10,000 to 1,000,000 years it might be possible to detail the rate of breakdown in specific areas. The time actually involved is closer to five billion years, the approximate age of the earth-moon system during which, it is assumed here as a working hypothesis, a continuous bombardment took place. At best the weathering rates can be only estimates of order of magnitude for broad application to meteorite scars in all possible locations. Weathering rates estimated for continental masses and great mountains are about 80 meters per million years, and for land masses in tropical regions 225 meters per million years. Circular ridges of less than 750 meters relief could be broken down enough in 5 million years, to be unrecognizable, and much more easily subject to being covered by wind, tide and vegetative actions. Therefore, it might be expected that only 1,000-1,200 out of the million remain fairly intact and ready for *identification.**

Of this "1,000," the water-ice mantle effectively conceals 75 percent by submerging the small ones and perhaps camouflaging the larger ones as sporadic island arcs or arcuate coast lines. What can the earth now say with regard to the "250" remaining? It can say that in the last few years a staccato tally of meteorite scar finds or recognitions (Table I) has raised the total to 42-50 at this writing. This is in marked contrast to the inventory of structures which were compared with the "giant" meteorite crater in Arizona, for decades not universally recognized for what it is, and with the tremendous knockdown of forests in the 1908 Siberian fall (Fig. 1).

The increase in identifications of meteorite scars is closely connected to the interplay of pure and applied research directed to the synthesis of high pressure materials and astute geological field work. The synthesis in 1953, by L. Coes, Jr., of a dense form of silica, coesite,[1] found to require pressures of at least 20 kilobars at 500°C,[2] remained an interesting and challenging fact for six years,

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* Using other criteria, Paul D. Krynine, Professor of Petrology and Sedimentary Mineralogy (Pennsylvania State University), arrives at a survival number up to 10 times greater than the present author, as indicated in his letter:

"Without making any estimate as to the number of meteorite impacts that may have left scars upon the earth's surface, it seems to me that the number of scars potentially visible at the present time depends upon the following factors:

(1) All scars under the oceans are invisible.

(2) Scars on the continental surfaces have been reduced in number by two main processes of disappearance.

(a) Disappearance of scars through *covering-up* by later sediments ranging from early Pre-Cambrian to Recent, including glaciers. I estimate that not less than 90% of the original scars on the continents have disappeared through this process.

(b) *Erasure* of scars through process of tectonic uplift and erosion. I estimate as a rough approximation that at least 90% of the scars that survived (or escaped) covering-up have disappeared in this fashion.

This would leave as a potential maximum of visible scars perhaps 1% of the original scars on the continents, or probably considerably less."