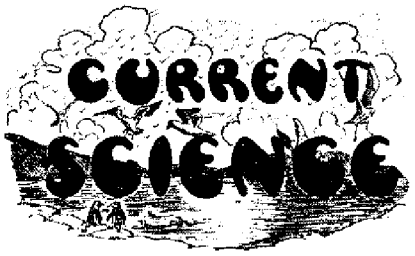
FROM THE ARCHIVES



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'Vision' and 'War'

Lord Rayleigh's presidential address to the British Association for the Advancement of Science, which was reproduced in *Current Science* for last month, consists of two parts. The first part is devoted to the consideration of the historical development of the auxiliary physical instruments invented by scientists for assisting their natural organs of visual perception for exploration of those phenomena in the material universe which happily lie beyond the faculty of their physiological mechanism of vision. The second part forms a brief but effective defence of scientists who are generally but unreasonably accused of being responsible for all the atrocities of modern wars.

Nobody quarrels with scientific discoveries. Nobody suspects the intentions of scientists. Nobody doubts the urge of scientists to explore the unknown. The world is prepared to accept Lord Rayleigh's plea that scientists are not responsible for all the atrocities of war, but it is entitled to ask 'then, who is responsible?' He is perfectly right when he says, 'I venture to say that it never occurred to him (Sir William Roberts Austen) or to any of his hearers (Lord Rayleigh included) that thermite had any application in war'. But surely some one must have had the necessary vision to discover its application to the destruction of civil populations, and is that 'some one' a scientist or a politician or a journalist? But the 'world is ready to accept the gifts of science, and to use them for its own purposes. It is difficult to see any sign that it is ready to accept the advice of scientific men as to what these uses should be'. The world that Lord Rayleigh has in mind is innocent of dichlorodiethyl sulphide and is not likely to mix aluminium powder with red oxide of iron, but they form the material on which a few gifted men work and demonstrate their application to the practical uses in peaceful industry. These scientific men are said to have no notion that the 'oil, very poisonous and violently inflames the skin', and the 'great amount of energy which is liberated when aluminium combines with oxygen' can have any use for military purposes. We believe that there is a wide difference regarding the degree of responsibility attached to scientists investigating theoretical problems and those dealing with explosives and poison gases, and it is untenable to maintain that the entire school of chemists are innocent of the consequences of the products of their researches to the civil populations, or of the possibilities of their employment for military purposes. Will Lord Rayleigh defend the conduct of a well-meaning educationist who in the exuberance of his enthusiasm produces a tiger from the jungle for the purpose of giving the Sunday School children a lesson in natural history and, losing control over the beast, lets it loose on the unoffending boys and girls? Would the school master be justified, were he to protect that 'it never occurred to him that the cattle lifter was also a man-eater'.

SCIENTIFIC CORRESPONDENCE

Detergent-induced male sterility and bud pollination in *Brassica juncea* (L.) Czern & Coss

A large number of chemicals capable of selectively inhibiting pollen development have been identified as chemical-hybridizing agents for large-scale commercial production of hybrid seeds in various crops[1]. These chemicals are known to cause a range of effects, for example, feminization of male florets, abnormal development of reproductive organs, inhibition of early anther development, abnormal tapetal behaviour and suppression of microspore development[2]. The present paper reports the changes in floral biology, pollen fertility, seed-set and total yield in *Brassica juncea* plants sprayed with various concentrations of surf-excel – a commonly used detergent.

The seeds of *B. juncea* (L.) Czern & Coss var. Pusa bold were sown in a randomized row design at the Botanic Garden, School of Life Sciences, Dr B. R. Ambedkar University, Agra. A group of twenty-five plants in each row were sprayed only once (a week before the floral bud initiation, i.e. 21 days after sowing) with 2, 4 and 6% (w/v) surf-excel (synthetic detergent powder, Hindustan Lever Ltd, Mumbai); another group of 25 plants were sprayed with distilled water to serve as control. There were three replicates for each treatment. Two rows of 25 plants each were left untreated between a row of treated plants. A small beehive was placed in the experimental plot. Pollen fertility of treated and untreated plants was tested regularly throughout the flowering period at an interval of 24 h with FCR test, 1% TTC (tetrazolium chloride) in 0.15 M Tris-HCl buffer at pH 7.8, and by *in vitro* pollen germination test after Brewbaker and Kwack[3]; *in vivo* pollen germination in the pistil was verified by the procedure after Shivanna and Rangaswami[4]. The inflorescence of treated and untreated plants was bagged before making these tests. Data on the