

As has already been pointed out², the influence of temperature on the quantum reflections should be wholly different in the two cases $h\nu^* \gg KT$ and $h\nu^* \ll KT$, where ν^* is the frequency of the lattice vibration. The case of diamond belongs to the first category and we should accordingly expect that the intensity of the reflections should practically be unaffected by being cooled down to liquid air temperatures. Our experiments to test this point have been completed and completely confirm the theoretical expectations.

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¹ Raman and Nath, *Proc. Ind. Acad.*, **12**, 83 and 427 (1940).

² Raman and Nilakantan, *Proc. Ind. Acad.*, **11**, 396 and 406 (1940).

'Historical Materialism'

IN the notice of Dr. Federn's recent book "The Materialist Conception of History" published in NATURE of November 9, the reviewer, while deploring the interest of "the non-historical younger part of our people" in historical materialism, sums up his own attitude, and that of "generations of better historians than Marx", in the statement that "mind and not matter rules the world". If this is meant to imply that mind or the human will can act as an independent agent, then it is in striking contrast to the attitude expressed by Prof. Einstein in his article on "Science and Religion" in the same issue of NATURE. In discussing the "regularities obtaining within the realm of living things", which presumably includes human history, Prof. Einstein says, "For him [a man imbued with the ordered regularity of all events] neither the rule of human nor the rule of Divine Will exists as an independent cause of natural events."

The opinion of Marx and Engels on this question was clearly expressed in a letter from Engels to J. Bloch¹: "We make our own history but in the first place under very definite presuppositions and conditions. Among these the economic ones are finally decisive. But the political, etc., ones and indeed even the traditions which haunt human minds, also play a part though not the decisive one."

I believe that the attitude expressed in the above quotations commands a great deal more sympathy among the younger men of science and even historians than the purely idealist position of Mr. Marvin. At the present time, when everyone is deeply concerned to understand the forces behind contemporary history, and events themselves are forcing us to attempt to analyse society, historical materialism deserves a serious evaluation.

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¹ Selected Correspondence (Martin Lawrence), p. 475.

Cultural Significance of Science

THE admonition in NATURE of December 28 to abandon "once and for all the belief that science is set apart from all other social interests as if it pos-

essed a peculiar holiness" expresses very precisely the opposite of what many men of science consider to be their duty. I, for one, can recognize nothing more holy than scientific truth, and consider it a danger to science and to humanity if the pursuit of pure science, regardless of society, is denied by a representative organ of science.

For the last ten years we have been presented by an influential school of thought with phrases about the desirability of a social control of science, accompanied by attacks on the alleged snobbishness and irresponsibility of scientific detachment. The 'social control of science' has proved a meaningless phrase. Science exists only to that extent to which the search for truth is not socially controlled. And therein lies the purpose of scientific detachment. It is of the same character as the independence of the witness, of the jury, of the judge; of the political speaker and the voter; of the writer and teacher and their public; it forms part of the liberties for which every man with an idea of truth and every man with a pride in the dignity of his soul has fought since the beginning of society.

This struggle is to-day at its height; on its outcome will depend, among other great issues of a kindred nature, whether scientific detachment and the civilization pledged to respect and cultivate pure science shall perish from this earth.

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Dec. 30.

Science and Government

ARTICLES have recently appeared in NATURE referring to what life ought to be like after the war. Other journals have also discussed the same subject. Each writer, theologian, socialist or whatever he is, feels sure that there will be a change and that his views will then get due recognition. All may agree that after this great conflict we shall not settle down again into the same old ways. Let us hope that science may then come into its own.

There was a time when 'science' was 'falsely so called'—that time has passed with the Dark Ages. Then came the twilight of the Renaissance. Now we are living in the daylight of the new day which has dawned on the world. The pious guesses and folk-lore of the past—to be revered as showing the stages of human evolution and inspiration—must now be replaced by the certainties and accuracies of science.

For a hundred years success has attended engineering and chemical enterprises which were guided by scientific methods, and what is urgently required is that science shall control not merely our factories but gradually all activities which come within its ambit—efficiency and economy being the objectives. Instead of party government we require scientific government. Thus may science prove the unifier of man, and usher in an era of universal peace. Individual health and happiness will also be secured by the application of scientific principles. But how can science obtain the control to which it is entitled?

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Dec. 10.