which I could dispose of, but I dare say I shall have some occasionally that I can send you. When you come to town, if you could call and let me know the evening of your arrival, we can arrange matters advantageously for both parties—otherwise there will be hurry and confusion. The book will be delivered to you at the same time with the money.

Very truly
yours,
J. C. Warren

Boston Oct. 21/54
Dear Sir,

---

[118] Warren's letters to Field have been recorded from the originals among the Field papers, GHS, except for six known only from photocopies, those dated Aug. 6 and Dec. 9, 1854, and Jan. 11 and 17, and Feb. 11 and 23, 1856.

I have a series of numbers of Cleveland Scientific Journal which I shall be happy to give you if you will let me know the most convenient way of sending them. I hope you have got the Brontozoum in order, and, that I shall soon see it.

I remain,

very truly yours,
J. C. Warren"

"Boston, Novr. 2 / 54.
Dear Sir,

Sir William Jardine, who published those beautiful plates of fossil impressions I spoke to you of,[119] has sent to this country offering to exchange some of his fossil impressions for some of ours. I thought you might have some impressions that we could purchase and exchange with him. If you have any such be good enough to let me know. It would be important to have the prices, sizes, and kind of animals, extraordinary and expensive impressions would not be desirable for this object. Bird tracks would be the best.

I wrote you week before last that I could send you some pamphlets if you would let me know how to send them.

If your Otozoum is finished I should like to have it here this day week, if possible, and also the larger Brontozoum foot. I have a meeting at my house on that evening.

Your friend
an [sic] servant
J. C. Warren"

"Boston Nov. 7/54
Dear Sir,

I have just received both of your letters, at the same time.

I should not wish the Otozoum to be sent at an increased expense of eight or ten dollars, but would request you to forward it in a proper state and send it safely.

The pamphlets I will send by express to day or tomorrow. As to the other matters, I will communicate with Sir William Jardine or his friends, and let you know the result. This will require time; many months may elapse before we can get answered, but I will do the best I can for you and Sir. William.

I remain, very truly, your friend,
J. C. Warren.

Boston Dec. 9th 1854
Dear Sir,

I have the pleasure to inform you that you are elected a Corresponding Member of the Boston Natural History Society. This election entitles you to attend the meetings, to receive the Proceedings -- it does not open the library, and you are not called upon to pay any assessments. If you will send

---

[119] Jardine, op. cit.

me a note expressing your acceptance, you will in time receive a Diploma or certificate w/ directions. If you should wish to take any particular books out of the library, I can get them for you.

I remain
very truly,
your friend
J. C. Warren

Boston Feby 23, ‘55
Dear Sir,

Yesterday by steamer I received a letter from Sir Wm. Jardine, by which it appears that, he is not inclined to buy specimens, having a great collection, but desirous to obtain—he has however, authorized me to purchase a few on your terms, that is, a dollar a piece. If, therefore, you will put up fifteen or twenty specimens, the best you can afford, and pack them so as to go safely to Liverpool without breakage, I will pay you the price, the package, and transportation to Boston. You cannot be too careful of the package and the address to me should be so arranged as to be removed in order to substitute that of Sir W. J.

The Society of Natural History at their meeting two days since, directed me to inquire particulars as to the valuable specimen you have lately discovered, they would like to know the size of it, the number of impressions, their character, as far as you know, and if possible, to have a sketch on paper, and a cast of some of the impressions.

Wishing you all prosperity,
Your friend &c.
J. C. Warren

Boston March 2, ‘55
Dear Sir,

This morning I received your note and plan. The plan is satisfactory, except that the size of the track is not specified. The cast of one or more of them would be useful.

I think there will be no objection to your sending the quadruped tracks to Sir William in exchange for fossil impressions of coal plants. The box may be sent to the store of Wm. Appleton Esq., No. 36 Lewis’s Wharf.

Your friend and servant,
J. C. Warren

Boston March 15, ‘55
Dear Sir,

Last night I received the three pieces you sent me with your note, and understand, the box for Sir W. J. is at Mr. Wm. Appleton’s store, whence it will be embarked in the first ship for Liverpool. I shall write letters to Sir Wm. Jardine, who lives in Scotland, to send for the box, and to Baring, Brs. & Co. to deliver and pay expenses.

Herewith, I enclose you a check for twenty dollars. I shall not fail to notice to Sir Wm. your liberality in sending an overplus, and shall request him to send you such vegetable impressions of the coal formation, as he thinks a proper return.

