

Letters to the Editor.

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Einstein's Shift of Spectral Lines.

REFERRING to my suggestion from Gullane on p. 280 in NATURE of October 28, Lord Rayleigh has recalled my attention to Prof. Eddington's admirable report on "The Relativity Theory of Gravitation," whereby I have been reminded that the predicted shift depends not on gravitational intensity, but on gravitational potential. This makes my revolving disc quite inefficient; it would seem that bodies of astronomical size are necessary for the test.

But since the shift is proportional to the square of peripheral velocity, instead of to the acceleration, it occurs to Lord Rayleigh that the high speed of positive rays curved in a magnetic field might facilitate its detection; for, as he points out, if their speed were 10^8 c.g.s., their radiation shift would be comparable to a fortieth of an Ångström unit.

But this same proportionality to u^2/c^2 raises the question whether, after all, the shift expected is anything more than the natural consequence of self-inductive increase of inertia due to speed. If a satellite suddenly gained a spurious inertia not subject to attractive force, its orbit would enlarge and its period lengthen. So it may be with electrons in a violently projected Bohr atom.

I appreciate Dr. Chree's friendly experimental caution in your issue of November 11.

November 12.

OLIVER LODGE.

The British Association.

WE have been asked by the executive of the National Union of Scientific Workers to send a contribution to the discussion in NATURE on the cause of "the apathy of local people of the educated classes to the presence of the Association" in the centres where it meets.

The majority of those who have taken part in the discussion appear to assume that this apathy is due to the failure of the Association to interest the general public in the utilitarian applications of science and their contributions to the material benefits of civilised life. Only one or two writers seem to have attempted to follow up the lead given in your editorial of September 16, which attributes the public apathy to "the neglect of national bodies like the British Association to adjust themselves to changing national needs. . . . The Association makes little endeavour to show the bearing of scientific methods and principles upon most subjects of vital importance in national polity and industrial affairs."

Prof. Soddy strikes the same note in NATURE of September 23, where he says "the vast body of the general public, disillusioned by the war, looks to them [scientific men] to provide a way of escape from the evils that threaten our civilisation." He points out that "scientific synthesis and the direction of the unique mental attitude, induced only by the actual discovery of new knowledge, to the conduct of public affairs are the real and peculiar functions of the Association if it is to regain its national position."

The executive of the union would like to endorse these views, and to suggest that it is not necessary to invoke the outstanding genius of Huxley and his contemporaries and to hold them up in invidious com-

parison with the men of the present day in order to explain the apathy of the public. The explanation lies rather in the message which Huxley and his contemporaries had to give to the lay public. Their appeal was not based upon holding up to public admiration the utilitarian benefits offered by science, important as these undoubtedly are. Their message appealed to the deep-seated complex of ideas, experiences, beliefs, and emotions which conditions every man's outlook on life. It challenged the static view of man's relation to his environment which was the heritage of dogmatic theology, and offered in its place a dynamic view, which revealed man as himself a part of the great stream of natural causation. As such it tore old prejudices up by the roots, roused fierce resentment in those who could not free themselves from such prejudices, and an equally fierce exultation in others who were smarting under repressions imposed by the authority of theological dogma.

Science (or, we should rather say, the bulk of the institutions and men who claim to represent science) has no such message at the present day. As is shown by the Rev. A. L. Cortie in his letter in NATURE of September 30, the sections which discussed questions such as the constitution of the atom and relativity drew good and numerous attendances; we suggest this was because these subjects touch on ideas of the nature of matter, space, and time—ideas which find a place, however vague, in the philosophy of life of a large number of people.

We believe that if the British Association and other bodies representing organised science are to regain the place in the public estimation which they held in the latter half of last century they will have to come out with a new message which, like that of Huxley and his contemporaries, challenges old-established points of view. Where the Association is to find a field ripe for such a message is suggested in your editorial and amplified by Prof. Soddy. While Huxley's message forced people to revise their old-established ideas and prejudices as to man in his relations to his natural environment, the public is now ripe for a lead from science in the direction of a fundamental revision of that part of its outlook on life which concerns the relations of man to the social and economic environment which he has created.

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President.

H. LYSTER JAMESON,
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Secretary.

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London, S.W.1, November 12.

FROM the correspondence that has recently appeared in NATURE it is evident that there is a healthy determination on the part of scientific men in Great Britain that the British Association shall not be allowed to stagnate, but must exhibit progressive evolution as well as the solid dignity implied in its full title. One point that I have recently noticed in your columns with great satisfaction is that in future representatives from similar associations in other countries will be invited to attend each meeting. We who work in parts of the British Empire remote from its centre, and are content to do so, although perhaps our scientific atmosphere is not so rarefied as some maintain, are undoubtedly apt to get out of touch, if not out of sympathy, with the work of our colleagues at home, while they are equally apt to view our en-