HUMAN FOOTPRINTS IN ROCKS

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Mention in scientific circles of so-called human footprints in any rocks results in raised eyebrows and general skepticism that such can be found. Among creationists considerable misplaced enthusiasm is expressed quite often. However, when one attempts a systematic study of the subject of human footprints in rock layers, evidence can be considered in three categories: (1) undisputed human footprints preserved in rocks, (2) documented examples of footprints that have been drawn or carved in rocks, and (3) an open category of unresolved "finds". Evidences for each of these three categories are discussed at length and numerous illustrations of observed materials are provided.

Introduction

I suppose Robinson Crusoe's reaction to Friday's footprint in the sand is comparable to the feeling of mystery and conjecture that takes hold of our minds at the sight of footprints from the distant past. A perusal of geological literature indicates an acceptance of footprints of various animals as evidence of their existence contemporaneously with the time of the laying down of the strata in which they are found. So we find frequent references to the three-toed dinosaur prints in the Triassic rocks of the Connecticut Valley. Many geology texts have used the photograph of a child splashing in the twenty-gallon pool of water held by a dinosaur footprint in the Cretaceous limestone of Texas.

However, there is no mention of any human footprints in any rocks. When the subject is mentioned in scientific circles, it causes raised eyebrows, general skepticism that such things can be, or a statement that these items are of no scientific value and hence of no interest. On the other hand, in creationist groups there is often considerable misplaced enthusiasm on the subject, with too great a willingness to jump to unjustified conclusions.

When one "digs" into this subject, one might wonder how much valuable evidence has been discarded or destroyed through ignorance and carelessness. An interesting case comes to my mind.

Some years ago Dr. Frank L. Marsh of Andrews University, Berrien Springs, Michigan, showed me a photograph of an iron pot. The story behind it is as follows:

It would seem that about 1915, a fireman in a power plant in Oklahoma was shoveling native coal into the boiler. Upon reaching an overly large chunk, he had to break it with a sledge, and out of the resulting two pieces fell an iron pot (see Figure 1). He threw the two pieces of coal into the fire, but passed on to others the pot, which ultimately wound up in the private collection of an individual in Missouri. It was photographed at the time, and the picture and the story came into Dr. Marsh's possession some years ago. He personally saw the pot, and exami-

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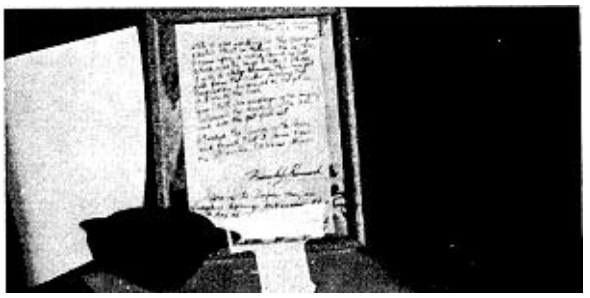


Figure 1. Iron Pot from Lump of Coal. From a letter dated January 18, 1949, Brandon, Minnesota, to Dr. Frank Marsh comes the following excerpt:

> **During Christmas vacation I visited a friend's museum in southern Missouri. Among his curios, he had the iron cup pictured on the enclosed snapshot. You can probably read the letter in back of the cup.**
>
> **At any rate, the letter states that this cup fell from a lump of coal and left the imprint in the coal. To me it obviously suggests further evidence of a flood and of a civilization prior to the flood. . . .**
>
> **Letter signed by Robert Nordling.;**

In a letter dated February 3, 1966, to Wilbert H. Rusch, Sr., Dr. Marsh made the following statements regarding the pot and the writing on the affidavit:

> **Enclosed is the letter and snap sent me by Robert Nordling some 17 years ago. When I got interested enough in this "pot" the size of which can be gotten at somewhat by comparing it with the seat of the straight chair it is resting on) a year or two later I learned that this "friend" of Nordling's had died and his little museum was scattered. Nordling knew nothing of the whereabouts of the iron cup. It would challenge the most alert sleuth to see if he could run it down. If the cup could be found it seems to me that coal would still be present in minute quantities in spots. I don't know the geologic age of the Wilburton Mines' coal. If this cup is what it is sworn to be, it is truly a most significant artifict.**

As carefully as can be determined the affidavit reads as follows:

> **Sulphur Springs, Arkansas Nov. 27, 1948**
>
> **While I was working in the Municipal Electric Plant in Thomas, Okla. in 1912, I came upon a solid chunk of coal which was too large to use. I broke it with a sledge hammer. This iron pot fell from the center, leaving the impression or mould of the pot in the piece of coal.**
>
> **Jim Stall (an employee of the company) witnessed the breaking of the coal, and saw the pot fall out.**
>
> **I traced the source of the coal, and found that it came from the Wilburton, Oklahoma, Mines.**
>
> **Frank J. Kenwood (?)**
>
> **Sworn to before me, in Sulphur Springs, Arkansas this 27th day of November, 1948.**
>
> **Julia L (?) N.P.**

nation of it indicated nothing that would contradict the story. Since then, the owner died and the pot has been lost.

Assuming that the story is true, and if the fireman had saved the two parts of coal as well as the pot, I wonder what explanation coal geologists would have come up with to explain the presence of a fashioned iron pot in situ in a coal bed! One wonders how many times this same sort of thing has happened in the past several hundred years.

When one attempts a systematic study of the subject of human footprints in rock layers the evidence can be considered in three categories: (1) One finds that there really are undisputed human footprints preserved in rock. (2) There are also documented examples of footprints having been drawn or carved by various human beings in the past. (3) Finally there are examples that would seem to fall into the open, unresolved category.

Human Footprints in Rock

In 1940, Mr. F. B. Richardson of the Carnegie Institution, Washington, D. C., discovered a series of footprints in rock which were made by people fleeing from a volcanic eruption. The footprints were uncovered during a quarrying operation on the outskirts of the city of Managua, Nicaragua. Previously, Dr. Earl Flint of the Peabody Museum had found similar footprints and collected several samples. However, since most archaeologists were firm believers in the recency of man in the Americas, the evidence was set aside and no further investigations were made at that time.

