

TO CONTRIBUTE a personal note about the work and influence of Sir J. J. Thomson is for me a labour of love. But I would point out that it is written in a hurry with no time to look up references, rather under battle conditions, with air raids in operation a good deal of the time; and if there is anything in it that anyone disagrees with, I am prepared to discuss it later on when times are quieter.

"J. J." was a great investigator. His methods were his own but in his hands they were effective. He made many important discoveries; I will only mention two.

He will be immortal as the discoverer of the electron. There were others who were on the fringe of this, but he was the only one who realized that what he had made was a revolution. The others regarded what they were doing as a passing incident, but he followed it up and developed it. It is now the foundation stone of our ideas of the structure of the universe.

In 1881, he wrote a paper in which he showed that a moving electric charge possessed a mass solely in virtue of its energy of motion. This was the birth of the idea that mass was in some sort a measure of energy: a result which is generally attributed to Einstein. But a good many masons, notably Larmor, worked at that building before Einstein pointed at it.

My main impact with Thomson started in 1900, when I graduated at Trinity College and started working in the Cavendish Laboratory. His personality seemed to me terrific, and it was. After six years I felt that if I stayed there much longer I should not have any personality of my own left and in 1906 I went to Princeton.

"J. J." was a good lecturer, but his lectures always seemed to me more like a barrister's brief than a model of scientific reasoning. It was not that way he built up so many supercharged investigators. The main thing was his vital personality, his obvious conviction that what he and we were all doing was something important, and his camaraderie. His knowledge of athletic records was incredible; he was a veritable Wisden of all the sports. Also seeing the important results he obtained with rather poor apparatus encouraged us to persevere in our efforts with the very inferior equipment of the Cavendish Laboratory at that period. No doubt the time also was opportune, but he was the man for the time.

This is a difficult analysis really, but whatever it was and however it happened he built up at the Cavendish Laboratory the greatest school in experimental physics that had ever been built up anywhere until that epoch. It would exceed the limits of this article to write out a list of those who achieved high distinction and there is also

the difficulty of deciding just where to draw the line. But I can mention a list of names which express a definite fact and that is those of his pupils who have been Nobel Prize winners. The award of these prizes started in 1901. He himself was awarded the prize for physics in 1906. The Nobel Prizes awarded to his pupils were: Rutherford (1908), W. L. Bragg (1915), Barkla (1917), Aston (1922), C. T. R. Wilson (1927), O. W. Richardson (1928), G. P. Thomson (1937). There is no one else who can show a list of eight Nobel Prizes awarded to him and his pupils during his lifetime and it is unlikely that there ever will be. All these people actually received the important part of their training under "J. J." and in the Cavendish Laboratory.

He was a great inspirer. I cannot think of any other man who, in such measure, did so much intellectual good to so many others in his own lifetime.

OWEN W. RICHARDSON.

SOME forty years ago while studying physics under Poynting at Mason College I first met the great "J. J." Though with no inkling of his future decisive influence upon my life, I was impressed with his striking personality. Eager desire for knowledge burnt in him like a fire, and he had the happiest knack of kindling it in others. His remarkable work "Conduction of Electricity through Gases" must have been an inspiration to many. It certainly was to me, and stimulated my research on vacuum discharge which ultimately took me to Cambridge to be his research assistant during 1910-13. Although this was comparatively late in his career as Cavendish professor, his fertility in ideas still appeared to be inexhaustible and supplied the whole laboratory with subjects for research. Still more amazing, and to me akin to magic, appeared his intuitive ability to diagnose the cause of trouble in an apparatus without working with it, for he had no manipulative skill.

"J. J." was an excellent lecturer with a voice that, on occasion, could surmount any acoustical difficulties or, more accurately, blast its way through them. Presiding at tea-time he was immense, and many of his pupils have since recounted how stimulating was his talk on all manner of subjects. Next to his natural kindliness, the character which endeared him most to the townsfolk of Cambridge, and gave rise to so many amusing and apocryphal stories, was that of the absent-minded professor careless in habit, wrapt in deep thought, gazing with unseeing eyes into the most unsuitable shop-windows. But beneath this dreamy exterior lay a shrewd North Country efficiency with which he ran, on a minimum outlay, his great laboratory, producing in a steady stream