1966, Jan. 11.

Dr. E. P. Henderson,
U. S. National Museum,
Washington, D. C.

Dear Dr. Henderson:

Thanks indeed for your Dec. 27th letter and the photo's of the meteorite surface showing the hardness tests. This Vicker's hardness number is not one with which I am familiar; I think the only papers I ever read used other scales. Do these readings indicate about what would be expected from a meteorite, or is the piece too hard or too soft to be typical or normal? I think I told you in my Nov. 29th letter that Glenn Huss thought it was unusually soft when he etched the small pieces.

I am writing the finder and asking pointedly whether these smaller flattish pieces were actually found in the same hole as the larger, more typically looking meteorites, which have considerable curved and irregular faces as you noted from the Kodachromes I submitted. As also stated in my Nov. 29th letter, I was told they were but I was not present. The bigger masses were lodded with a winch and crane on an R.E.A. truck that was on the highway about 60 feet from where the pieces were found, and possibly dragged over to the fence line with the same equipment. I am wondering if these two smaller pieces could have fallen off or come from that equipment in some way, but this hypothesis seems very weak.

You spoke of the "alteration" on the larger sample I had sent to you, and I presume you mean "oxidation". I will mention that the oxide in the hole was not extremely plentiful; there was enough to gather up flakes easily with an Alnico, and I have a small bottle of such rust that I brought back. But it was nothing like the huge quantities of oxide surrounding the Lake Murray iron which was found about 30 miles southwest of this locality some years ago and identified by Lincoln La Paz. However, that iron was found in an eroded drainage ditch or draw where it had long been exposed to much water after every rain. The Tishomingo irons were found on a relatively flat well-drained area on a sort of ridge, with creeks a short distance away on each side. Under present conditions it was in a relatively dry spot.

While I have been gleefully teasing you about this puzzle and your predicament, I do seriously realize that the burden is on me to prove it is a meteorite--just as the burden is on the exponents of flying saucers to prove their true existence and character. (Not that I am a flying saucer advocate --quite the other way around.) I therefore appreciate your considerable help, and that of your associates, in trying so hard to find evidence that it is a meteorite.

I am sure you have realized that it would be unlikely to find pieces of 30% nickel iron in this God-forsaken region of Oklahoma at the location I have described. Tishomingo was once the capitol of one of the Indian tribes, but I don't believe they or any white men in that region ever ran a smelter!

I am also quite puzzled at your insistence in referring to this as a possible ataxite. To me and by all definitions I ever read, an ataxite is something shows no figures. I realize your point is that the figures herein are meaningless as to structure because of the homogeneity of the mass, and you can't call it an octahedrite because there is no differentiation into kamacite, taenite and plessite. On this basis, I can't see that the absence of phosphides is significant. There seems no doubt, however, that if this is meteoritic it will be in a different class as "martensitic", "crystalline", or what have you.

I respect Mr. Goldstein's pronouncement but I wish he or you would explain to me the long narrow band that ran across all the others on the little piece I let you have. Does this habitually occur in martensite? And what are the funny spots that showed up both pre and post etching? There must be some kind of difference in structure if there is no difference in composition--something has to cause these spotted areas.

I can understand the Al_{26} being indeterminately low, and agree with you that everything now hinges on the He_3--unless, of course we find a way out by finally learning that the bigger pieces turn out to be different, in which case they could be meteorites and the little ones not. But I am sticking my neck out that they all are. In other words, if the finder would sell them to me tomorrow for one or two dollars a pound I would buy!

I may call you from New York where I will be at the St. Moritz from January 16 thru 22, but I doubt if I can get down to Washington. I still say you ought to move the Smithsonian out into the middle of the country, and that it's bad to have so many meteorites concentrated up there!

Sincerely,