The rock setting in Nicaragua is as follows. Over a deposit of volcanic ash, there is a deposit of volcanic mud that is about six inches deep. The footprints seem to have been made by two people walking on fairly firm material. Other people walking to their right were in material so soft that their feet sank into it. There also are footprints of a deer crossing this area. The assumption is that the footprints were made shortly after the volcanic mud had covered the area.

Dr. Howel Williams of the University of California examined the prints and considered the circumstances to be such that there can be no question of the authenticity of the footprints (see Figure 2). They are not carvings, but are definitely the impressions of human feet. The individuals are considered to be fairly small people with apparently no children, since all the prints are about the same size. Quarry workers reported that additional footprints, destroyed as a result of the quarrying operations, all pointed in the same direction as those observed.

The beds underlying the footprints are made up of hundreds of feet of ash. The geological setting suggests that neighboring volcanic craters erupted, causing mud flows which are considered to be remarkably like those that buried Herculaneum, Italy. Shortly after the footprints were made, a thin layer of black cinders covered them (see Figure 3). This was followed by another mudflow followed by more cinders interspersed with large numbers of mud flows. In a quiet interval, a river cut a channel into the underlying ash. This was followed by another eruption and pumice covered the area to a depth of more than a foot. In the succeeding quiet period, rivers cut new channels. Then top soil to a depth of three feet developed. Renewed eruptions covered this soil with ash. In the next quiet interval, ten inches of soil developed. Apparently, four layers of soil, including the present top soil, have been developed in addition to the river channels that have been cut.[1]

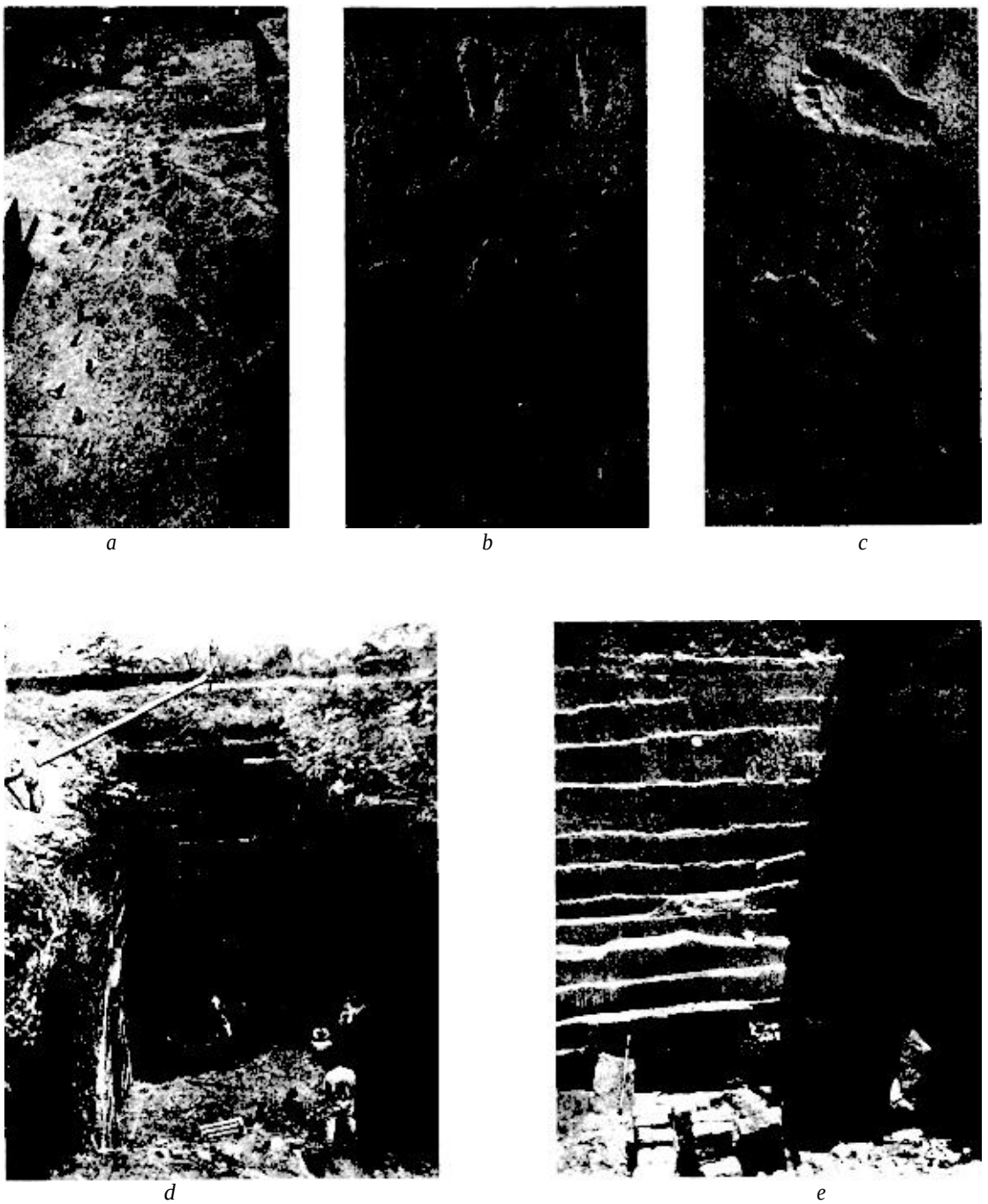
Thus, there is undisputed evidence of human fossil footprints being preserved in, of all things, igneous rock. So the possibility of human footprints in rock strata has to be taken seriously.

Natural "Footprint" in Rock

On the other side of the coin, it must be recognized that natural formations can be quite strange in appearance. I had the opportunity to observe this directly on April 29, 1970, during a physical geology field trip to observe evidence indicating glaciation near Ann Arbor, Michigan, when a small sandstone boulder was found on the discard pile of a gravel pit in the interlobate region known as the Waterloo Recreation Area. It was probably derived from the Marshall sandstone which outcrops to the north and west of Ann Arbor.

