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Effect of chemical, biological and nuclear weapons in aquatic world

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Abstract
The fate of the present century is going to be decided by ecological factors and global reactions of technology. If biological, chemical and nuclear weapons increase in great proportions, it is likely to invite regional conflicts. But the conflict with nature is apparently to erupt as a world crisis. This crisis in all probability is to increase due to our ignorance of not thinking ecologically. Our excessive dependence on chemical as a result of industrialization and other technological advancement make us blind to the fact that there are ecological limits, which if crossed may lead to disaster. Overcoming such disaster requires concerted global effort. But the scenario is quite opposite. Most of the Relatively homeostatic environment is essentially required for survival of an organism in any given ecosystem. Continuous release of increasing number of recalcitrant xenobiotic compounds and dumping of the wastes into the environment produce chronic pollution of air, water and soil and thereby changing the physic-chemical nature of environment, thus endangering the existence of micro and macro forms of life which are important components of biogeochemical cycle essential for healthy survival of all living systems.

Keywords: Environment, nuclear, Industrialization

Introductions
Industrialization and chemical production started rapidly in our country during the second half of the 20th century and today India is among the ten top most industrialized nations of the world. Further, we are the fourth biggest chemical producing country. Consequently, occupationally exposed populations are on greater risk scale. Causalities of the Bhopal Gas Tragedy in 1986, the most water is the most important natural resources required essentially for the life and health of all living organisms. Such as wonderful gift of nature gets contaminated when abused as a convenient dumping ground for wastes and effluents of all kinds, including agricultural, industrial and domestic wastes. The dumping of solid wasters in water systems also causes appreciable metal pollution (Kumar and Uma Devi, 1995) [5].
The facts highlighted above, without any reservation, suggest that degradation of ecosystems need to be taken care of and protected. Development and environment are tow important challenges to mankind who has to harmonize his economic and social activities within the constraints imposed by nature. Shukla (1988) have rightly suggested that the physical and mental health of man depends on the equilibrium between noxious agents and other environmental factors.
The problem of environmental pollution associated with metals is the result of redistribution by man's industrial and agricultural societies. Once metals are absorbed into the body of an organism, they react with a variety of binding sites (Health, 1987; Flos *et al*. 1987) [6]. For instance Hietanen *et al*. (1988). Reported that high concentration of heavy metals potentially interact with DNA and cause mutations in living systems.
There are a number of sources of metal emission into the atmosphere. Pacyna (1984) reported that about 3 lakh tons of metals enter the environment per annum as a result of weathering mobilisation. Generally, metals reach the aquatic systems through wet and dry depositions, mining activities, land run off and industrial, domestic and agricultural waste disposal. Among the industrial sources the main concentration comes from the metal pickling bath, plating bath, industrial waste water, metal works and foundries mine water, mine tailing ponds etc. Generally, heavy metals constitute the most widely distributed group of highly toxic and long retained substances. These show a strong affinity for ligands such as phosphate cystenyl and histidyl side chain of proteins, purines and porphyry lines and Are capable of forming complexes with ligands, containing sulphur, nitrogen and oxygen as low

electron donors. Due to metal complex formation, the normal functioning of cell is disturbed and of all the aquatic organisms fishes are the most important ones since they are staple food of high calorific value and the source of a number of useful by products. The fish flesh contains about 80% moisture & oil, 15-20% proteins and 1-2% other constituents. Fish proteins accounts for 25% of the total proteins consumed by man at global level and 96% of such proteins are easily digestible. Such a high nutritional value of fishes and revenue earning from their marketing made various agencies (Governmental as well as non-governmental) to lay special emphasis of fish farming and pollution related studies on fishes. The industrial wastes upon discharge into natural water, have been reported to cause massive fish kill and even on reaching ocean, they have been found to contaminate fish, prawn and other marine lives. Toxicity of six heavy metals to the fresh water air-breathing fish, channa punctatus was determined by Saxena and Parashari (1983). Ram and Sathyaneasan (1984) studied changes in protein, lipid and cholesterol profiles in the hepatic and gonadal tissues of Channa punctatus exposed to mercuric chloride. Banerjee (1985) observed the effect of mercuric sulphate on peripheral haemogram in the fish Hetropneustes fossilis and recorded significant decrease in packed cell volume and mean cell volume and increase in ESR and MHC. The contention that heavy metals influence the activity of lipid, amino acid, co-enzymes and other proteins containing sulphur, phosphorus, nitrogen or oxygen in fish was reported by Ghosh and Chatterjee (1985). Dutta and Haghighi (1986) performed studies on serum biochemical profiles under mercuric chloride stress in blue gill, Leapomis macrochirus. Bengeri *et al.*, (1986) studied effect of copper sulphate on oxygen consumption of fish L.guntea in relation to body size.

Conclusion

Khan and Weis (1987) studies viability of sperm and egg of killi fish, Fundulus heteroclitus under metal stress. Arsenic induced biochemical changes in liver and kidney of the fish Clarias batrachus were reported by Sharma and Maya (1987). Datta Munshi and Singh (1989) explored the accumulation of heavy metals in fishes of river Subarnarekha. Biochemical changes in the fish Oreochromis, mossambicus exposed to lead were studies by Ruparelia *et al.*, (1989). Garg *et al.*, (1989) traced haematological changes in Channa punctatus under the stress of manganese. The influence of water hardness and zinc on food utilization in Cyprinus carpio was studies by Moni *et al.*, (1990).

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