Your friend,
J. C. Warren

Boston March 23, ‘55
Dear Sir,

A meeting of the NHS took place evening before last. I showed them your plan, specimen, and gave them every information in my power. Mr. Bouve, who is on the Committee with me, thinks he may be able to go to Greenfield in a week or two, but there is, I think, much uncertainty about it. I shall do every thing I can to forward the matter.

The box for Sir William is safe in the store of the Hon. Wm. Appleton, M.C., and will go by the first ship.

I remain,
very faithfully,
your friend,
J. C. Warren

Boston April 5, ‘55
Dear Sir,

There was a meeting of the Natural History Society last evening, at which, I brought forward your plan. The gentlemen did not appear satisfied to make an offer without seeing the slab – they have therefore, authorized me to say that, if you will send the slab here, they will be at all the expense and risk of transportation. If it come here they will, I think, be unwilling to let it go back.

Your box was embarked in the great ship Cathedral for Liverpool – I wrote two letters by different routes to the house of Barings in Liverpool, and sent a letter to Sir Wm. Jardine, mentioning the particulars of the twenty specimens purchased, the five given, and the coal specimens you hoped to receive in return.

I remain
very truly yours,

Boston April 11, 55
Dear Sir,

I received your letter yesterday, and am glad you are disposed to send the slab. I shall do all in my power to make it turn to your advantage.

The specimen you propose to send to me will be very interesting, and I shall undoubtably show it to the society. I shall always be glad to receive any little specimens or fragments you do not want, with your remarks, which are ingenious and always to be respected as those of a practical man.

Very truly,
your friend,
J. C. Warren

P.S. At the moment of writing the last line I received your specimen. It is a very pretty thing indeed, and comes just in season for a considerable meeting of scientific gentlemen at Mr. Phillips’s tomorrow evening, and also for the Society next Wednesday. I shall not fail to mention your name and your remarks.

May 4, ‘55
2 Park St.
Dear Sir,

A few days ago I received your note, and yesterday morning the specimen. I have not much examined it yet, but from what I have seen of it, this plate besides being a fine specimen of Herpetozoa [amphibious reptile or lizard], presents other impressions worthy of investigations. I hope you will continue to pursue the subject perseveringly. You have already done much and will, I hope, be able to do more with advantage to yourself and to science. I will endeavor to send you a paper containing the proceedings of the NHS last Wednesday.

With much regard,
I remain,
your friend & servant,
J. C. Warren

Boston July 13th 1855
Dear Sir,

In reply to your favor of the 9th inst., I have not seen the number of the Traveller,[120] in which the reception of your last piece was noticed, or I should have sent it. The reports are issued at distant and irregular periods. The following document was drawn up by me for the Society and in due time it will be published.

‘The President laid before the Society a slab sent by Mr. Field about two feet square and an inch thick. This slab displayed interesting markings on both its surfaces, one of these was covered with three different kinds, the first kind consisted of striae like those from sweeping the whole surface with a broom, or a mass of sea-weed; the second consists of two sets of tracks, one of them very strongly expressed, the other faintly, which might have been made by the progression of a crustaceous animal, a crab, these tracks were composed of oblong eminences and depressions, the whole extent of which was about two feet in length by an inch and a half in width; they might have been made by seaweed or the passage of fishes. The third set of appearances are large, faintly expressed eminences, probably half obliterated ripple marks. Besides these there are two or three sets of deep impressions in pairs, apparently of some animal, and long elevated lines probably of mud cracks, so called. No bird tracks are visible on this surface.

‘The other surface is less regular, but smooth, bright and shining. The principal impression or appearance consists of an excavation about fifteen inches long and an inch wide dividing or bifurcating into two hanches. [sic] This has been suggested by Mr. Field on the ground of an idea of Mr. Lea, the distinguished geologist of Philadelphia, to be the trace of the mollusc, or shell-fish, [#] in its passage across the strand. There are also various rounded eminences, some of them an inch in diameter, which may have been fossil fruits, some excavations apparently made by organic substances, and a number of tracks of annelids. No bird-tracks are discoverable on this surface.

‘This stone is dense from being well charged with oxide of iron, and contains objects of interest, which would well bear another examination.’

---

[120] *Daily Evening Traveller*, Boston, March 27, 1855.