The boulder was apparently a concretion which had weathered out and had then been ice and/or water transported to the site. As frequently happens to such sandstone boulders and cobbles, weathering had caused it to separate as if run through a bread slicer. To the astonishment of all present, one of the slices showed a gray sandstone "footprint" roughtly "human" in outline against the red standstone margin (see Figure 4). (Note: The lighting angle resulted in shadows that overemphasized the elevation differences. Careful trimming could be done to eliminate the step differences.)

As can be seen from the picture of another slice (see Figure 5), this is a three dimensional core of gray sandstone within the maroon sandstone outer surface (see Figure 6). The gray core changes shape at different surfaces on different slices. But one slice shows an astonishing resemblance to the outline of a human sandal print. In fact the average person who sees it calls it a human footprint. The possibility of such a "sport of nature" must therefore be borne in mind



a *b* *c*

d *e*

Figure 2. Footprints of people fleeing volcanic eruption. Photographs of footprints and quarrying operation, Managua, Nicaragua.

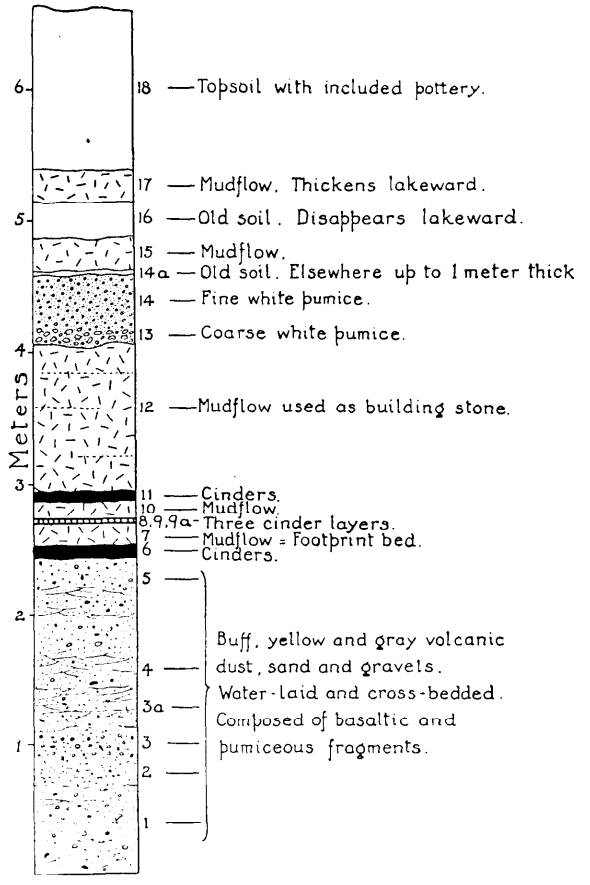


Figure 3. Principal geologic section of area near Managua, Nicaragua. Section shows pumice and ash deposits lying several meters thick above the footprint bed.

Figure 4. Natural "footprint" in sandstone boulder, found near Ann Arbor, Michigan. Despite the apparent "human" shape, this "print" was formed otherwise inside a sandstone boulder.

Figure 5. "Footprint" in a sandstone boulder. This view of the 'footprint" shows that the elevation differences (see Figure 4) are not great.

Figure 6. "Footprint" in sandstone boulder. A gray sandstone core is surrounded by maroon sandstone. Note the astonishing resemblance to a human footprint in a naturally formed rock substance.

when considering the problem of human footprints in rock.

Footprint Reports in Literature

Research into old volumes of *American Journal of Science* yields a surprising number of references to footprints in rock. The following is a survey of my library research for reputable references to footprints in rock.

In 1817, at Herculaneum, Missouri, two tracks were found in a quarry, which were taken up and placed in the back wall of a chimney. There was also a report of tracks having existed upon rocks between Esopers Landing and Kingston, N. Y., on the banks of the Hudson. No information is available as to the present whereabouts of these specimens.

The first detailed record of human imprints in the United States is found in *The American Journal of Science* for 1822.[2] Henry Schoolcraft noted the presence of some human footprints in a limestone slab located in a paved area between a house and garden in New Harmony, Posey County, Indiana. At the request of the Rev. Frederick Rappe, the rock bearing these prints had been transported from limestone layers on the west bank of the Mississippi River at St. Louis, Missouri. Apparently there were large numbers of these prints at the waterfront which already had been noted by the French when they first arrived at the site of St. Louis.

The footprints were found in a crinoidal limestone. The prints were those of a man standing erect in a natural position. The toes were spread as if not used to the confinement of shoes. The feet were spread so that heel to heel measurements were 6¼ inches while the toe to toe spread was 13½ inches.

Schoolcraft described the prints as "strikingly natural, exhibiting every muscular impression, and the swell of heel and toes, with a precision and faithfulness to nature which I have not been able to copy." The foot length was 10½ inches; the width across the spread toes, 4 inches; and across the heel, 2½ inches. Schoolcraft also reported a faint outline of a sort of scroll, 2½ feet in length, placed ahead of the prints as if a man were idly doodling with a smooth stick while standing. The dimensional figures given were taken by Schoolcraft on July 19, 1821.

Schoolcraft corresponded with Col. Thomas Benton on this subject. Benton considered the tracks that were moved to Indiana to be carvings for the following reasons:

1. the hardness of the limestone;
2. there were no other prints visible leading to and from the two prints on the block (this is difficult to ascertain owing to a lack of any positive information as to where the tracks had originally been located); and,
3. the difficulty of supposing a change so instantaneous and apropos, as must have taken place in the formation of the rock, if the prints were impressed when soft enough to receive such deep and distinct tracks.

Interestingly enough, other footprints carved by Indians were known to Schoolcraft, and he refers to the grotesqueness of these in contrast to the striking naturalness of the prints under discussion.

