of the theme discussed, however inadequate its mode of presentation, to the honored guest of the evening. James McKeen Cattell is himself an active scientific worker, one who has initiated in his own field of psychology many movements that have borne rich fruit. But he has found time, thought and energy to devote to the larger questions of the bearing of science upon life. He has given himself without stint to the better organization of scientific workers in all fields; he has striven valiantly for moral and financial improvement of the condition of academic workers; he has been the leader to the task of editing and diffusing the achievements of scientific inquiry. I do not need to press home the moral in connection with the intellectual obligation of which I have spoken. Laboring of the point is unnecessary as long as we have Cattell with us. He is a living example of the ways in which a scientific man can perform the supreme intellectual duty and as such we gladly greet and honor him this evening.

SCIENTIFIC EVENTS

RESEARCH IN THE BRITISH POST OFFICE[1]

WHEN the state purchased the telegraphs in Great Britain in 1869, the number of electrical workers in the whole country could almost be counted on the fingers. To-day the engineer-in-chief of the Post Office controls a staff of about 30,000 and maintains plant of a value of 130 million pounds. Starting from the needle instruments, skilled Post Office experimentalists developed the Wheatstone transmitter and receiver; instruments capable of operating up to 300 words per minute.

Captain B. S. Cohen, the engineer of the Post Office Research Station at Dollis Hill, in a paper read to the Institution of Electrical Engineers on February 1, said that these instruments still stand unsurpassed today in their design, workmanship and performance. It was not until 1912 that a research section was established. During the war period, the thermionic valve was perfected and at one stroke opened a boundless vista of possibilities in the way of universal telephone communication. The paramount necessity was to obtain the closest coordination between the research and the operating organizations. Without full access for research purposes to the working telegraph and telephone plant, the work of the research engineers would have been immensely increased. The Research Station at Dollis Hill was started in 1921 by using ex-army huts, and the permanent buildings were completed last year. Much excellent work has been done at this station which could not have been done elsewhere.

To the research workers at Dollis Hill the increase in the volume and weight of road traffic brought with it a new problem. There are apparently under the streets an ever-increasing number of cracked gas mains. Modern road surfaces make it difficult for this gas to escape into the open and so it sometimes accumulates in Post Office cable ducts and manholes, involving a serious hazard. The research engineers have developed a simple form of gas detector for general issue to Post Office workmen. The detector operates in a way somewhat similar to a photographic exposure meter. It utilizes a filter paper moistened with a few drops of palladium chloride solution and will indicate the presence of 0.05 per cent. of carbon monoxide, the dangerous constituent of coal gas.

The capital value of automatic switching apparatus installed in exchanges is now very large, and great precautions against corrosion have to be taken. Sir Robert Hadfield has said that the corrosion of iron and steel alone costs the world 700 million pounds per annum. Experiment shows that the life of galvanized iron stay wire is proportional to the thickness of the galvanizing. In some parts of south Lancashire, the normal life of a stay wire is little more than two years. It is now possible to estimate the life of any particular grade of wire in a given area.

In long telephone lines the "echo" used to be very troublesome but the engineers have invented, using valves only, a very efficient echo-suppressor. A non-reflecting room at the station has linings of cotton-wool one foot thick. This room has a totally silent background of noise. It is especially useful for listening tests where the threshold of hearing has to be found.

[1] *Nature.*

THE LEVERHULME RESEARCH FELLOWSHIPS IN GREAT BRITAIN

THE Advisory Committee of the Leverhulme Research Fellowships invite applications for 1934. These fellowships will be awarded to citizens resident in the United Kingdom for the assistance of experienced workers rather than to add to the provision already existing for workers in the early stages of their careers. The trustees have in mind particularly men and women who are prevented either by pressure of routine duties or by any other cause from undertaking or completing an investigation of value. No definite limit will be placed on the amount of individual grants, but they will be adjusted according to the circumstances of each particular case. Fellows will usually be required to work at or in connection with a recognized