As to the sale of your fossils, Cambridge is as supplied as they wish to be probably. I will keep the matter in mind and embrace any opportunity which may offer to aid you. The Natural History Society did not purchase the Portsmouth fossils. We are dispersed in the country and I have not seen Mr. Bouvé, but I fear there is no great prospect of his travelling, his family are ill and death has been among them; for myself it is very uncertain. My banker in Liverpool writes me that your case has arrived and is in the hands of Sir William Jardine at Edinburgh. Furthermore, that he has paid the shipping charges and cost of transportation. The price of the fossils he has not paid, nor has he acknowledged the reception or taken any other notice of my letter. I suppose he will write some time or other, and we shall then probably find out why he has not paid.

The Society do not perform much during the summer, and I, passing my nights out of town, do not attend the regular meetings. The fossil bones collected in Maine, which are those of a whale, will be exhibited to the Society at the next meeting. I have offered to give the Society a complete skeleton of a whale, which is very desirable, but I am afraid they cannot suspend it.

I shall always be happy to hear from you, and glad to receive any thing you think worth sending. In the last number of Silliman's Journal there is an account of a fossil fern, Qathropteris, from the banks of the Connecticut river.

I remain very truly
Your Friend
J. C. Warren

Brookline Aug 22 '55
Dear sir,

I received your letter this day, informing me you would send the quadruped specimen on the 29th. I will pay every attention to it, and do the best I can.

Mr. Lea is an excellent person, you may have perfect confidence in his word.

As to Sir Wm. Jardine, I have received no letter from him acknowledging the valuable specimens I sent for exchange before yours, nor, of your specimens, twenty-five in number; and, although I wrote him I had paid you the twenty dollars he has declined paying it back to my Banker – now, he writes to you that, he is going to send you specimens through me, whom he owes in money and fossils – perhaps he means to send fossils to me in the box to you. You will readily see that I can have nothing more to do with him nor for him, until all is explained. In truth, I have had more trouble in trying to oblige him than in making my whole collection from President Hitchcock, Dr. Deane and you.

I should be happy to receive any thing you meet, and ready to compensate you in such form as you wish.

Very truly
yours,
J. C. Warren

P.S. It occurs to me that Sir. W. J. thinks that the whole business lies between him and you, and that he will send you fossils in exchange for what I sent him and also for the twenty dollars.

Brookline, Aug. 27, '55

Dear Sir,

By the letter of Sir Wm. Jardine, that you have had the goodness to send me, I perceive Sir. Wm. Jardine intends to do what is right and honorable. I can therefore see no objection to your making the collection requested by him. I would not however send them away until you have seen what his returns are. I should be very glad to aid you in forwarding any box or boxes you may wish to send. You can direct your box to the Hon. Wm. Appleton number twenty three Lewis's Wharf, with a letter to me advising me of the same. The address of Sir William is, "Sir W. Jardine, Bart. Jardine Hall, Lockerby, Scotland."

I hope to have the pleasure of hearing from you on the 29th.

I remain,

respectfully yours,

J. C. Warren

Brookline Sept 3, '55

Dear Sir,

Your valuable slab was received at the time you mentioned, unhurt, and placed in security. I shall examine it as soon as possible. It remains in the box as you suggested.

Is there any thing on the back?

I have received nothing from Sir Wm. Jardine was yet but shall no doubt hear soon.

Yours truly,

J. C. Warren

Brookline Sept 14, '55

Dear Sir,

After examination, I have concluded to take the Quadruped slab on your terms. Dr. Deane, who is a competent judge, thinks the price is not too high and you are of the same opinion. These considerations, also, a desire to encourage your researches, your liberality on various occasions, and the hope of being considered by you in future discoveries have contributed to this conclusion.

It will be desirable to have some further information and I would therefore request you to answer the following queries: First, When and where was this slab first discovered? Second, What was its situation in regards to the rock from which it was removed? Third, What was the character of the stone? Fourth, What are your views and those of Dr. Deane (if you know them) in regard to the quadruped impressions? Fifth, What are the three large tracks in the middle of the slab? Sixth, What were the striae or streaks which occupy so much of the face? Seventh, What are the globular marks?

I am aware you will say, in regard to these last queries, that it is all obscure and doubtful, but, it is important for me to get yours and Dr. Deane's opinions in regard to these points without pledging you to support them, and without publishing any part of your remarks without previously consulting you. The reverse of the slab I suppose you have seen. If you will take the trouble to inform me what it is, it may save my uncovering it, or, perhaps, you think it best that I should uncover it.

