bacterium (corrected with respect to a photoinactive reference) in terms of the modulation frequencies and differentiated the various steps involved in the photocycle and estimated the kinetic constants. This photocalorimetric analysis has shown that the 5 ms step seen was associated with the O_{660} intermediate, the 3 ms step with M_{412}, 1 ms with N_{530} and the fastest one (0·5 ms), which has no optical absorption parallel, has been attributed to a conformational change in the protein. In contrast, the dried membrane fragments did not exhibit any calorimetric changes, and hence, no energy conversions. (A similar use of the PA method for photocalorimetric purposes, in the photopolymerization reaction of a diacetylene has been alluded to the above[14]).

The quantum yield of the photocycle in bacteriorhodopsin has been estimated[19] by PAS to be pH independent and of value 0·3. Comparing this value with that of the proton pumping step (which is pH dependent), they could conclude that 2 protons are pumped per photocycle in acid pH range while 1 proton is pumped out to the medium at alkaline pH.

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ANNOUNCEMENT

REPUBLIC DAY AWARDS FOR SCIENTISTS

Dr. V. Iswaran of the Indian Agricultural Research Institute, New Delhi has been awarded the medal for distinguished contribution in microbiology by the Academy for the Advancement of Agricultural Sciences.

Dr. S. Krishnaswami, former Director, Sericultural Board Mysore and Dr. Mahendra Singh, Head of the Soil Sciences, Department of Haryana Agricultural University, Hissar won the medals for noted services in entomology and soil sciences respectively.