value of the products of research.

Are we going to continue to pursue this haphazard course, trusting to luck and the infallible "genius" to guide us to Eldorado blindfold and against our will?

A policy of "grants", microscopically small and distributed capriciously for the purpose of assisting in the solution of specific problems, will never meet the needs of this situation, because in the first place, the grounds upon which these grants are awarded are always results already achieved, i.e. the grant necessarily fails in its most important purpose of stimulating discovery because it is only obtainable, as a rule, after the discovery has been made; and, in the second place, the person to whom the grant is awarded remains, as a rule, a teacher overburdened with a multitude of other duties, handicapped by a teaching laboratory which he forever struggles in vain to adapt to the service of investigation, or else he is a recent graduate who aspires to but has not yet received a teaching position, and who is therefore of necessity an unskillful amateur in the business of investigation.

We need, on the contrary, a multiplicity of research laboratories closely affiliated with corresponding university departments and sharing with the universities the services of a proportion of their personnel, but also possessing a staff of men specifically appointed to do research, supplied with means to perform it, and salaries sufficient to justify them in regarding investigation as a life-work and a career. There is no doubt that this would involve in the long run the expenditure of almost as much money upon research as we at present spend upon higher education, but the very briefest consideration of the relationship and services of these two branches of intellectual activity should serve to convince any unprejudiced individual that this programme, far from being Utopian, is in fact necessary, and the logical consequence of the function of research. The large sums which we now spend on higher education are expended for the purpose of acquainting new generations with the results of past research. If we only admit, and this is the crux of the whole matter, that immeasurably more remains still to be found out in nature than our ancestors have been able to ascertain, surely it is not unreasonable to hope that at least as much may be spent in acquiring new knowledge as in distributing knowledge which has already been acquired.

But, as I have said, the difficulty resides in our failure to realize the fact that infinitely more knowledge lies ahead of us than behind us. To anyone possessing a tolerable measure of general scientific training this truth is so self-evident that it requires no demonstration. To the vast majority of our contemporary "men of affairs" it appears, on the contrary, a fantastic exaggeration. The programme which I have indicated can never be realized to any important extent until this scepticism and its cause, the prevalent ignorance of the history of science and the relationship of scientific discovery to the development of civilization, have been removed.

The solution of our problem therefore consists in the popularization of science. Not of scientific specialties or scientific "curiosities", of "marvellous" inventions which promptly drop out of sight and are never heard of again, or the freakish absurdities which pass for science in the "scientific" columns of our popular newspapers and magazines. We require, on the contrary, the purposeful and intelligent development of a popular appreciation of the function of science as the creative factor in civilisation. We have hitherto sought to disseminate scientific knowledge of quite the wrong sort and in quite the wrong way. To the average business man, lawyer or politician it matters little what the result is, for example, of mixing nitric and hydrochloric