The source of the prints was a rock that was uncovered for a distance of three miles in front of St. Louis during low water stages, and the outcrop varied from one to 200 feet in width. The prints "looked" as old as the rock, that is they showed the same fine polish which the action of sand and water produced on the rest of the rock. Schoolcraft considered them to be exquisitely natural.

In *The American Encyclopedia*,[3] reference is made to a mountain about two miles south of Brasstown, which is famed for the curiosities in its rocks. There are on several rocks a number of impressions resembling the tracks of turkeys, bears, horses and human beings, as visible and perfect as if they were made on snow or sand.

Sir Woodbine Parrish, the discoverer of *Megatherium,* told a correspondent (identifiable as the first systematic researcher in ripple marks in sandstone and referred to in Jameson's *Edinburg Journal,* issue unknown) that human impressions had been seen in various locations in South America. The Catholic laity there believed them to be the feet of the Apostles.[4]

Evidences of Stone Carvings

A Prof. W. A. Adams noted in a letter to the *American Journal of Science*[5] that he was surprised to see in a previous issue that so many respectable authorities could be found who would support the idea of genuine human footprints in rocks. He seemed to feel differently due to encountering some carved prints in a canal embankment that were uncovered when the Muskingum River broke out of its banks and removed the overburden. But these prints were an entirely different matter from Schoolcraft's. Adams described them as two human footprints, natural size, accurately drawn, outlined as if by pointed chisel and mallet, with an intaglio effect worked in. They were accompanied by many gigantic turkey tracks whose form seemed to have been made by a series of dots. Unfortunately the rock was quarried and broken up.

The difficulty is that these tracks do not seem to be available for study today. As seems to be the case in so many instances, no attempt has been made to preserve such items. There is even a reluctance to objectively discuss them, to exam-

Figure 7. Footprints in Washington State Park, St. Louis, Mo.

Figure 8. Footprints at Washington State Park, St. Louis, Mo. The footprints and other carvings are outlined in white.

ine them for genuineness. Rather, the usual reaction is to avoid discussion. Attempts at preservation are found only in cases where recent carving seems certain as their source.

An exception, up to at least 1961, was a block of limestone in the basement of the geology building of Washington University in St. Louis, Missouri. When I photographed this block, it had the following legend attached:

> INDIAN TRAIL-END MARKER
>
> Footprints carved in rock to mark trail end at springs and river crossings. Common in Missouri and the Southwest. Probably from Ste. Genevieve County, Mo. Formerly in the garden of Firmin Desloge at Potosi, Mo., up to his death in 1856. Loaned by his daughter Clara Desloge Pike to Washington University.

The accompanying photograph (Figure 7) shows the prints with a ruler to show size. The prints could have been carved, but there was a total lack of chisel marks. There was an elliptical depression just forward of the heel in each print. D. K. Greger, deceased, of the Washington University department of geology and a serious student of Indian cultures, reportedly said that the Indians had the custom of placing carved footprints at the end of a trail or at the site of a portage.

There is no denying the fact that there were Indians in the past who drew and carved various signs, including human footprints. One clear example that I had opportunity to observe first hand is located in Washington State Park, south of St. Louis, Missouri (see Figures 8-9). These carvings are outlined in white and protected from the wear of people walking: on them. The sign at the beginning of the trail leading to the prints proclaim; them as petroglyphs, and it is assumed that Indians used them as trail markers. This is probably so, since the carvings include such well-known Indian signs as thunderbird, reverse swastika, etc. The human footprints are four-toed and resemble the drawings in a comic strip, some even like those of a child (see Figure 10).

Inscription Rock is on Kelley's Island in Lake Erie off Marblehead Peninsula, Ohio, about a mile east from the ferry landing. Faintly visible on this large limestone boulder are the carvings of Indians, very similar to those at St. Louis. Erosional agents, and possibly vandalism, have all but obliterated them. By reading a marker, one can still identify and locate these carvings. at least faint outlines can still be seen. In recent years a shelter has been erected over the rock.

Another possible example of Indian carving may be found on a glacial granite boulder on the University of Nebraska campus just north of 11th and R Streets in Lincoln, Nebraska. It weighs approximately four tons and was found in Cedar County, Nebraska, between Hartington and Coleridge, Nebraska. This boulder is covered with writing that resembles ancient Hebrew. Runic and Mexican symbols, but the most outstanding item is a human footprint.

The boulder was discovered in its original location by Prof. Samuel Aughe of the Nebraska State Department of Geology in 1869. In the

Figure 9. Footprints at Washington State Park, St. Louis, Mo. are apparently carvings as they are found with petroglyphs.

Figure 10. Four-toed footprint at Washington State Park, St. Louis, Mo. is probably carving. This four-toed foot resembles the drawings in a comic strip.

following 23 years various scholars examined the boulder, endeavoring to solve the mystery of the carvings. It was agreed that they were not accidental, nor were the carvings made where the boulder was found. There is no evidence to link the writing on the rock in any way with Nebraska Indians.

The boulder was brought to the campus by members of the University of Nebraska class of 1892. For a period of about 60 years the writings were forgotten by all concerned and the boulder lay on the campus with the inscriptions unnoticed. Then in the fall of 1961 they were "rediscovered," the carvings emphasized by whitening, and the boulder was then photographed for newspaper publicity (see Figure 11). Certainly this example, by the nature of the rock itself, must be classed with the Washington State Park exhibit as known carvings. Thus, it would seem that we have unquestioned examples of footprints that have been carved by early residents of America. Figure 12 shows this carving with a shoe nearby.

Some Prints: Actual or Carvings?

However, there are some examples that cannot be so simply categorized. In my opinion they cannot definitely be considered actual footprints. On the other hand, they cannot simply be dismissed as carvings. In this category would belong those located in the Pottsville sandstone outcropping at a point southeast of Berea, Kentucky.

The known history of this outcrop is rather complex. Therefore as part of an attempt to form as complete a record of these footprints as possible, the writer planned to devote two weeks to this project. Plans called for checking the area exposures of the formation containing the prints, the Pottsville sandstone, as well as attempting to pick up leads from area inhabitants, if and where possible.

