

The five points - (1) The creation of man (2) The creation of the world (3) The extent of a day in Genesis 1 (4) A discussion of the Gap Theory (5) Discussion of evolution. We have the microphone in the back. I hope it is turned on and if one of our panel has a question - Mr. Evancrook. This question just has to do with the actual dating of the world. I guess probably Dr. Willets could answer this one. The only question that I had was, what limits could we set on the plus or minus error of the three respective determinations that have been made? Could you give us an actual figure or give us some idea of what error in these determinations could be made? And the second part of this question was I don't think it was quite clear in the last part on the chemical determination from radio-active decay, just quite what was going on there. What was the uranium decomposing to by means of radio-active decay? I think that was brushed over a little too quickly.

The limits of error on these calculations may depend a little bit on the method of calculation. I would say from figures I have seen that they seem to fall in the range from 2 to 3 billion years which if we took a figure of $2\frac{1}{2}$ billion years plus or minus a half a billion years. Now that seems like a good bit of time to you and me but in geologic time this is a rather small figure when you figure how large the total figure is. In other words, in scientific calculations you often express your error in terms of a per centage error - how large the error is in terms of the total figure. When it gets to be that far back the half a billion years one way or the other gives an order of magnitude or an order of size or time rather than specific years. To answer the other half of the question - uranium 235 or uranium 238, both of them publicized widely as components or at least of interest in the atom bomb. In atomic energy we have what we call nuclear fission - this is a splitting in half, relatively, of the atom to give two pieces approximately half the size of uranium, plus a whole lot of particles that are called neutrons. This takes place when the uranium absorbs a neutron from an outside source somewhere - from another uranium atom or from some other source. Now what we were talking about this evening is not atomic fission but natural radio-active decay. Now a uranium atom in its first step will kick out, if I remember correctly, a particle about the size of a helium atom. Now in our atomic weight scale, this has a value of 4 in mass, where the uranium atom may be 235. Now the particles keep on being lost by these radio-active elements until finally the element