Very truly

your friend,

J. C. Warren

Enclosed is a check for the money.

Boston Oct 4, ‘55
Dear Sir,

When I received your letter, a few days since, requesting me, if possible, to obtain of copy of Pres. Hitchcock’s fossil impressions, I thought it could not be done, having, two or three years since, made an unsuccessful effort. Your application has led me to make another attempt and, I am glad to say successful one.[121] The Academy has sold me a volume which contains it perfectly new and unblemished, and this copy I have myself put into the hands of Fiske & Co.’s Express as a present from me, you paying the carriage only.

I have a letter from Sir Wm. J., at last enclosing a draft for four pounds sterling. He promises to send me fossils in three weeks and makes some apology for delay—but none for withholding the four pounds.

Last evening Professor Wyman exhibited to the NHS various impressions of rain drops on clay.[122] He found that all the clay drops exhibited a radiated appearance, but this does not occur in the fossil rain drops, so far as I know. I wish you would send me, if you have them, small fragments of rain drops of different kind, to exhibit to the society, conveniently. In Silliman’s Journal, within a year there is an excellent paper of Mr. Hitchcock on the effect of rain drops upon clay.[123] I am studying the quadruped slab but it will require some time to understand it, the impressions are so minute. I should like to get the rain drops, if you have any, before the next meeting of the NHS, which will take place a week from next Wednesday.

Very truly
yours,
J. C. Warren

Boston Oct 22, ‘55
No. 2 Park St.
Dear Sir,

I had the pleasure of receiving your rain drops on the day you proposed—the Society looked them all over, and were much pleased. Professor [Henry] Rogers and Dr. C.T. Jackson discovered the radiations in a number of specimens. The Ornithichnite impression is, I think, the most distinct I ever saw. It has been much admired. In regard to the Aethiopus, I apprehend your first idea is correct, certainly the impress of the heel shows marks of feathers, but I have not yet examined the latter, and speak without book.

I have opened to day an interesting collection of casts from Germany – the Labyrinthidon and the Lilly Enchrinite are remarkable.

---

[121] *Hitchcock 1848*.

[122] J. Wyman, “Miscellaneous intelligence,” *AJS,* n.s. 21, 61 (May 1856), from *Proceedings of the Boston Society of Natural History*, Nov. 1855, p. 253. On raindrops whose radiating lines around circumference of drops are caused by fragments of drops as they are dispersed.

[123] No such article has been found. Warren may have confused it with Hitchcock’s writing of fossil raindrops in his *Elementary Geology* in 1840, and its successive annual editions.

I remain,
very truly
yours,
J. C. Warren

[Aethiopus Lyellianus, Hitchcock 1848, from Turner's Falls. See EH and Ch. H. Hitchcock, Elementary Geology, 1854.]

Boston Dec. 9, '55
Dear Sir,

The specimen which you describe must be very interesting I think, and I should like much to see it and, perhaps, purchase it, if not valued too high; the previous possession and publication by President Hitchcock having the priority, would of course lessen the value of any other specimen; however, I should be very glad to see it if that can be accomplished.

The saurian head which you speak of I do not understand. I do not recollect any that you saw excepting the head of the Zeuglodon Cetoides, which is an animal from seventy to one hundred and twenty feet long. For a complete skeleton exhibited in Boston a few years since the King of Prussia gave Dr. Kaup twenty thousand dollars.[124] I have two or three casts of a Saurian head which I would be willing to exchange for some of your valuable articles.

If I live long enough, I shall publish drawings of the most interesting specimens I possess, not with a view of profit, but for general information.

I have no odd numbers of Silliman's Journal, they are all bound, carefully kept, and often consulted. I have enquired among the booksellers and find there is but one copy of the work for sale in Boston, in about sixty volumes, which may be had for $150, which is generally considered a low price.

Sir William Jardine has sent me a draft for four pounds sterling, which I cashed for nineteen dollars. In the letter inclosing it he said as I have already mentioned to you, he should send in about three weeks from that time. The vegetable specimen you mentioned I have not found but is safe somewhere. I thought it was embedded with other valuable articles in plaster.

