

1937, Dec. 19.

Dear Sterling:

Perhaps you were stunned by Bob's quick verdict that your recent finds were not of the Crescent meteorite. Brown has a snappy judgment, and while we catch him in error occasionally, he is right the great majority of the time. Unfortunately, I think this is one of those times.

When I first got the rocks from you, there were a few dubious points in my mind as I examined them, but I put them up for the night with a feeling of about 90% that they were meteoritic. Upon subsequent and better examination in daylight (night light is always hard for such close points), my doubts grew somewhat and my decision vacillated, but I finally felt inclined to accept them as meteorites and so told Butler and Morse, in showing them the samples. However, I did say and decide that I would wait till Bob got here to really grind on one or test some fragments.

Now I think I must admit that I was wrong with you, for some work I did today pretty well convinces me these cannot be meteorites of any kind.

1. The crust of the original fresh Crescents is peculiar. It is thin and under low power magnification gives an impression of a sort of arrested intumescence. The ridges on it under a glass look like intertwining twigs, limbs, snakes, or what have you. The crust on your finds this time did not look anything like that. However, it did have some strong semblances of a fusion process of a more complete sort, and there were little depressions that could be pits. Sand grains clearly present were considered indeterminate, as they might be surface adherences. The red color is to be expected from the Permian soils. On this score the rock did not quite resemble what I had hoped for, but I felt it could still be a meteorite, the differences being due to weathering.

2. The interior of your rocks worried me more, especially the porosity. What constituent could have leached out? I could find only one speck that looked metallic, and knowing how easily some little crystal face or grain can sparkle and imitate metal I was convinced; however, the Crescent is a metal poor meteorite, so that this point was inconclusive. What worried me more was an inability to account for the vast change which weathering had brought about, assuming the rocks were meteorites, for comparison with the Crescents showed no trace of similarity. I want you to look at these thoroughly when next here. They have a generally black ground with not too definite chondrules accompanied by white or gray material.

Nevertheless, having some optimism in my soul, I thought I could find traces of chondrules in your rocks, and without going any farther I stood reasonably sure they were meteorites.

Upon Brown's arrival and assurances that he had no objections to my tearing up some of the material, I crushed the smallest fragments (the scraps in one cigarette paper), watching them with a magnifying glass at various stages of crushing. While certain types of chondrules break with the matrix, generally some of them come free from the groundmass; I detected nothing of the sort in the material broken up. The only thing I did see were a few extra hard little pieces of cindery-slag like appearance. The fine powder was tested with a magnet, and not even the tiniest piece was found that was attracted. Borax bead tests were then tried, a peculiar blue-green being repeatedly obtained; this best fits copper which I don't quite understand. I then tried the nickel test on the remaining powder, and it was quite negative. Finally, I took your large stone and smoothed off one almost flat face on a carefully cleaned corundum stone. The resulting interior is fatal. There is no resemblance to a meteorite, and every appearance of very fine sand grains intermixed and cemented by iron oxides: hematite around the edge and in irregular streaks poorly traceable thru the interior, with yellowish to brownish limonite filling the rest of the space. No metal whatever is revealed.

Now you know why I delayed answering. I didn't want to say till I was sure. When you sent the pieces, you certainly packed them well--that box was taped up like a broken wrist!

Bob was really worked up over his labors on the 1920 fireball; he even wrote me a long letter while he was up, which is most unusual.

I do not have any cards of the "calling card" variety any more; my supply of these ran out and they never seemed to do any good, so I abandoned them in favor of the circulars. While I don't flatter myself that anybody reads one of these all the way thru, they are larger and don't get lost so easily around the average home. I'm enclosing a few, and will gladly send more or give you more at any time. Requisition such quantity as you desire. I often jot my name down on the circular, and you could just use your name. As a matter of fact, I have no record of any direct return from the use of these circulars, but I can't help but believe that something of the sort is worth while.

This "Class I" phrase that the airways forecast now uses at times is amusing because it often sounds very much like "Glass eye". My mother heard me listening to the signals the other day and wanted to know what the man said about a glass eye, and I had had the same experience when they first started the usage!

Best of Christmases and New Years for all of the Bunch's.