

O. C. Marsh
Cuyahoga Falls, ^{O.} Nov 22nd 1866

Dear Sir

Your letter of Nov. 3rd was received some time since. And have neglected to write as I was securing the specimens wished for; I ship you to day by Express a box of specimens which I hope you will receive all safe

The "cone in cone" formation occurs here in the shale which underlies the sandstone. (Specimens 1. to 14. inclusive)

A workable bed of Coal occurs about eighty to one hundred feet thick. The shale is of varying degrees of hardness, some layers being hard enough to resist the action of the weather, while others tho. just as distinctly stratified, crumbles at the least touch, and on exposure, are soon undistinguishable from unstratified clay (see Box 5) Layers of iron stones? from one to two inches in thickness (Specimen 6?)

at perpendicular intervals of one or two feet, and interstratified with the shale, and immediately underneath one of these layers, or bands of iron stone, about twenty feet from the top of the shale is interrupted and in frequent deposits but always at the same geological level, is found the "Cone in Cone" formation; these deposits are only of a few feet each in extent, but are exposed for a distance of half a mile, or as far as the shale is exposed. There are occasionally two distinct layers of the "Cone in Cone" the lower specimens which is thicker, softer, and has its peculiar more distinct, resting immediately upon the soft shale; the upper specimen is thinner, harder, and with a less distinct structure separated from the lower by a thin seam of clay, and in contact with the iron stone above it. When there is a single layer, it has the character of the upper one of the case where there are two. These deposits of "Cone in Cone" are of but a few feet each in extent, disappearing by thinning out

(Specimen No 9) as by a gradual top of their structural character (Specimen 10) The axis of the cones is always perpendicular or nearly so, and with a single observed exception the base of the cone is downward. In a single instance, a thin deposit of the "Cone in Cone" occurs directly above the iron stone, and in this case, the base of the cone is upward (Specimen No 11). A single proposition will correctly give the location, and position of all observed cases of the Cone in Cone here. "It is always found in immediate connection (above or below) with the iron stone, and with the apex of the cone toward it."

No 12 is a specimen of the two layers with lower one much distorted

No. 14. is a piece which was thrown out and exposed to the action of the weather for about thirty years. Additional specimens can be furnished if desired in almost unlimited quantities. I have never seen the same structure elsewhere.

I should be pleased to learn the result of your investigations and any

14
information that I can furnish you
in addition to that already given I
will be glad to do so.

You will find a number of
specimens of the shale in the sort that
are numbered, but of which I have said
nothing. They came from below the "cone
in cone" a distance of eight or ten feet.
Hoping to hear from you soon

I remain

Yours Respectfully
A. H. Sill

E. N. Sill, President.

15557
Jas. H. Stanley, Cashier.

SUMMIT COUNTY BANK

Cuyahoga Falls, O. Nov 24th 1864

Mr O W Marsh

Dear Sir

In my letter to you with Geological Specimens, I neglected to say that the numbers were placed on the top of the Specimen; and thinking that it was necessary to show that I write this to let you know the fact. All of the "Com in Coni" with but a single exception were found with the point up

Yours very truly
E. N. Sill

E. N. Sill, President.

15558
Jas. W. Stanley, Cashier.

First National Bank

Cuyahoga Falls, O. Feb 26 1857

Mr O C Marsh

Dear Sir

In The last
letter I received from you, you
said you was to be gone the next
week, and after that, you would
Examine the box of Specimens
I sent you, and let me hear
from you in regard to them;
have you done so, and did
they reach you in good Order.

Did I mention, that the bed
of Shale, in which they were
found, was, according to
Prof. Newberry's testimony, about
Six hundred feet deep.

Please let me hear from
you in regard, to the Specimens
sent and oblige Yours Truly
E. N. Sill

Q.
Cuyahoga Falls, Ohio 10/17

Mr. Wash

Dear Sir

I'm your letter of Mch. 12. You ask the following questions. "1st Is the ironstone layer (with which the limb occurs) a continuous layer or C." It is a continuous layer, and also occurs in layers of gessate, or less thickness, all through the shale, separated by space, filled with shale, from six inches to one or two feet in width. The limb is only found, however in the same geological level, and not continuous at that level, and not continuous at that level.

"2nd When the two layers of limb occur together, how thick is the seam of clay or shale that separates them" I never saw it any thicker than the specimen I sent you and it is not often that you will find it with any seam that will separate. 3rd In the instance when the limb occurs above the ironstone was there always also a layer below it; and if not, was there anything peculiar about the layer of ironstone to distinguish it from when the limb is below"

It is never found above the ironstone without. it is found below also. and it is very rarely found above. I have never found it so, except in two or three instances. I once found two seams, some twelve or fifteen inches apart. One above the other, but both thin. Neither of the above seams were one the same level as the original seam, but one below the level, and the other above it. "4th You speak of a coal seam, 100 feet above the C. in C. Layer is there any Conglomerate between them & C."

The C. in C. Layer is between twenty and thirty feet in the shale, below the Conglomerate which Conglomerate extends to the coal seam and above it. "5th Have you observed any ^{insects} in the shale near the C. in C."

I have found fossils all through the shale but not very frequent. they consist mostly of *Spirifer*. and at a greater depth in shale an undiscrised species of *Lingula* is found in great quantities. and I once found in the shale about 100 feet below the C. in C. a *Oryctolites* fossils similar in its

1556
 Markings to the *Lepidodendron* of the Coal formation. "6th Do the shale containing the C. in C. lie nearly or quite horizontal, or are they inclined & C." As far as I can see, without an actual survey with instruments, there is no dip to the shale in any direction. and the Axis of cones is always at right angles to the horizon, as well as to the layers of shale. You also ask in your letter of April. in reference to specimen marked no. 13. "Have you noticed a hard layer at the base of the cones in any other case. and did the layer in this instance" extend to any distance." The specimen I sent you, was the only instance that I have ever noticed where that occurred, and the extent of that, was perhaps, about one square foot.

The shale in which the C. in C. occurs is strongly impregnated with Alumina so much so, that it can be gathered almost pure, where it erodes; being full 95 per cent of Alum. Did the detached hollow cones, I sent in the small box, reach you all safe

Yours very truly
 J. H. Hill