*Wetland Ecosystem Series*, 13

# Limnological and Faunistic Studies of Pocharam Lake, Nizamabad – Medak Districts, Andhra Pradesh

ZOOLOGICAL SURVEY OF INDIA

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# Limnological and Faunistic Studies of Pocharam Lake, Nizamabad-Medak District, Andhra Pradesh

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# INTRODUCTION AND LIMNOLOGY : POCHARAM LAKE

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## INTRODUCTION

Pocharam lake is a large water storage reservoir constructed between 1916 and 1922 (18°08'N & 77° 57'E) at about 100 kms north-west of Hyderabad in Medak and Nizamabad districts of Andhra Pradesh (Fig. 1). The water spread area of the lake is about 16.835 sq. km, with a depth of about 5-6 mts. depending on the season and fluctuations in rain fall. The lake water is being used for irrigation, domestic use and forestry exploitation. This water body was formed by throwing a masonary gravity type dam with a over flow section across the Alair river. Paddy and sugar cane are equally important crops followed by ground nut (summer crop) and others like pulses and vegetables in the lake surroundings.

The catchment of the Pocharam lake is gently undulating topography surrounded by a mosaic of lake bed agriculture fields, scrub jungles, rocky out crops and tropical dry deciduous mixed and thorn forest of Pocharam Wild Life Sanctuary. Near the Pocharam dam, abutting the lake bed area, is the Pochammaralu Deer Breeding Centre that is contiguous to a relatively protected forested tract in Bhutpur Reserved Forest. Owing to its unique location and presence of forested tract, the vertebrate faunal diversity is rich in comparision to other lakes.

In the present study, being the maiden attempt, the morphometric data was obtained from the Irrigation Department, Government of Andhra Pradesh, and the limnological data was obtained from the observations made during the field surveys in the study period.

## MATERIAL AND METHODS

Sampling programme had been started from July, 2003 to April, 2005 that covers the three seasons of each year during the two year survey. Physico-chemical parameters were analysed with the aid of Standard Methods of APHA (1985). In order to cover the whole

topography of the water body, seven village spots that are passing around the bank of the lake have been selected [Pocharam (V), Pochammaralu, Burugapalle, Rajpet, Kottapalle, Wadalparti and Polkampet] (Fig. 1). The details of the surveys (9) are of 16-17th July, 2003, 28th August, 2003, 4-5th Nov., 2003, 13-14th Feb., 2004, 29-31st March, 2004, 21-22nd July, 2004, 9-10th Oct., 2004, 6-7th January, 2005 and 12th April, 2005.

The collection of water samples/analysis could not be done in some localities of some surveys particularly summer where the lake was found completely dried due to prevailing temperature and insufficient rains, during the period. The limnological investigation embodies the information on physico-chemical parameters of the water *viz.*, Temperature, pH, Conductivity, Total Dissolved Solids, Turbidity, Dissolved Oxygen, Carbonates, Bicarbonates, Free Carbon-di-oxide, Chloride, Total Hardness, Calcium, Magnesium, Phosphates, Nitrates, Silicates, Sulphates, Sodium and Potassium.

The temperature was observed with the help of Mercury Celsius Thermometer and the pH, Conductivity & Total Dissolved Solids were noticed with the aid of respective electronic dips in all the collection spots. For the analysis of Dissolved Oxygen, water samples were collected in DO bottles of 300 ml. capacity and brought to the field laboratory after fixation together with water samples in 1000 ml PVC containers for the analysis of titrimetric parameters and analysed there itself. Water samples in separate 1000 ml PVC containers were brought to the Head Quarters (Hyderabad) and were given to the local private laboratory for analyzing the rest of the parameters *i.e.*, nutrients and some metals.

## RESULTS AND DISCUSSION

In an aquatic ecosystem, water quality influences its biotic components and it controls diversity, biomass and spatial distribution of the latter in time and space. The physico-chemical parameters exert their influence both individually and collectively and their interaction produces abiotic environment which conditions the origin, development and finally succession of biotic communities. Further, biotic communities in turn, continuously alter abiotic environment. Thus, a constant interaction between abiotic and biotic components goes on in a dynamic ecosystem.

For the convenience of discussion, three seasons *viz.*, Summer, Monsoon and Winter are considered to compute the water quality trends of the lake during 2003-2005. Broadly speaking, the climate of Pocharam lake is characterized by a hot summer (February to May), mild winter (October to January) and moderate monsoon (June to September) seasons.

Results of the physico-chemical parameters of the lake water during the surveys have been given in tables 1-3 and discussed as follows.

**Temperature [°C] :** During the period of survey, the air temperature and water temperature showed more or less similar pattern and the air temperature was noticed

ranged from 21-37 and of the water 18-35. Air temperature was found maximum at most of the places in second year where as its minimum was at Rajpet in November, 2003. Minimum water temperature was found at Kottapalle in March 2004, while as its maximum was noticed at Rajpet and Kottapalle in October, 2004. Even in monsoon, the air temperature was found between 35-37 and the its maximum was observed at most of the spots particularly in second year (July, 2004). The winter and the summer values of air temperature were found higher in second year than the first. In other words, one can say that temperature was higher in second year than the first year. The reason for higher temperature values can be attributed to low water level, low velocity, clear atmosphere and greater solar radiation while its lower values can be explained due to frequent clouds, high percentage of humidity, high current velocity and high water levels.