A preliminary survey was made in a few days during the month of July, 1963. The site of the footprints was located and a preliminary examination was made; however, time was short and a resolve was made to spend a longer time at the site. A second trip began from Ann Arbor, Michigan, on June 20, 1964. Needed "quad" maps were picked up at the State Geological Survey, Mineral Industries Building, University of Kentucky campus, Lexington, Kentucky.

Previously, a number of inquiries had been sent to neighboring state geological offices, e.g., Kentucky, West Virginia, Pennsylvania. In the case of Kentucky, no reply was received, although a self-addressed postpaid envelope had been enclosed. Inquiries at the office in person elicited professed ignorance of any kind of footprints whatsoever, except in the case of one individual who eventually admitted that he had heard a rumor of some person who claimed to have found some prints. The consensus seemed to be that there were no such items anywhere in Kentucky, even carved ones.

A base for first operations was selected within easy radius of Rockcastle, Laurel, and adjacent counties in Kentucky. After a week of fruitless checking, decision was reached to revisit the

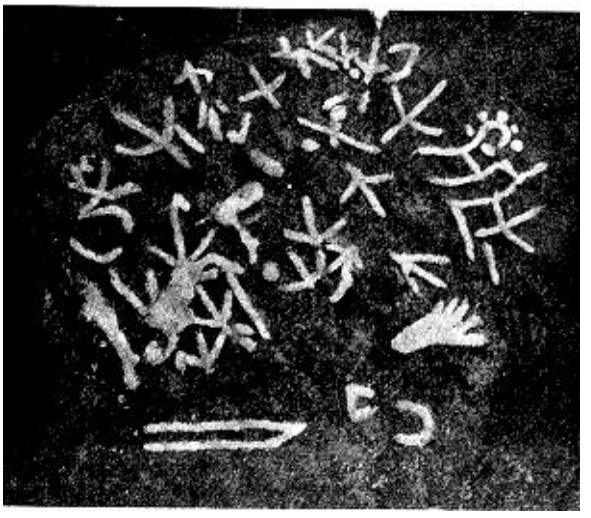


Figure 11. Newspaper photograph of Indian carvings found on granite boulder, University of Nebraska campus. The footprint is present with mysterious symbols and is obviously carved. Lincoln Evening Journal and Nebraska State Journal, November 6, 1961, page 8.

original print site. Contact was made with Mr. William Finnell, a local furniture dealer in Berea, whose father, Ott Finnell, originally owned the farm where the prints were found. Sessions with Mr. Finnell proved very interesting and enlightening.

Mr. Ott Finnell had acquired several hundred acres in the area southwest of Berea. Although now wooded, in the late 1800's it was all under cultivation. For a good many years there was a rock known as "Bear Paws Rock" about the level of the present road which ascends to the outcrop. This had some prints on it which gave the rock its name, and no further information on this rock is available other than its destruction in 1923 by blasting operations when the aforementioned road was constructed.

About 1930, logs were cut at the top of the hill, and "snaked" over the edge to the road below. This operation uncovered the overburden from the sandstone at the top near the edge, and another set of prints was exposed. Mr. Finnell remembered well the prints for the whole of their existence. Originally he says there were 16 tracks of footprints, many arranged in a normal walking stride. He checked out a number against his own stride.

Shortly after that time, Dr. W. G. Burroughs, who was then State Geologist for Kentucky as well as geology professor at local Berea College, became interested and made extensive studies of the prints. Mrs. Burroughs is also a qualified geologist, and they studied these items together. At the time, considerable publicity was given to

Figure 12. Footprint on rock, University of Nebraska campus. This is an example of a known carving. Shoe added for comparison.

the find, with the result that there were many visitors to the site. Further, a natural increase in weathering due to exposure plus a good deal of vandalism has resulted in most of the tracks becoming faint and indistinct.[6]

Attempts at preserving the tracks were complicated by a peculiar legal situation which developed. Mr. Ott Finnell believed he owned the area as part of his extensive holdings. But when the publicity broke, a Mr. Barlow Clark came forward and claimed that he had been sold that acre. A recording in the courthouse gave a semblance of truth to his claim. Mr. Ott Finnell didn't feel that the one acre was worth litigation in those days, and so ignored the whole matter. Since that time, Mr. Clark died intestate, leaving about 70 heirs to that one acre. Mr. William Finnell has tried to buy the acre to complete his holdings, but clear title cannot be procured, since all the heirs cannot be located. So this has become a case of a permanently clouded title.

The question of the title played into the matter of trying to preserve the prints. The fact that there is no established ownership makes difficult any attempt at protection. Photographs taken at the present time show the degree of destruction. One print was completely broken off when the edge of the standstone was broken, since it was at the edge of the outcrop.

A return to the site with Mr. Finnell, carrying a five gallon bucket of water to the site over rough areas, was worth the trouble. Spilling the water over the exposure, brought out items not seen before and clarified those that had been previously seen. A new set of photographs was taken of the prints and of the site in color and black and white.

To preserve tangible evidence of all prints remaining, plaster and water, as well as simple tools, were transported to the site. A successful procedure was found for making casts of all

Figure 13. Footprints in Pottsville sandstone adjacent to Ott Finnell property near Berea, Kentucky. Shoe added for comparison. Over-all view shows several prints. Water was spilled over the outcrop to produce clarity of detail.

Figure 15. Footprint in Pottsville sandstone adjacent to Ott Finnell property near Berea, Kentucky. Human foot added for comparison.

Figure 14. Footprint in Pottsville sandstone adjacent to Ott Finnel property near Berea, Kentucky

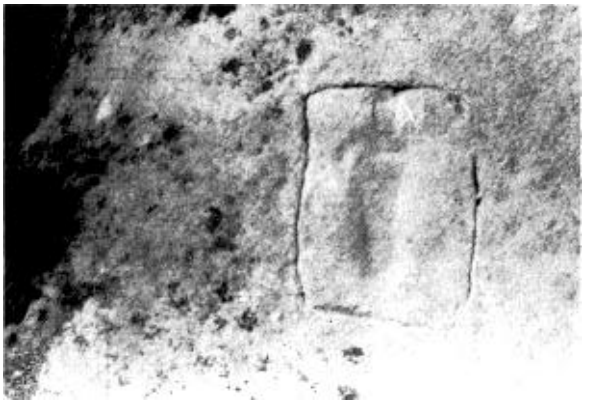


Figure 16. Footprint in Pottsville sandstone on Ott Finnell property near Berea, Kentucky. Evidence of vandalism is seen as someone attempted to remove this footprint.

prints that remained in sufficient contrast. The prints were coated with detergent, plaster was dusted in, and then they were poured. These are now available.