I remain,
very truly,
your friend,
J. C. Warren

Boston Dec 24, '55
Dear Sir,

I think you misunderstood me about Sir Wm. Jardine – that in order you may know exactly what he said, I enclose his note for your perusal. This is the only thing I have had from him since his first application. Please to return the note.

In regard to your offer to dispose of the new slab for one hundred and fifty, Dr. Deane sent me his opinion and a description from which I am inclined to accept your offer. You can forward it as soon as your convenience will permit, carefully guarding it against cracking.

---

[124] Johann Jakob Kaup (1803-1873) was a Darmstadt paleontologist.

Your friend
and servant,
J.C. Warren

Boston Jany. 11. 56
Dear Sir,

The slab arrived here safely, according to your letter; on the day following, Wednesday. I examined it, found it had come safe and was a fine interesting relic of antiquity. In Silliman's Journal, President Hitchcock, describing his slab,[125] says it is the only one yet discovered which has his biped impressions, but I understand from you that the three impressions on my slab were the same character as his. I should be pleased to know whether he denies the identity of form in my impressions and his, and whether you continue of the opinion that they are identical.

I do not wish to trouble you with unnecessary questions, but you will readily see the importance of my knowing all material facts relating to this specimen, particularly those I mentioned in a former note.

Sir William, I have heard nothing further from, but have no doubt he means to do what he has promised. I would by no means send him any thing more until he has fulfilled his promises.

Enclosed is a check for one hundred and fifty dollars, to your order.

I remain,
very truly
yours,
J. C. Warren

Boston, Jany. 17. '56
Dear Sir,

Your last letter pleased me much. I think your enthusiasm well placed, and the success you have already had should, I think, encourage you to continue your researches.

Last night at the Natural History Society, a member stated that a learned French philosopher had predicted that many ornithicnites would be found to have tails, and moved that the Society take measures to ascertain whether such is the fact. I let the Society know that you had discovered two or three sets of tails and that, in a few days I should be able to shew them a tail.

You do not in your letter inform me whether the track you propose to me to take has any appearance of tail, nor do I understand whether there is one track only, or one and part of another, but I understand that the proposed track is continuous to President Hitchcock's.[126] I should be glad to know the size of the impression, where it has the appendage of thumb, and also whether any slab was in the same ledge with the other, and whether it was a polished shale like mine or, a rude

---

[125] Hitchcock, "On a new Fossil Fish, and new Fossil Foot marks" AJS n.s. 21 (1856): 96-100. Silliman's journal was published several months before its printed date.

[126] This is apparently the track that Hitchcock described in a letter to Silliman: *Hitchcock-Silliman 2012*, letter of Oct. 19, 1855.

sandstone? I should however be happy to take it for comparison, as you propose, and in this way it may be valuable.

No news from Sir William.

I remain,
very truly
your friend,
J. C. Warren

Boston Feby. 11. ’56
Dear Sir,

I had the pleasure of receiving yours of the 11th this day. Professor Aggasiz’ [sic] address is “Professor Lewis Aggasiz, Cambridge, Mass.” The terms of subscription are twelve dollars a volume, for ten years, *making* one hundred and twenty dollars for the whole. The first volume is in preparation and as there are many plates it will probably require some time.[127] Professor A. has disposed of his collection to Harvard College for ten thousand dollars. Whether he is desirous to collect more, I know not. I should be happy to aid any application you may make to him.

In regard to Gigantipus impressions, as the description is contained in two or three letters and you think I may be disappointed about it, the only way will be for me to see it, and I will readily bear the expense of the transportation and return, if you would be so good as to let me know if you still think it worth twenty-five dollars.

As to the small specimen, I should be very glad to see it and would be responsible for its safe return if I do not take it.

I hear nothing nor receive nothing from Sir Wm. Jardine.

A small and very elegant introduction to Geology has lately fallen into my hands which I think would please you, and I will therefore send it to you in a day or two.

The Gigantipus slab is now set up in a frame and can be adjusted to the light. Professor [Henry] Rogers and various strangers have examined it with great interest and pleasure. Very truly yours,

J. C. Warren

Boston, Feby. 23 ’56
My dear Sir,

Your estimate of your abilities in recommending your specimens is, I think, too low. If I, or my estate, were to sell my collection I know no person whom I would sooner trust than you, to set it forth.

