

Nuclear Fusion or the Sun God ?

ONCE upon a time it was predicted that the population of the world would breed itself to death within a few years. Fortunately, or it might even be said predictably, this has come to nothing. Now, yet another series of predictions are being generated which will have equally apocalyptic consequences if they come to fruition. To put them in their simplest form it is that there is a shortage of energy and that there is no foreseeable way in which the world can meet its energy demands once the twenty-first century begins.

The wheel has certainly turned full circle. It is now presumably predicted that a gradual cold death will face the population of the world once the energy resources are exhausted. Only a short few years ago the concern being expressed was that the excess heat generated by more and more power stations, presumably straining to their utmost to meet the ever increasing demands of an ever sophisticated society, combined perhaps with aircraft flying in the stratosphere which could alter the radiation balance in the atmosphere, would ensure that the temperature would rise to such an extent that life would gradually become unbearable. It is no wonder that mere onlookers of the environmental scene are bemused.

But the true picture, of course, lies in between the two extremes as painted here. There is indeed an energy problem but it is far from being a crisis. It is now up to responsible governments to insure for the future by devoting reserves towards long-term research on energy problems. A series of three programmes entitled *The Energy Crunch* on BBC Television which came to an end this week has done a little to put the British viewer in the right frame of mind for the future, although it is to be hoped that viewers saw all three programmes the last of which went some way to redressing the unfair balance of the first two. The BBC must be commended for many of its science programmes for it has on occasion conspicuously failed to provide unbiased and logical argument on many issues. The recent series of programmes can also be criticized to some extent in this respect.

The repeated assertions that the safety of nuclear power plants is in doubt, without repetition of the impressive safety record of the British nuclear power industry, was one of the most insidious aspects of the programme. It must be considered to what extent the seemingly deliberate destruction of nuclear power as a solution to the energy problem was motivated by the *raison d'être* of the programme makers. How indeed could such a strong representation be made for solar power and geothermal power if fission reactors, both the present generation and the fast breeders, had been shown to be what they are, the workhorses of the nuclear power industry in the coming years?

It must also be asked why it was that much more emphasis was placed on solar energy rather than energy from fusion as the basis of man's hope for the future.

Fusion research is at an advanced stage and although it cannot be said that such reactors will prove to be the salvation of mankind—many years of research are needed before such categorical statements can even be contemplated—more money can safely be placed on the probability of fusion providing a safe, economical and regular supply of power than on any system designed to derive power from the sun.

But the makers of *The Energy Crunch* are correct in one respect and that is that speculative ideas for generating energy on a large scale deserve attention. Solar energy is only one of these possibilities the potential of which was reported by a combined NSF and NASA panel at the end of 1972. The panel reported that the total energy requirements of the United States in 1969 for example could have been supplied by the sunlight incident on 0.4 per cent of the country's land area. But what of coal? Is there not a possibility that power can be extracted from this source by combustion underground thus saving the cost of mining? Cannot nuclear power be used to electrolyse water in order to produce a supply of hydrogen which is a readily transportable source of energy? It is only to be hoped that the energy laboratories, energy departments and energy units which have mushroomed all over the world in what seems like recent months will not only devote their time and efforts to estimating, predicting or projecting the future of our existing energy resources but that the right people within these institutions will be given their heads, and the finance, to pursue futuristic ideas.

100 Years Ago



Winters and Summers

A FRIEND writes to me:—"From my observations of climate here (Belfast) I should say that I never saw a severe winter followed by a really fine summer. The severest winters I remember were those of 1854-5, and 1859-60. The summer of 1855 was very wet, and that of 1860 deplorable. The finest summers I remember were those of 1842, 1857, and 1868; in every case the preceding winter was very mild."

I would add to this, that the severe winters of 1865 and 1870 were not followed by remarkably fine summers. The harvest weather of 1866 was unusually bad.

Can any of your readers throw light on this subject from carefully kept registers?

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Old Forge, Dunmurry, June 6

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