India is quite rich in inland water resources. Rivers, lakes, ponds and irrigation channels support an extensive and regular fishery of various kinds. Adequate attention has, however, not been paid to the proper care of these waters and neither to the protein productive potential that they have, although the country is short of a suitable protein source for its undernourished millions.

The fishery that the inland waters support is almost exclusively capture fishery and the cultural efforts that have been made contribute but little in commercial terms. The efforts are now underway to supplement the capture fishery with that of cultured fishes to increase the fish production in the country. The first step in this direction would be to understand the biology, chemistry and physics of the inland waters and for that proper encouragement to the science of limnology is essential.

In India limnology is still in its infancy and is yet to strike deep roots. Y.Bharadwaja in the year 1940 remarked in his presidential address to the Indian Science Congress.
that "not much is yet known about the limnology of inland tropical waters". It still holds good to a great extent for the limnology of our waters is poorly known and is not yet at par with the knowledge in the West. A few notable contributions have appeared but organised efforts in this direction are still to be made. Most of the work deals with the ponds, while the great wealth of the Indian inland waters in Kashmir, Kumaon, Manipur, etc., and the great stretches of water left over by the rivers, lie unexploited.

Some important publications in this field from this country are that of Das and Srivastava (1966), Pruthi (1933), Ganapati (1949, 1955), Chacko and Krishnamurthy (1944), Sreenivasan et al (1964a and b), Upadhaya (1962, 1964 and 1965), Singh (1964 and 1965), Gulati and Sarkar (1961). Some other works though not directly related with limnology but nevertheless of great importance are that of Kiefer (1939), Brecht (1963), Sewell (1934a), Bandhawa (1949), Desikachery (1969), etc. Much is expected to come out in the coming years with the establishment of permanent centres of limnological studies at Mettur Dam (S. India), Cuttack, Barrackpore, Baroda, Delhi, Aligarh and Annamalai (S. India). Fisheries departments of the various states are also contributing significantly in this direction with their survey programmes and one such informative work is that of Upadhaya (1964).
At present the gap between planned fishery development in the country and the knowledge of the limnology of the waters concerned is still very wide and sooner or later it is bound to be a source of great inconvenience and handicaps. The progress in both the allied fields is to be kept at par to get the maximum out of our inland water resources.

Realising the above, work on the general limnology of the Aligarh waters was started at Aligarh. The object was to know the physical, chemical and biological changes that occur in the ponds of this region.

The work presents the data collected from July, 1964 to September, 1965, on the physical, chemical and biological changes of five fishponds of Aligarh and its immediate vicinity. A general survey of the Aligarh was undertaken in February, 1965.

The investigations give a systematic and varied account of the limnology of the ponds and are presented in the following way:

Chapter I deals with physical limnology of the ponds. Their origin, morphology, thermal changes, transparency and the current system are described. An account of the microclimatology of the region, which directly or indirectly governs these characteristics of the ponds, is also given.

Chapter II deals with the dissolved oxygen regime and
carbon dioxide system of the ponds.

In Chapter II is given the chemical limnology of the ponds. A detailed description of their ionic composition, nutrient cycle and nutrient income is given and these have been related to the phytoplankton production in the ponds.

Chapter IV gives an account of the regeneration experiments done with the water of the pond Moat. This is a singular study which throws much light on the regenerating mechanism in the ponds.

Chapter V deals with the phytoplankton of the ponds while chapter VI gives an account of the zooplankton of the pond.

Chapter VII deals the biological productivity estimations of the ponds.

**Description of the ponds sampled**

In all five ponds were selected for study. Two of the ponds Moat and Chau Tai were studied from July, 1964 to August, 1965, while rest of the ponds were studied in the post-monsoon months, extending from January, 1965 to June, 1966. A brief description of the ponds is given below:
1. **Moat:** Moat, as the name indicates, surrounds a Maratha fortress built in the eighteenth century and lies about four miles to the west of Aligarh city. Covering an area of about 30 acres, it is normally six feet deep during stable periods. An inlet on its western side drains the standing water of the submerged fields in the vicinity during the monsoons and also there is sufficient catchment area for rains.

It is now a university administrated fish farm and is stocked with the fingerling of major carps each year. No manuring has yet been done but de-weeding by mechanised means was done a few years back when the water was heavily infested with Hydrilla.

Its origin is not definitely known but the folklore suggests that it was formerly in the form of a jheel - that part being still known as Rani Jheel -- which was later extended to encircle the newly built fortress from all sides.

2. **Chau Tal:** This pond has a surface area of about 0.6 acres and is approximately six feet deep. This is the most productive of all the ponds studied. During the monsoons it gets flooded through connecting drains and attains a depth of about 12 feet. Bordered by residential localities on three
sides it is regularly used for bathing and washing purposes. Brains and garbage and nightsoil are regular sources of pollution. After the monsoons it is also used for growing *Trapa bispinosa*, the leaves and twigs of which are put back in the pond, giving it much organic matter.

A scum of blue-green algae is a regular feature of the pond. This also imparts to it a great amount of blackish colloidal matter which induces considerable difficulty in the filtration of the pond water.

3. Noomaish Tal: It lies on the outskirts of the city on the north-western side and has an area of about 0.5 acres. It is normally five feet deep but swells up considerably during the monsoons and also spreads to a very great area.

It also supports a rich growth of the alga *Microcystis aeruginosa* which is swept mostly to one side of the pond according to the direction of the wind.

4. Achal Tal: This pond lies amidst congested localities in the heart of the city and is a sacred place of worship. Numerous temples surround it from all sides and naturally much refuse and waste flows into it daily. It is also used extensively for holy bathes.
5. *Nagala Tal*: It is a small shallow pond of about 0.25 acre in surface area. During the monsoon months, this pond acquires much area and depth. The water is very muddy during the summer months and is constantly used by the buffalos for bathing. Grasses and *Hydrilla* spp. form margin of the pond.