



Fall of a meteorite in Missouri, February 13, 1839

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The addition of hydrochloric acid is even indispensable to prevent also the precipitation of the salt discovered by Serullas, the crystals of which are readily distinguished by the unassisted eye.—*Journal de Pharmacie*, Aout, 1839. —————

FALL OF A METEORITE IN MISSOURI, FEBRUARY 13, 1839.

On the afternoon of the 13th of February, 1839, a meteor exploded near the settlement of Little Piney, Missouri, (lat. $37^{\circ} 55'$ N.; lon. $92^{\circ} 5'$ W.) and cast down to the earth one stony mass or more in that vicinity. Mr. Forrest Shepherd, of this city, who was at the time exploring this region in the line of his profession, viz. that of a mineralogical and geological surveyor, hearing of the explosion of the meteor, exerted himself to collect all the circumstances of the occurrence. He subsequently succeeded in obtaining several fragments of one of the stones thrown down by the meteor. Mr. Shepherd has favoured me with an opportunity to examine these fragments, and has also communicated to me the details below related.

The meteor exploded between 3 and 4 o'clock P.M., of the 13th of February, 1839, and although the sky was clear, and the sun of course shining at the time, the meteor was plainly seen by persons in Potosi, Caledonia, and other towns near which it passed. At Caledonia, which is about nine miles south-westerly from Potosi, the meteor passed a little north, and at the latter place, a little to the south of the zenith. Its course was almost precisely to the west. The most eastern spot at which it was seen is about fifteen miles west of St. Genevieve, (or about lat. $37^{\frac{5}{6}}^{\circ}$ N.; lon. 90° W.)—the most western is Little Piney, near which it exploded. To the observers at the latter place, the meteor appeared of the size of a large star. They represent its motion as very slow; but do not state how many seconds it was in sight. We have no data for determining the meteor's size, or velocity, or the inclination of its path to the horizon. The direction of the meteor's motion with regard to that of the earth, was probably such that the velocity of the former would be apparently diminished; and as at Little Piney the meteor must have traversed only a small arc, its motion, to an observer there, would appear quite slow. At the time of the occurrence, Mr. Shepherd was on the western bank of the Mississippi, near St. Mary's landing, and heard a distant report, which he was afterwards inclined to refer to the explosion of this meteor. At Little Piney, Mr. Harrison and others saw the meteor burst in pieces, and in a minute or a minute and a half afterwards, they heard three explosions in quick succession. Some of the inhabitants went in quest of the stones which they supposed had fallen, and finally found a tree which appeared to have been recently injured by the collision of some solid body. Near this tree they discovered (although the ground was covered with three or four inches of snow,) one of the meteoric stones, about as large as a man's head, partly imbedded in the earth; and from the circumstances of its position and appearance, there could be no reasonable doubt that this was the body

which had struck the tree. It is to be hoped that further search will be made for other portions of this meteorite.

The total weight of all the fragments which Mr. S. has brought home, is 973 grains. The specific gravity of one of the small fragments is 3.5; but different portions of the stone may vary slightly in this respect, as they may contain more or less of the metallic matter. The resemblance between this meteorite and those of Tennessee, (Silliman's Jour. xvii. 326.) of Georgia, (Ib. xviii. 389.) and of Weston, Conn., is very close, and one might almost imagine that they were all parts of the same original mass. The cohesion of the stone is not great, as it crumbles under a moderate blow. Two of the fragments retain portions of the crust or exterior coating. This is a fifteenth of an inch thick, and bears evidence of intense ignition and partial fusion. It is black, with a wrinkled or cellular surface, and is traversed with seams. The general colour of the interior is an ash-gray. The whole mass is studded with metallic particles, (varying from the size of small shot down to mere points,) and presents numerous rusty spots, and occasional small spheroidal concretions which do not appear to differ in materials from other parts of the stone. The little metallic masses (doubtless of nickeliferous iron) are attracted by the magnet, and are generally permeated by the earthy matter. They are mostly of an iron-white colour, but several are yellow and slightly iridescent. One of these minute masses being removed from the stone, it was by the hammer at once extended into a thin lamina, and was evidently malleable. An analysis may be expected hereafter.

Sept. 25, 1839.

E. C. HERRICK.

Remark.—Having been familiar with meteorites and examined many of them, I hesitate not to say that I am perfectly assured of the genuine meteoric origin of the fragments described above, even without any reference to the testimony.—*Sen. Ed.* [Dr. B. SILLIMAN] *Silliman's Journal*, vol. xxxvii. p. 385.

ON THE SUPPOSED EXISTENCE OF FLUORIC ACID IN ANIMAL MATTER. BY G. O. REES, M.D., F.G.S.

In the year 1802, Morichini published a paper, in which he declared fluoride of calcium to be an ingredient in human teeth: he was led to examine that substance, from having succeeded in detecting the fluoride in a specimen of fossil ivory. Mons. Gay-Lussac repeated these experiments: and in the 55th volume of the "*Annales de Chimie*," he states, that the fluoride exists in recent as well as in fossil ivory; and that he had also succeeded in detecting it in the tusks of the wild boar. Fourcroy and Vauquelin subsequently published a memoir in the 57th volume of the "*Annales de Chimie*," in which they positively denied the existence of fluoride of calcium as an ingredient either in recent ivory or the enamel of teeth: they found it, however, in the fossil ivory of Argenteuil and Lourque, though it did not appear to exist in specimens from Siberia and Layo.