Of the four specimens now sent me, number one is a little quadruped. No. 2 is impressions of Algae. No. 3, Fucoid. No. 4, Ornithic. I wish you had sent the Gigantipus, but you say, send a draft for fifty dollars [#]. I enclose it. If the Gigantipus should prove of so little value as you seem to estimate, I must get you to send me the first large perfect hand specimen you discover in the spring,

---

[127] Agassiz projected ten volumes of *Contributions to the Natural History of the United States of America*, but only four were published (1857-1862).

for which I will allow you a satisfactory compensation. I hope you will find the Geology useful; it is the only copy I could obtain in Boston, and I did not part with it without some little reluctance.

very truly
your friend
J. C. Warren

Boston, 2 Park St.
March 1, ‘56
Dear Sir,

As the specimen of Gigantipus is really mine I have a right to be allowed to see whether I can with propriety, give it up. If you will send it to me I will bear the expenses, and endeavor to come to a just conclusion. The Geological work I sent you, is yours; the omission was accidental.

Yours truly,
J. C. Warren

Boston March 13/56
Dear Sir,

The Gigantipus slab arrived safely this afternoon; as it came rather late I have had no opportunity of examining it, but I understand it is in good condition and will probably prove an interesting specimen. This I thought you would like to know immediately.

Not a word from Sir William since I wrote to you.

Faithfully yours,
J. C. Warren

No. 2 Park St.

[Written after Warren’s death on May 4, 1856:]
“Dear Sir,

I have the pleasure of receiving your letter of July 12th directed to my brother Dr. M. Warren [Jonathan Mason Warren (1811-1867)] who from illness is incapacitated from answering it.

The articles you speak of have not been rec.d though Dr. Kneeland my father’s secretary says a case was expected.

Any thing for you shall be forwarded.

I remain,
Very [#] yrs.
Sullivan Warren

9 Park St.
Aug. 16th
Roswell Field Esq.

Appendix D. Field's letters to O. C. Marsh (1831-1899)[128]

Jan. 4, 1867
Greenfield Mass.

Prof. Marsh

Yours of the 16 of Dec. was received, and in reply would say that I put in boxes all of the light specimens the day after you were here. There are five boxes, and I think that the other slabs will go well enough without being boxed and if I drive [?] them to the depot. I wish to do so before the winter is gone as our team will be busy when the spring work begins. We have concluded to let you have the footprints that are at the # [perhaps Liebirdsmans] for fifty dollars, that will make the whole amount five hundred dollars.

I wish that you would send me one hundred to pay the Proprietors[129] and # [perhaps Liebirdsmans] with, and you will send me a note for the rest that I may have something to show in case of death or accident. I think if it is agreeable to you, the best way is for # [perhaps Liebirdsmans] to box the footprints that he has and carry them over and leave them in Mr. [Timothy M.] Stoughton's care as there is some danger of specimens being carried away, and I will not hold myself responsible for any of them.

Please write me.

Respectfully yours

Roswell Field

Greenfield, June 5, 67

Prof. Marsh

Dear Sir,

Your letter was received and in reply would say that I never boxed a large stone in my life, neither do I believe that they would carry as safe in boxes as out of them without the boxes are made of plank, and I have not got a board or plank on hand nor have I any time now to go and get any; the small specimens you know are all boxed. I hope you will make a bargain with Stoughton to have them left at his house as I am anxious to get them out of my possession as I have too much company here.

I shall be very busy with my team after this week and don't know as I could drive them to town without you have a car there within a week. I am quite anxious to have them removed.

I am glad that you are satisfied with # [perhaps Liebardsmans] account of himself as I have been dunned by the Proprietors of the dam more than once, and will now have it settled up.[130]

I believe that you were to pay me one hundred dollars down towards what I have to pay out. Am I correct in this? If so bring it to me when you come up. No hurry about it.

---

[128] From the archives of theYale Peabody Museum of Natural History, with thanks to Daniel Brinkman and Barbara Narendra. [Punctuation and capital letters have been added to Field's letters.]

[129] The next letter refers to "Proprietors of the dam," so Field was paying for the right to quarry on their property.

[130] Riverside property for the future dam had been purchased by the dam consortium.

Respectfully yours
Roswell Field

Greenfield, Mass., Oct. 7, 1867
Mr. Marsh
Dear Sir

I have rented my house and give permission of it the first of Nov.[131] and the consequences are that every stone that you own here must be removed before that time, and I hope that you will come up and see to them, and please drop me a line a few days before you come that I may be prepared to move them. Mr. Stoughton is not friendly to me and if they are to be stored there I want you should be there and pack them away to suit yourself. I should prefer to drive them to Greenfield if you are ready. I should move them but once. I hope that you will attend to this at once and on no account put it of[f] beyond the 25th of this month.

