

Book Review -

ESS, MR

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Book: Nuclear Explosions
& their effects.

By:

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Not long ago while defining the legitimate functions of a State, the well known Cambridge historian Sir John Seeley could say with a certain enviable complacence that "Government and legislation, and war and alliances concern the State, but scientific discoveries and artistic masterpieces do not". I shall repeat the quotation.

At the time this statement was made very few even among the farsighted thinkers would have questioned its propriety. At any rate it would have been accepted as a fair statement of the factual position obtaining then in many of the advanced States. The portion in this statement that affirms that scientific discoveries are not the concern of the State, may sound today almost archaic. If it did, it merely shows how rapidly we have moved from that position since the days of Sir John Seeley. Indeed today there are many branches of science, which are not only the concern of the State, but so much effectively their concern that it is almost impossible to get even dependable factual information regarding these scientific fields. Nuclear weapons, and their testing and the consequential ^{radiational} ~~radiational~~ hazards in which we are all vitally interested is a typical example of such a scientific ^{preserve.} ~~presence.~~ Indeed when the first edition of the book entitled "Nuclear Explosions and their effects", appeared three years ago, the general feeling among those interested in these subjects was this: unless the military authorities in some of the advanced countries, who had in their possession much of the available information on this subject, cared to release the information, it might take considerable time for such information to reach the general public. The appearance of the first edition of the book, which gave a detailed

factual information on the effects of nuclear explosions was welcomed by the general public.

There was a certain appropriateness in a book of this type hailing from India, which is not concerned with the production or the use of nuclear weapons, but which however along with the rest of the world is greatly concerned about the radiational and other hazards accompanying nuclear explosions. This fact is of some significance. I cited just now nuclear explosions and their effects as being a typical field of science which are the concern of some of the States. (When I refer to States I am ^{quoting} counting Seeley's phrase) In this context much of the information that ~~rolled~~ ^{doled} out to the general public is likely to be either overstated or understated, depending on the political or other significance of the information concerned. Indeed we are familiar into phrases like 'alarmists' and ~~appeasement~~ ^{ers} "appeasing" which serve merely to underline the tendencies that I mentioned just now to lean normally towards, the one or the other ^{side.} In this context the ~~in~~ ^{presentation} discussion of the available data attempted in this book was characterise d by a certain balance and dispassionateness, which are to be expected.

It is nearly three years since the first edition appeared, and during the intervening period considerable readjustment has been going on, on the basis of ^{irrefutable} ~~irregulable~~ new data that have since become available, between the so called appeasing and the alarmist views, and on the factual side, there is a certain general ^{consensus} consensus of opinion today which has tended to confirm the stand taken in the first edition. A second edition of the book "Nuclear Explosions and their effects" has recently been issued. Many portions of the earlier book have been rewritten, and considerably enlarged so as to include much new material that has since become available.

"appeasing"

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The most important chapters in the book are those relating to the effects of ~~high~~ high yield explosions, which serves to underline the horrors of a nuclear warfare, and on long term radiological hazards and the genetic effects of radiation.

The discussion ^{um 90} of the effects of Strontium 90 is of special importance, and the hazards are much more serious than generally realized.

But from a long range point of view the most serious radiational hazard is naturally the genetic one. There is no dosage, however, small it may be, that is not effective. Since the genetic effects are almost proportional to the dosage, and on the ^{to} ~~nuclear~~ ^{number} of people irradiated, the effect of small ^{doze} ~~doze~~ affecting very large masses of population is the same as that of a very heavy dosage on a small number. // On the scientific side today, the available information has been so discussed so thoroughly, that one may claim a certain ^{consensus} ~~consensus~~ of opinion, which is ^{conceding} ~~conceded~~ on all sides. The real problem is indeed on a different level. Namely knowing full well the risks involved, how far do we permit ourselves to go.

Take for example the ^{automobiles} ~~automobiles~~ on the road. We know definitely that there are risks. But we do not take the ^{automobiles} ~~automobiles~~ completely off the road for that reason. In the same manner those who play with nuclear weapons are fully aware of the hazards. The problem is therefore an ethical one. How far should one be permitted to play with weapons, which have wide spread effects not only on those directly but on humanity.

^{felicitate Prof. Kothari}
I wish to ~~felicitate~~ ^{congratulate} ~~Progress Kothar~~ and his collaborators ^{having} ~~has~~ brought out a book which is of such topical interest and likely to be a classic in the field.