Figures 13-18 show the footprints as photographed in 1964. Contrast in the photographs of the prints is poor because of the effects of weathering which has blurred the outlines of the prints. Evidence of vandalism is seen in the attempt to carve one footprint out (see Figure 16). For the purpose of establishing the sizes, either the author's foot or shoe are shown alongside the prints. Also for the sake of comparisons, I photographed my wet footprint on the outcrop as well as my footprint in beach sand (see Figures 17 and 18).

Research Report of Kentucky Prints

Correspondence with Dr. Burroughs revealed that he had carried out a unique investigation. He fitted a low power microscope with an aperture which would limit the field to a relatively small area, so that a count could be made of the grains of sand in a given area on the surface of the rock. This microscope was then set up at the footprint site. This procedure revealed a consistently greater number of grains in the soles of the prints than in the adjacent rock, which would seem to indicate that there had been compression, as for instance from the weight of an individual standing in place.

Dr. Burroughs considered these to be actual prints, based on his sandgrain comparison technique. Two physicians of Berea, Drs. Baker and Cornelius, also studied the grains and reported, "the sand grains in the bottoms of the prints were much more closely packed than those in the slopes, and those in the slopes were more closely packed than those in the rocks an inch from the margins of the prints, or at any other point."[7] Dr. Burroughs referred to the prints in one article as

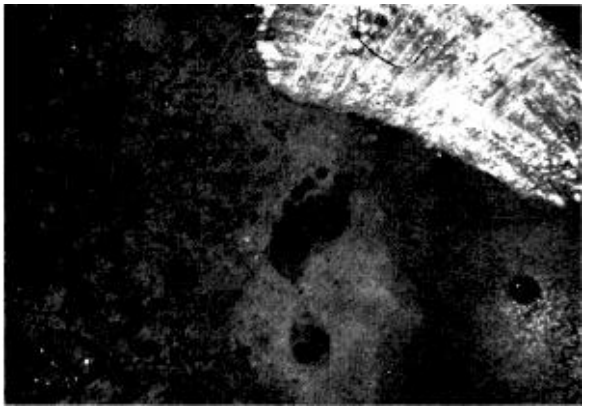


Figure 17. Photograph of author's wet footprint on rock outcrop for comparison.

being formed by *Phenanthropus mirabilis*,[8] organism unknown.

An original report[9] gave the following information: The Kentucky tracks are definitely not the tracks of amphibians. They were made by creatures that walked on their two hind legs and had feet strikingly like human beings who had never worn shoes. The kind of creatures that made the tracks has not been determined. Mr. Charles Gilmore of the Smithsonian Institution entered into correspondence with Dr. Burroughs on the matter. Strangely enough, Mr. Gilmore never really questioned the authenticity of the prints, but neither did he ever go to the site to observe the prints for himself, nor did he ever report them in a Smithsonian Bulletin. Dr. Burroughs reported[8] on the find directly as follows,

> The footprints are sunken into the horizontal surfaces of an outcrop of hard, massive gray sandstone on the O. Finnell farm. There are three pairs of tracks showing left and right footprints. The remaining distinct impressions are single tracks, the other foot in each case not having made an impression in the sand, or if an impression was made it was washed away or has been eroded since the sand became rock. In addition to the complete footprints, parts of footprints were found. The tracks extend in various directions and bear no relation to each other, except for the left and right impressions of a pair of tracks. Each footprint has five toes and a distinct arch. The toes spread apart like those of a human being who has never worn shoes. The length of the foot from the heel to the end of the longest toe is nine and one-half inches though this length varies slightly in different tracks. The width across the ball of the foot is 4.1 inches while the width including the spread of the toes is about six inches. The foot curves back like a human foot to a human appearing heel.

Figure 18. Photograph of author's footprint in beach sand for comparison.

The sand grains within the tracks are closer together than the sand grains of the rock just outside the tracks due to the pressure of the creatures' feet. Even the sand grains in the arch of one of the best preserved tracks are not as close together as in the heel of the same track, though closer together than the sand outside the track. This is because there was more pressure upon the heel than beneath the arch of the foot. In comparing the texture of the sandstone only the same kind of grains and combination of grains within and outside of the tracks are considered. The sandstone adjacent to many of the tracks is uprolled due to the damp, loose sand having been pushed up around the foot as the foot sank into the sand. The forward part of one track is covered by solid Pottsville sandstone only a few days or weeks younger than the sandstone in which is the track. Another track nearby is also partially covered by solid Pottsville sandstone of the Coal Age. One pair of tracks shows the left foot advanced relative to the right foot. The distance from the end of the heel of the right foot to the end of

the heel of the left foot is eighteen inches. This indicates somewhat the length of legs and height of the creature that made these tracks. There are no indications of front feet although the rock is large enough to have recorded front feet if front feet had been used to move about. In the pair of footprints that show the left and right feet about parallel to each other, the distance between the feet is the same as that of a normal human being. Nowhere on this rock nor on another rock outcrop that also has numerous similar tracks upon its surface, is there any sign that these creatures had tails.

The *Science Newsletter* followed the original report by an article under the title, "Geology and Ethnology Disagree." In part the account[10] reads:

So confident is Professor Burroughs that the tracks are real footprints that he has given the unknown animals a scientific name, *Phenanthropus mirabilis*. The name was suggested by Dr. Frank Thone, editor in biology of Science Service, with the concurrence of Mr. Gilmore. The first part of it translates as "looks human," and the second word simply means "remarkable."

