

Gaskett 25 Claremont Square  
London N

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My dear Sir,

Looking again at the letter I quoted in the Athenæum Oct 1866 about "Geological Miracle Assumers", I find that a few points therein were needlessly exaggerated in my anxiety then to make out a great seismic convulsion, which after all is not required by either Scripture or the facts extant. The mere downpour of about 400 feet of rain universally would account for all, without the levelling, or remoulding of the crust that I inferred from the phrase "the fountains of the great deep were broken up."

In my sixth paragraph, p 437, the words, "omitting all effects of the earth's attraction" were quite needless, and should not have been used. Nor in paragraph 11, the sentence numbered (6) about

"the Earth's attraction". The Idea that the Earth's gravitation might modify the comet's course, so as to gather it to her, independently of its regular orbital course is exaggerated, and need not have been suggested.

You see I got the chance <sup>for a comet falling</sup> in a century, of one in 2308, by a distinct minimum of data. The frequency of comet falls must be above 4 per million years, instead of Babinet's one in 15,000,000. What I insisted on was that Lyell or Darwin could not get several million years of uninterrupted course of present operations without miracle. They might as well claim that a field in England has been untouched by atmospheric rain for a year or two.

Five of the points enumerated in paragraph 11 are fair enough. The sixth should be omitted. This one might be added. I have reckoned all the cometic orbits as parabolic. But they would be mostly elliptical, and that would make them cut the spherical film more obliquely than a parabolic one with the same perihelion distance. The "ellipses of danger" would be longer than I have

reckoned - In a parabolic orbit, the comet's velocity (at our distance) would be  $\sqrt{2}$  times the earth's velocity of 18 or 19 miles per second. It would exceed our velocity perhaps 7 miles per second. But in all ellipses it would be less, and might exceed us by only 5 or 4 or 3 miles per second. I assume it to overtake the earth in her own direction, in a path of small inclination, and as near the perihelion distance 1 as any has been. The ellipticity of the cometic path would be most likely that of one that had previously been "captured by Jupiter," and turned into an orbit of only 6 or 5 years' period. The comet itself might be very large, approaching the size of that of 1811. If that overtook us with no greater excess of velocity than 4 miles per second, it would take days, three or four whole days, to pass over us. But with so small a difference of speed, the earth would gather the whole before it escaped.

Now an universal downpour of rain surely does satisfy the Bible story better than any sea-flood. The sea is not once mentioned in the Genesis story, if we admit that the "great abyss" is the same as had been so called in Chap I. The sole cause that God mentions in the predictions is rain.

Those predictions are the passage I most insist on, more than the narrative. Again Christ mentions a point perfectly new & absent from the Old Testament, namely that "the day Noe entered the ark" — not the week nor the month — but the day that Noe entered, the flood came & took them all away" — It not only drowned, but took them bodily away — One Talmudic tradition says it was hot water, and the Parsee account, that the water clad the ground everywhere to the height of a man. Even on the slopes of hills, I suppose it to have been five or six feet deep.

Of course "all important centres of civilized life," as you say, p 15, were permanently submerged and are now in the sea-beds that are less than 600 feet deep. Our present lands were all antediluvian high bleak table lands, only for the hunting classes.

Yours very truly

Ed Garbett.

