

Mr. Wells makes a plea for the man of science to look upon himself as an aristocrat. This, indeed, must make Robespierre turn in his grave, and surely in some States must put some of our friends in danger. To jump from the proletariat, ignoring the *bourgeoisie*, to be an aristocrat, would certainly endanger, I should imagine, Prof. Kapitza's life. Dangerous advice from a socialist; but we get his meaning. I do not think his tongue was in his cheek when he wrote that, but, when Mr. Wells writes, the position of his tongue is important, which goes to show the superiority of the spoken over the written word.

My point is, why should the man of science look upon himself as an aristocrat? Granted, he may be doing work which will be of use to the world and not to himself; a soldier also does that. A man of science works at the subject he adorns because that is his bent in life and where he can best satisfy himself. It does not follow—brutal as it sounds, it must be made clear—that because a man of science is brilliant in his sphere he can take on any job and shine at it. A man can be a brilliant man of science but unable to make his way in life in any other direction. Even Sir Isaac Newton never shone as a member of Parliament. A well-known fellow of the Royal Society complained to me the other day that working as he did in a particular Ministry he was valued for pay on the basis of a major, and I am brutal enough to think that that is about right, once a specialist gets out of his groove.

I agree that the man of science and the specialist working in his groove have produced in our time the motor-car, the aeroplane and the radio, which by the 'wisdom' of man have been turned into the Panzer Division, the night bomber and lying propaganda. All this is indeed desperate, but it does show that technical minds outstrip political wisdom and that it is easier to discover X-rays than to placate Europe.

The sort of article Mr. Wells has given us tends to get all values wrong. Technical research may benefit the world or not, that depends on how it is ultimately used; but for the advancement of the general happiness of mankind concentration by the brains of the country is required on government and planning. That is the most difficult and important of all science. I suppose Mr. Wells would class it as politics and fire squibs at it; but because it is neglected and despised, because there are no chairs and no places for its students in the Royal Society, the most difficult of all subjects is being neglected as science.

Let us get our values right. The man who by his political efforts can get adequate milk to children deserves more of his fellow men than the inventor of the quantum theory; but in the narrow world of science, who gets the most attention and encouragement?

Aristocracy means government by the best. If the man of science means to come out of his shell and help us in the problems and perplexities of life, good luck to him. What we can do without, however, is the specialist, usually with the pen, divorced from all the responsibilities of public life but laying down high priestly criticisms of all and sundry, as if knowledge, foresight and wisdom lay with him alone.

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ACCORDING to Mr. H. G. Wells, it would appear that inventors and research workers must be stoically and aristocratically resigned to even worse conditions under democracy than they have hitherto endured under pluto-aristocracy.

But, surely, if democracy abolishes the rich patron, it must be prepared to wear his mantle and do his job.

The precedent is already to hand, for example, in the Civil List, from which State payments—pensions or gratuities—are already made to deserving individuals. It would, of course, be necessary to organize an extensive machinery for administering State patronage—as of right—to all deserving cases; but the advantage to the cause of national progress might be very great. Inventors, research workers, artists and the like would at last be protected from the "Smart Alecs"—they would be rewarded by the State in proportion to the benefits they had rendered to the community.

As to the scale of payments—a progressive manufacturing firm may spend from 1 per cent up to 2 or 3 per cent of its annual turnover on research and development; a wise and progressive democracy might well do the same, and spend as much on research and development as we have hitherto done on national defence.

The same organization might, with great advantage, have the duty of recommending the bestowal of national honours for public services rendered.

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April 25.

### 'Pancake' Ice in the Pennines

ON February 2 during a severe frost a visit was made to High Force in Upper Teesdale. The Force was a spectacular and beautiful sight, with a considerable cascade of water descending between great curtains of ice, and heavy icicles draping all the surrounding cliffs formed by the Whin Sill. But it was the pool below the fall itself that invited special attention and comment. Here on the agitated surface were floating rounded pieces of ice, formed apparently at the height of the frost on the pool-surface, which later became disintegrated. Some fragments, however, may have been derived from the surrounding walls, or have descended by the cascade from the upper reaches of the river. Mr. Bentley Beetham, of Barnard Castle, who accompanied me and who has before seen the Force under frozen conditions, favours the first-mentioned alternative for the origin of the ice-glaçons.

It was noticed, moreover—and this is the main point of interest—that the glaçons were not merely rounded, presumably by attrition in the agitated water, but also had their borders sharply raised in the manner of 'pancake' ice of the polar seas. The 'pancakes' were up to about one foot in diameter, and would seem to have been formed under such conditions of temperature and movement—in order to provide the correct plasticity and shape respectively—as are to be found in the well-known examples in the arctic and antarctic seas. The latter have been strikingly illustrated in Wright and Priestley's "Glaciology" of the Scott Antarctic Expedition, 1909.

It is not known that pancake ice has been described from other than polar regions.

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