Dissent is registered by David I. Bushnell, Jr., Smithsonian Institution ethnologist. Mr. Bushnell said, in a statement issued to the press, that every print he examined was undoubtedly an Indian carving. A prehistoric tribe or tribes, he believes, attached to them some symbolic meaning.

It is quite possible that the disagreement is more apparent than real. Unquestionably, many, perhaps most, of the footprint-like marks in the rocks over a wide stretch of country were carved by human sculptors. Their artificial nature is manifest at a glance, especially when they are found paired, arranged in even rows, and accompanied by other symbols such as circles and three-pronged figures like great bird tracks.

It is quite as possible that other tracks are genuine footprints, especially when they are arranged quite at random, as the Berea tracks are, and where the prints vary greatly in size, as some of them do. It is this circumstance, in part, that has convinced Professor Burroughs that the Berea markings are not artificial.

Dr. Alson Baker, a physician of Berea, recently wrote Science Service that he and Dr. A. F. Cornelius had made a critical examination of the tracks there, using a strong magnifier mounted on a tripod. He states:

We examined the arrangement of the sand grains in the deepest portions of the prints, with especial attention to the heels. The sand grains in the bottoms of the prints were much more closely packed than those in the slopes, and those in the slopes were more closely packed than those in the rocks an inch from the margins of the prints, or at any other point.

Each member of the party certified and checked these findings and we all agree that the imprints were made by pressure when the sand was soft and wet.

The fact that the sand grains in the bottoms and slopes of the imprints are of exactly the same kind as those in all other parts of the rock surface examined, seems to prove conclusively that the closer arrangement observed was not due to any possible drifting in of extraneous material.

Certainly these prints should not be ignored or hidden, but should be objectively studied and reported. A creationist has the obligation to consider them as rigorously as he expects an evolutionary paleontologist to consider his fossil finds, not making them say anything further than the facts indicate. Extreme care must be taken in positively identifying the maker of a print.

At the present time I am undecided as to whether the prints are carvings or made by organisms walking. The following points would seem to favor the carving theory:

1. the great variability of the prints, namely three distinct forms.
2. the absence at present of any consistent stride pattern. This may have existed at an earlier date, before some of the prints were completely weathered away.
3. the similarity between Figure 14 and some of the Washington State Park prints from the St. Louis area.

On the other hand, the sand grain analysis would seem to support the idea that the prints were made by organisms standing or walking. In any case, it would be a mistake to make absolute statements as to the humanity of the makers of the tracks. Certainly the presence of the overburden (6 to 10 in.) on top of the prints does suggest a considerable time passage between production of the prints and their discovery. Before making a definite statement on the authenticity of the footprints, I feel the need for further study, particularly with respect to the sand grain count.

Checking all Pottsville sandstone outcrops is a monumental task, far beyond the work of a little better than a week. Several years would be needed for an exhaustive search. Dr. Burroughs said there were no other prints that he regarded as authentic anywhere in the state of Kentucky. This raises doubt as to the value of such a search.

Mr. Finnell had heard of some in the next county towards Livingston, Kentucky. Search was made for these. After a number of misdirections and wrong information, a rock was located nine miles beyond Three Links, Kentucky. This was a rock on a slope, with the surface at an angle of about 45°. On this rock are the prints of a bear(?) along with some other marks. This rock was in the center of a logging operation carried on by the land owner, Mr. Joe Daugherty. Nothing was known by anyone of the history of the rock or its markings.

I suspect that the rock has slid down from its original location further up the slope. It is sandstone, presumably Pottsville. Photos of the rock are now on file. The clearing was being done with mule and human labor, and although the owner was polite, there was an understandable impatience with the interruption of his work. It might be worthwhile to make a return trip and get plaster casts, as well as use Dr. Burroughs' technique for determining whether the mark is carved or actually an imprint in unconsolidated sediments.

It is difficult to get information from the natives of the area in an endeavor to track down some possible clues. The present generation seems to know nothing of these or any other prints, and cares less. Tracing and checking are also made difficult because ownership of the land has changed a number of times, and no one remembers readily who now owns a given farm or plot of land. Another complicating factor is that in many cases what was farm land fifty years ago, has now reverted to forest to an almost unbelievable extent. All of this adds to the difficulty and magnitude of the task. Much of the area is being taken over by the government as part of the Cumberland National Forest.

A "lead" to the Pineville Mountain and Cumberland Gap area proved a false alarm. But in the latter area it was ascertained that a footprint had been found in Mammoth Cave (see Figure 19). A few days were spent in that area. It was hoped that additional information could be gleaned as to the survival of footprints over long periods of time. Due to tremendous number of visitors, the author could not be taken to the site of the footprint in Mammoth Cave. However, through the courtesy of Chief Naturalist George Olin, files of prints were made available and permission was given to make copies of the prints; and, copies were made of prints of the Indian, Lost John, who was believed to have been contemporaneous with the makers.

A footprint can be clearly seen in the hardened mud of the cave floor as can be noted from the accompanying photo (see Figure 19). The maker of the print, and Lost John as well, penetrated great distances into the cave looking for gypsum.

Figure 19. Footprint in hardened mud floor, Mammoth Cave, Kentucky. The remains of "Lost John" (an individual believed to be contemporaneous with the maker of this print) were dated at 2470 B.C. by C-14 analysis.

But no one knows why they were looking for it, or what they did with the gypsum when they found it. Lost John apparently lost his life when a block of the wall came down on him while he was underneath chipping gypsum. Lost John is only on display in the depth of the cave. Lost John has been dated by C-14 methods at 2470 B.C.

Mr. Olin also introduced me to Dr. Watson of the Cave Research Foundation. Representatives of this group were at work in the cave system under Flint Ridge in the Park adjoining Mammoth. The Cave Research Foundation had also found footprints both in dust as well as in mud, both barefoot as well as shod. These were located some 2½ to 3 miles into the cave. These prints were about as far into the cave as is the print in Mammoth Cave. Dr. Watson offered to take me down to the prints, but he also indicated that it would be dangerous and strenuous, so I politely declined, since for my purposes there was nothing to be gained by direct observation.

