Biodeterioration "Biodeterioration" and "bioremediation" are the two aspects of biodegradation with an anthropomorphic emphasis. Biodeterioration is the breakdown of economically useful substances often the term is used narrowly to refer to the deterioration of substances that are normally resistant to biological attack such as metals, plastics, drugs, cosmetics, paintings, sculpture, wood products, electrical equipment, fuels and oils, and other objects (Sarkar et al.,1997). In bioremediation, biological systems are used to transform and/or degrade toxic compounds or otherwise render them harmless. Bioremediation can involve indigenous microbial populations with or without nutrient supplementation, or it can involve inoculation of exogenous organisms into the site. When exogenous organisms are added, the process is called "bioaugmentation." In either Case, the goal is to disharm noxious chemicals without the formation of new toxins. Micro-organisms have a simple approach to life; they use whatever is available as a food source, attach themselves to practically all surfaces, multiply and build up biomass. Everyone is familiar with the phenomenon of rotting, the natural decay and recycling of materials by a wide range of life forms, including micro-organisms. This process is termed as biodegradation and it is perceived as a beneficial or positive process. Biodeterioration may be defined as 'the deterioration of materials of economic importance by micro-organisms'; it is perceived as a deleterious or negative process. Biodeterioration has been classified as follows: Mechanical biodeterioration, Chemical assimilatory biodeterioration and soiling. Mechanical biodeterioration This occurs when the material is damaged as a direct result of the physical activity of an organism, such as its movement or growth. An example of this kind of biodeterioration is the damage caused to electrical cabling as a result of insect or rodent attack. Chemical assimilatory biodeterioration This is perhaps the most common form of biodeterioration. It occurs when a material is degraded for its nutritional value. For example breakdown of cellulosic materials such as wallpaper by cellulolytic fungi is an example. Chemical dissimilatory biodeterioration This occurs when a material is damaged as a result of the production and release of metabolic products by microbial activity that may corrode pigment or toxify the material. The poisoning of grain by mycotoxins and the release of pigments into plastic films are examples of this process. Soiling This visible form of biodeterioration occurs when the mere presence of an organism or its excrement, renders the product unacceptable. The function of the material may be impaired by the presence of the organisms, as in the fouling of ships' hulls by barnacles and algae. It is essential to appreciate that more than one of these biodeterioration processes, or indeed all of them may be occurring at the same time. Materials of economic importance known to be subjected to biodeterioration include: stored agricultural products, archival material products, pulp paper, wood and allied textiles and leather, constructional materials, fuels and lubricants, pharmaceuticals, metals cosmetics, paints, polymers, rubbers and stone, buildings, glass, adhesives and sealants. The list is extensive and it includes most of the industrial materials that readily come to mind. It is difficult to accept that some of these materials (glass, metal, stone) are susceptible to microbial attack. Biodeterioration of emulsion paints Only water-based-paints are susceptible to biodeterioration during their manufacture which may give rise to in-can problems. Thinning of the paint results when the thickener, usually cellulose ether, is attacked by cellulase enzymes produced by bacteria and fungi introduced into the formulation via contaminated components. Talc, which is used as an extender in paint formulation, has been cited as a possible source of

contamination