The stones have remained to[o] long on my hands but I will not complain if you will see to it now; in fact you must see to it. They must be removed.

Respectfully yours
Roswell field

[Fragment of letter, marked at top by another hand: "1867 [Oct.]"

to that theory. I believe that it was by the universal consent of scientific men that Dr. Hitchcock was permitted to hatch out of some thirty-five different species of birds, some of them it is true died young, some turned into ornithoid lizards, some into ornithoid marsupialoids, and others into ornithoid batracians, and still be left birds enough to stock the continent.

I believe the time was when no man had more respect and reverence for the learning and wisdom of scientific men than I had. I thought they could break right through a rock, could tell of[f] what it was composed of, its fossils, its age and its geological position, and I must say that I thought it not strange that Dr. Deane, when he saw the first tracks on the flagging stone in Greenfield, that he should have called them turkey tracks, or that Dr. Hitchcock should have called them stony bird tracks. Now you say that those tracks were made by a peculiar kind of reptile?? And I wish to say to you as to any other man, before you pretend to describe the peculiarities of this animal, you will consider the vast amount of ink that has been shed to prove who shall have the great honor of the original discoverer of bird tracks, and I would have you remember that they have been scientifically described and those descriptions received and corrected time and again.

And you will recollect one other thing and that is, if all of the bones of all of the extinc[t] animals that have lived on the earth could be found, from the mammals down, Dr. Hitchcock has got a class of just such animals, and so as not to have them interfere with his birds. On our sandstone we have perhaps seven different kinds of tracks that look like bird tracks. From these Hitchcock has made over thirty species of birds, five marsupials and ten ornithoid lizards or batracians and I don't believe now that there is any greater difference in all of the so-called bird tracks than there is in the tracks of our barnyard hens taking the different varieties old and young.

---

[131] No record of this rental has surfaced.

Yours, Roswell Field

Greenfield, Nov. 7, 1867
Mr. Marsh
Dear Sir,

Yours of the 4 inst. was duly received with draft for 525 dollars, and I retain the note and receipt with this.

The Brontozoum gave out at the fifth track, and I fear that I shall spoil what I have found: at the fifth track I found three tracks running at right angles with the former.

Thus I thought I would cut out the three or rather four lower tracks on one stone and leave four on the other. [drawing of four horizontal tracks crossed by four vertical tracks] I have commenced on the lower slab and and [sic] have already spoilt track No. 1. The rest are where they were. I have been to[o] hurried to attend to them.

Respectfully yours,
Roswell Field

Greenfield, July 13, 1868
Prof. Marsh
Dear Sir,

Yours of the 3 inst. was duly received. I thank you for your offer and will say that the slab shall remain as it is until you come up next fall and if you don't want to mark of[f] an alteration, I will do it and the slab shall be yours. I see by the third annual report you sent me, that Mr. Brewer [?] has given a lecture on the Possibilities and Limits of Improvements in Breeds of Cattle. If the lecture is printed please send it to me. I am not doing anything amongst the tracks nor shall I until fall.

Are you going to the Chicago. [sic]
Respectfully yours,
Roswell Field
[attached note not in RF's hand:]
Roswell Field accepts offer of $200 for slab.

Dec. 6, 1869
Greenfield Mass.
Mr. Marsh
Dear Sir

I sold you footprints more than a year and half ago and from time to time you have promised to take them away and pay for them; those you purchased last were boxed as you said you would take them in October, and the boxes are in my open porch very much in my way and exposed some to storms; now the time has fully come that I want my pay for them and to have them removed.

Please let me hear from you without any further delay.
Respectfully yours,
Roswell field
[attached note not in RF's hand:]

Mr. R. Field. Ans. Jan. 17th, 70.