Postscript

As a postscript I would draw the attention of interested readers to the October-November, 1970 issue of *National Wildlife.* The pertinent article[11] is entitled "On the Trail of Bigfoot." In October 1967, Roger Patterson had encountered a large bipedal creature walking through the woods near Buff Creek, in the wilderness of northern California. His horse threw him as he was taking pictures but he did manage to shoot a few 8 mm frames of the creature. These few feet of film showed the outline of a large hairy anthropoid, about seven feet tall and weighing about 400 pounds. The idea of any creature like that loose in the California woods seemed so far-fetched that Patterson was accused of fakery. He

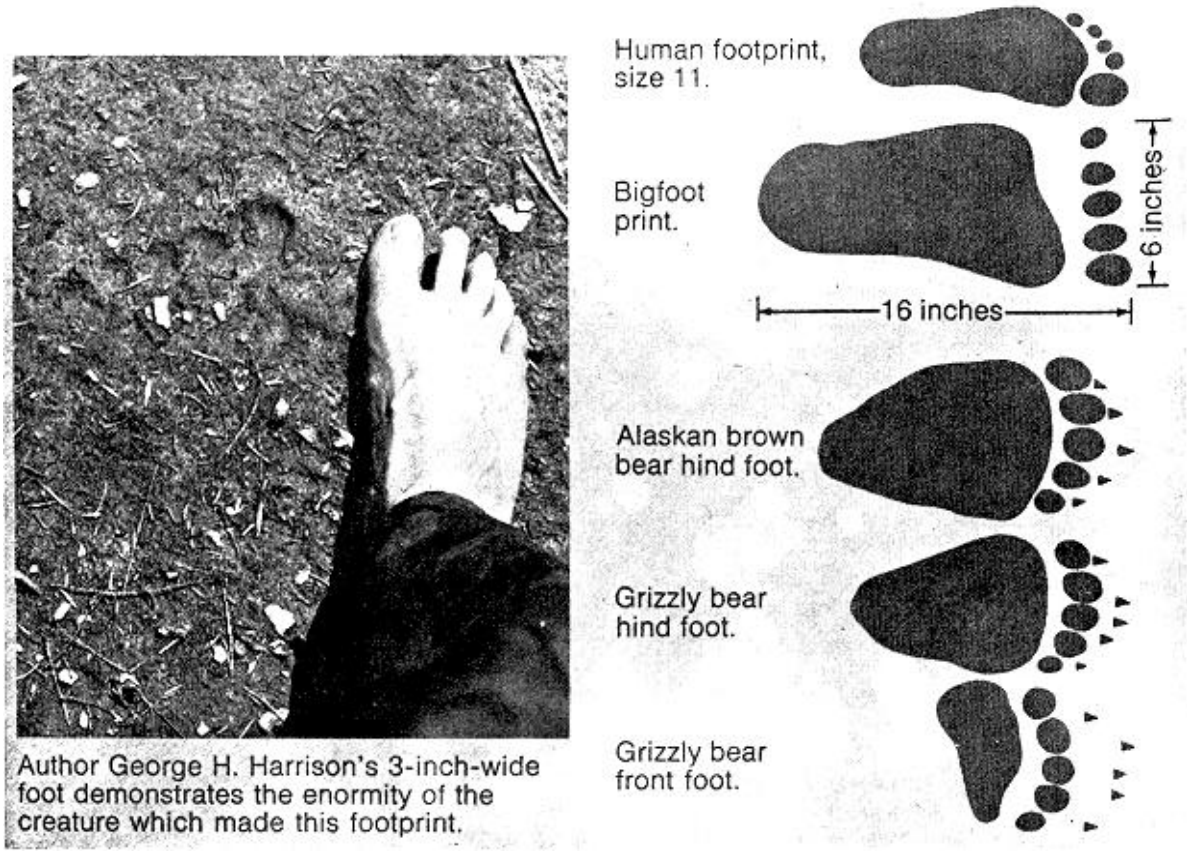


Figure 20. Impressions of Bigfoot. These photographs with accompanying captions are reproduced by permission from the article, "On the Trail of Bigfoot," by George H. Harrison, October-November issue of *National Wildlife*, 1970.

submitted to a lie detector test, which convinced the operators he was not lying. (Another article with "shots" from the film appeared in *National Wildlife,* April-May, 1968.)

In June, 1970, George H. Harrison, managing editor of *National Wildlife,* joined an expedition to the Buff Creek region, led by Robert W. Morgan of Miami, Florida. Probably the most impressive evidence they encountered was the series of tracks, ten in number, that appeared fairly fresh. They were sixteen inches in length and eight inches in width (see Figure 20).

Accompanying the tracks was some strange fecal material. The latter was described by a biologist as being "not cow or elk. It has to be bear, or what we are looking for." The results of the continuing search for the American "abominable snowman," "yetti" or "big foot" will be awaited with considerable interest. Harrison indicated that before the trip he was a 50% "believer" and after the expedition he became 85% "believer." Obviously, if "big foot" is really identified, we might have a descendant of the originator of the giant footprints reported in Texas.

At this point, although the press of other matters has produced a hiatus in my studies into fossil footprints, I am still keenly interested in the subject. During the early part of 1971, I will be looking at footprints in the Paluxy River area in Texas. Should the results prove fruitful they will be discussed in another report.

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[2]Schoolcraft, Henry. 1822. Communication, *American Journal of Science,* 5:223ff.

[3]*American Encyclopedia.* 1778-1803, Supp. vol. 3:344.

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[7]*Science Newsletter,* December 10, 1938.

[8]*Berea Alumnus,* November, 1938, pp. 46-47, "Human-like Footprints, 250 Million Years Ago."

[9]*Ibid.,* pp. 46-47.

[10]*Science Newsletter,* December 10, 1938.

[11]Harrison, George H. 1970. On the trail of Bigfoot. *National Wildlife,* 8(6):4ff. October-November.