

Department of Physics,
Osaka Imperial University,
Osaka, Japan, June 6, 1938.

Dear Prof. J. Chadwick,

I esteem it a great honour that my previous work won your praise, which, I fear, was far higher than it deserved. It is also a pleasure that your colleague Dr. E. J. Williams got recently a new evidence for the existence of the charged particle with the mass about 200 m. I do not receive from him the photograph, which you mentioned, as yet, but I express my heartfelt thanks to you and Dr. Williams in advance. In this connection, I should like to inform you that a cloud chamber photograph obtained by Mr. P. Ehrenfest ^{to me} recently seems to indicate the annihilation of the heavy electron. (C. R. 206, 428, 1938.) According to him, a track of the heavy electron of positive charge with the mass about 200m and $H\beta = 1.9 \times 10^5$ gauss.cm ends at the wall, from where a positron track with $H\beta = 1.6 \times 10^5$ gauss. cm starts. The energy of the latter is about 100 mc², which suggests to us the following interpretation. The heavy electron slowed down in the wall annihilates into a positron and a neutrino each with the energy 100 mc² as expected from our theory (III, §8). Other interpretations are not, of course, excluded completely.

I sent you reprints of our papers several days ago. Give my best regards, if you please, to Dr. E. J. Williams.

Yours very truly,
Hideki Yukawa.

Chadwick 38 Apr 28 (2) 野村