Greenfield, Feb. 19, 1870
Prof. Marsh
Dear Sir
Yours of the 13 inst. is at hand, and in reply would say that if you attend to this the first of next month, it will answer.
I expect now that this place will pass out of my hands the first of next month[132] and of course I can't rent you the right of the quarries at the Lilly [sic] pond.
Respectfully yours,
Roswell field

Gill, Mass.
June 7th, 1876
I hereby agree to allow Prof. O. Marsh or any parties he may order there to dig for footprints etc. in the neighborhood of the so-called "Lily Pond" on my land, and to have all the specimens procured there for one year from the date for the sum of one hundred dollars & to allow no other parties to dig or remove specimens from that vicinity.
Roswell field
Witness
Geo. Bird [?] Grinnell

Appendix E: Field's letters to Jeffries Wyman (1814-1874)[133]

Greenfield, Sept. 29 '56
Prof. Wyman,
Sir, I received a letter from you a long time ago which should have been answered before now; the truth is my fish quarry was but a little above low water mark & I had not got it fairly proved before a rise in the river forced me to abandon it, & I have waited in vain for low water, and I do not expect to get a chance to dig for fishes until an other summer; as it was I got a few very nice fish, Dr. Hitchcock thinks them different from those got at Sunderland. I had a nice specimen which I intended to have sent you but Prof. Emmons of Albany was here and wanted them to illustrate some work he is publishing on geology so I sold them to him, and have to sell all of my nice things or stop digging. I have continued to dig for footprints of birds, altho I think that Drs Hitchcock & Dean must modify their theory of ornithichnites. I know that it is folly for me to say so but it will prove so in the end. I have uncovered more footprints than any other man and I see many things in lost and broken specimens that they have never seen; tho there has been enough saved to cast a great

[132] This departure from his house remains unexplained.

[133] From the Countway Library of Medicine, Boston, (H MSs C 12.2), with thanks to Jack Eckert. Field's letters to Wyman have quaint spellings which have been left intact, without the use of "sic." A decade later, in his letters to O. C. Marsh, Field had greatly improved his spelling.

doubt on the subject, many of them had tails different from the tails of birds and still they appear to have been bipeds, and that some of the quadrupeds were without tails is equally evident. I know that this is a strange conclusion to come to, at least I suppose it will be considered so; it is a pitty that some one that had the means wouldn't lay out a few thousand dollars diging for these interesting rellicks. Our rocks are full of new & interesting organick markings & new light will yet be thrown on the subject. I have a curious track recently found which Hitchcock has described[134] under the name of Anomoepus scambus. The specimin that I have is much larger than anything of the kind yet found. The animal sat on his hind feet & legs or forearms. The whole impression is 15 inches. The specimen does not show any forward feet altho I presume it was a quadruped. There is a verry plain impression where he set his rump (I suppose that ant a scientiffick term) but I will not trouble you with further descriptions being aware that I cant do it so that you can understand it. I am much obliged to you for your kindness and may trouble you from time to time as I may find things new.

Yours respectfully,
Roswell Field

Greenfield, Jan 10 – 57
Prof. Wiman,

Sir, after I wrote to you last fall I found an other bed of fossil fishes at Turners Falls. I think there are five seperate beds all verry difficult to get at, and only got at in verry low watter. I have got a verry fine tolerable good fish and I now think of going to Boston about the 12 of February. Is there a meeting of the Society of Natural History that week and if there is do you think that it would be adviseable for me to lay before the society a few of these fish for there inspection? I suppose they don't differ from other fossil fishes found in the rocks of the connetticut river tho there may be some new species amongst them but even if these were some new species I suppose we should not be much the wiser unless Agassiz should be there to point them out and give us a short speach on the subject. Does Agassiz usually attend those meetings? Please advise me what to do; I feel anxious that you & Agassiz at least should see them. Should I come, where should I find you? I am more used to looking amongst rocks than in the city.

I have already said that I think there are fine beds of ichthyolites at Turners Falls. I shall examine this more thorough an other summer. The rocks here are exposed for a long distance and in passing up on the bank of the river I find five beds of bituminous shales. In three of these I have obtained good specimins, the other two from scales found and other indications I have no dout but are fish beds. These different beds dip from one to several hundred feet beneath each other. There are no appearance of faults therefore I conclude they are seperate beds, and what is rather strange the intermediate rocks have footprints on them in one instance a stratum of footprints dips under the fish at no grater deaph than fifteen feet. There is no place in New england where the rocks are so interesting as at Turners falls and I wonder it is not visited oftener by men of science. Please excuse this desgointed letter, with many thanks for your kindness in answering my letters

respectfully yours
Roswell Field

---

[134] *Hitchcock 1848*, p. 224: Anomoepus scambus: "Plate 20, fig. 3, is copied from a slab in Mr. Marsh's collection . . ."