

or inhibition of the horse serum enzyme. In some experiments small activations or inhibitions were observed, but these were not reproducible, and hence must be considered the result of experimental variation.

The points of accord and conflict between the present findings and previously published work are apparent. In agreement with the suggestion of Mendel, Mundell, and Strelitz<sup>3</sup>, it would appear that the source of the enzyme is a crucial factor in determining the effect of sodium and potassium ions on cholinesterase. Nachmansohn's statement<sup>2</sup> that ". . . the enzyme is only active in the presence of divalent cations. After dialysis the enzyme practically completely loses its activity" may apply for cholinesterase from the electric organ of the Torpedo, but does not for the enzyme from horse or rabbit serum.

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<sup>1</sup> Mendel, B., Mundell, D., and Strelitz, F., *NATURE*, **144**, 479 (1939).

<sup>2</sup> Nachmansohn, D., *NATURE*, **145**, 513 (1940).

<sup>3</sup> Mendel, B., Mundell, D., and Strelitz, F., *NATURE*, **145**, 822 (1940).

<sup>4</sup> Massart, L., and Dufait, R., *NATURE*, **145**, 822 (1940).

## Science in the U.S.S.R.

THE words quoted by Prof. J. B. S. Haldane<sup>1</sup> occur in a letter written by Boyle at the age of nineteen years and nine months. One can well imagine how their author in his maturity might have deprecated what has been read into them, in some such way as "I scruple not to say, that those who know me best, will scarce believe me apt to constrain Natural Philosophy into a course so strait, as some would pretend".

Prof. Haldane also makes the remarkable assertion that Thomas Sprat, the literary divine who was the early historian of the Royal Society, postulated "a class basis for science". That is exactly what Sprat did not do; nor, so far as I know, did any of the creators of the Society, for they came of all classes and they held it open to all who were able. Thus, another letter from the youthful Boyle, written five months after that which Prof. Haldane has used, remarks of the leaders of the Invisible or Philosophical College that, "though ambitious to lead the way to any generous design, [they are] of so humble and teachable a genius, as they disdain not to be directed to the meanest, so he can but plead reason for his opinion; . . .". And there should be set against Prof. Haldane's sentence taken from Sprat's "History of the Royal Society" a number of passages from the same work, which show the "comprehensive Temper" of British science as it then was; I choose one only (1667 ed., p. 67):

"But, though the *Society* entertains very many men of *particular Professions*; yet the farr greater Number are *Gentlemen*, free, and unconfin'd. By the help of this, there was hopefull Provision made against *two corruptions* of Learning, which have been long complain'd of, but never remov'd: The *one*, that *Knowledge* still degenerates, to consult *present profit* too soon; the *other*, that *Philosophers* have bin always *Masters*, & *Scholars*; some imposing, & all the other submitting; and not as equal observers without dependence.

"The first of these may be call'd, the *marrying of Arts too soon*; and putting them to generation, before they come to be of Age; and has been the cause of much inconvenience. It weakens their strength; It makes an unhappy disproportion in their increase; while not the *best*, but the *most gainfull* of them flourish: But above all, it diminishes that very profit for which men strive. It busies them about possessing some petty prize; while Nature itself, with all its mighty Treasures, slips from them; . . ."

So far as a movement must be judged at all by isolated quotations instead of by the sum of acts and deeds, these two passages convey, I believe, a much less misleading idea of historical fact than do those which Prof. Haldane has chosen.

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<sup>1</sup> *NATURE*, **148**, 598 (Nov. 15, 1941).

WHAT Mr. Maisky said exactly and what was the context make such a difference that I do not propose to argue or comment on his words. Short quotations without the full story are very dangerous and unfair, as I know to my cost.

It is with Prof. Haldane's conclusions as to British science that I wish to deal. The words of Boyle and Sprat may indeed have been inspired by the desire at that time to get going an organization of real science, as compared with alchemy, and the difficult task with this was, I have no doubt, the fact that it had to be wrapped up with the possibility of utility.

To say, as does Prof. Haldane, that British science is applied and not pure seems to me a travesty of fact. If it were so, some of the great work of the past must have been related to objectives rather than to knowledge for knowledge's sake. It would follow that Darwin did his work in order to organize a menagerie; that Crookes's work on the exhausted tube was based on a keen desire to develop neon advertisements; that Thomson juggled with electrons in order to sell radio sets; and I suppose Eddington's theory of the expanding universe might at a future date be related to a keen desire to increase the value of real estate.

If there is a criticism to be made of British science, then I think it is that the team of applied scientists do not rally enough round the pure scientists. The standard example of this is the discovery of the great dyes, which were turned into an industry in Germany by the applied scientists in that country.

I have at the present time the honour of being associated with many physicists working on *ad hoc* problems connected with the War. It is indeed remarkable what they do, and they deserve the nation's profound thanks. I do notice, however, a keen desire on their part to get away from the particular to the general. I like this tendency. It is healthy and praiseworthy, but according to Prof. Haldane against the traditions of British science. I cannot accept this.

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