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A PRELIMINARY SURVEY OF ALGAE IN SEWAGE OXIDATION PONDS OF LAHORE

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Oxidation pond is a lentic body of water in which organic wastes are treated by natural biological processes, commonly referred to as 'self-purification" or stabilization (Drouet, 1956). The oxygen required for the aerobic purification is largely supplied by the photosynthetic activity of microalgae, which is coupled with the oxygen demand of bacteria (Palmer & Watter, 1954). The aim of this study was to identify such algae, inhabiting ponds situated at Shadbagh, Lahore. There are 4 ponds in an area of about 1.85 acres of land, the influent of which comprises mostly of domestic sewage.

Samples from the ponds were collected from different points as well as different depths at weekly intervals over a period of 9 months. When there was a bloom in certain ponds the frequency of the sampling was increased. In order to avoid the unusual conditions likely to be found at the edge of the ponds and to eliminate distortion of samples by floating scrub, a sewage smapler was used. The algae were examined under Olympus microscope and determined after Drouet (1956), Palmer (1962) and Ward & Whipple (1966).

Results and Discussion

Of the 37 algal species identified, there were 10 species of Cyanophyta, 6 of Chrysophyta (only Bacillariophyceae), 6 of Euglenophyta, 10 of non-flagellated and 5 of flagellated Chlorophyta. *Chlamydomonas reinhardi*, *Euglena gracilis* and *Oscillatoria lauterbornii* were most predominant as they were abundant in all the 4 ponds. *Chlorella vulgaris* and *Nitzschia palea* were found to be abundant in 3 ponds only. These species are mostly polluted water algae and are usually found in organic enriched areas (Palmer & Watter, 1954). *Euglena viridis*, *Phacus pyrum*, *Scenedsmus bijuga* and *S. quadricauda* were present in abundance in only 2 ponds, *P. pyrum* was, however, absent in one pond.

Although *Chlamydomonas globosa*, *Chlorella pyrenoidosa*, *Euglena polymorpha*, *Nitzschia acicularis* and *Oocystis borgei* were found to be present in all the 4 ponds but they were in no case abundant. They were present from time to time throughout the investigation period. Out of the remaining 23 species, *Gomphosphaeria aponina*, *Navicula lanceolata*, *Oscillatoria chalybea*, *Pyrobotrys gracilis* and *Spirulina nordstedtii* were present in only 3 ponds either occasionally or frequently. *Arthrospira jenneri*, *Cryptoglena pigra*, *Diatoma vulgare*, *Lepocinclis ovum*, *Navicula graciloidis*, *Oscillatoria chlorina*, *Pandorina morum*, *Pyrobotrys stellata*, *Scenedesmus dimorphus* and *Synedra ulna* were found to be present in 2 ponds only. Apart from that *Closterium moniliferum*, *Coelastrum microporum*, *Gomphosphaeria wichurae*, *Lyngbya digueti*, *Microcystis stagnalis*

(syn. *Anacystis montana*, after Desikachari, 1959), *Phormidium autumnale*, *Spirogyra communis* and *Tetraedron muticum* were occasionally present in only one pond.

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