**pH :** pH is another important parameter affecting species diversity and distribution in an ecosystem. The pH in surface waters of Pocharam lake was always high and ranged between 7.05 (Burugapalle in August, 2003) and 9.4 (Wadalparti in January 2005). The higher pH may be due to increased carbonates, bicarbonates and higher photosynthetic activities resulting from phytoplankton production. At Wadalparti the higher values (9.09, 9.25 and 9.4) were noticed in monsoon and winter seasons of the second year. In the first year it was found ranged between 7.05 to 8.64 and in second it was from 7.5 to 9.4. Most of the values in second years were found more than 8.0. The ranges of the parameter showed that the water was alkaline in nature. Alkaline waters harbors more plants than acidic waters. According to Das (1978) and Robert *et al.* (1940), pH between 8.5 to 9.5 is unfavorable for the growth of aquatic organisms.

**Electric Conductivity [microsiemen's/cm] :** Electric Conductivity of a water body depends on the amount of salts and silts carried by canals adjacent to agricultural fields. The conductivity values of the lake water fluctuated between 210-500 microsiemen's/cm. While the maximum value was found from Rajpet in first year winter (Nov., 2003), the minimal value was found from Pocharam (V) in the first year early summer (Feb., 2004). Most of the values in the present survey varied between 210-500 but exceptionally 770 and 810 at Rajpet in monsoon (July, 2003) and winter (Nov., 2003) respectively. The exceptional higher values (770 and 810) in monsoon and winter values show the insufficient levels of inflows of fresh water during the period. The seasonal variation of the conductivity in the present study may be due to the insufficient inflows of freshwater, discharge of silt and salts from the surrounding agricultural fields as well as the discharge of domestic effluents.

**Turbidity [N.T.U.] :** The turbidity values in the survey ranged between 5 (Burugapalle in August, 2003) and 160 (Burugapalle in Feb., 2004) with exceptional values of 230, 300, 510 and 950 (N.T.U.) were also noticed. In monsoon seasons of both the years, the values ranged from 5-107 with exceptions of 300 and 950, in winter seasons it was noticed between 8-148 with exception of 510 and in summers it was between

16-156. Due to insufficient rains during the period of investigation, there was no much marked difference of the factor in all the seasons. Higher turbidity is known to effect the primary productivity by restricting the light penetration and photosynthesis. The exceptional higher turbidity (950) that was noticed in the survey particularly at Kottapalle, may be due to the suspended organic matter of autochthnous and allochthonous nature and bioseston like phytoplankton.

**Total Dissolved Solids [mg/lit.] :** Apart from the potability and turbidity, Total Dissolved Solids (TDS) play an important role in community structure due to its limiting impart on primary production and trophodynamics. TDS of the lake water in the survey ranged from 155 (Wadalparti in July, 2004) to 365 mg/lit. (Rajpet, October, 2004), but exceptional higher value (530) was noticed from Rajpet in November, 2003. The lowest value of this factor was recorded in monsoon. A high content of TDS elevates the density of water and such medium increases osmoregulation. The winter values of this parameter in both the years were comparatively higher, which may be due to the close proximity of the water body to the inflowing drains. High content of dissolved solids elevates the density of water, influences the osmoregulation of freshwater organisms, reduces solubility of gases like oxygen and utility of water for drinking, irrigational and industrial purposes.

**Dissolved Oxygen [mg/lit.] :** The minimal value (0.9) was recorded at Rajpet in July, 2003 and maximum (8.2) was from Polkampet in November, 2003. Most of the values were noticed approximately between 3.0 to 8.0 only. The DO values were found higher in November, 2003 in all the spots and the reason may be due to the localities receiving the leaked effluents, other waste waters, together with anoxic and chemically reducing material prevailed at these spots. The low levels of this factor probably due to low sunshine coupled with poor penetration of light from high turbidity and the higher values may be due to high productivity during the clear weather seasons. Super saturation (> 8.0) also prevailed for some times (November, 2003) at Pocharam and Polkampet localities which may be due to the abundance of phytoplankton, and increased photosynthetic activities resulting from the phytoplankton blooms in these areas.

**Alkalinity :** Carbonate, Bicarbonate and Carbon-di-oxide constitutes the major source of inorganic carbon to producers in an aquatic ecosystem and act as buffer (s), thus regulating pH of the medium.

**Carbonates [mg/lit.] :** Alkalinity is the acid neutralizing capacity of water which depends on the strength of carbonates in a sample and it determines the availability of free Carbon-di-oxide that is essential for photosynthesis and thus directly related to productivity. In general, alkaline water supports the diversity of aquatic life. In the present study on Pocharam lake, carbonate values ranged from 10 (July, 2003 at Pocharam and Burugapalle) to 105 (April, 2005 at Pochammaralu). Zafar (1966) also found higher quantities of carbonates during summer. Total Absence of this factor was

noticed in August, 2003 in all the localities and occasionally other areas during the period of study.

**Bicarbonates [mg/lit.] :** Bicarbonate values ranged between 30 to 180. The minimum values was found in winter (Pochammaralu July, 2004 and January, 2005) and maximum value was found in summers (Polkampet in March, 2004). The liberation of Carbon-di-oxide in the process of decomposition of bottom sediments with resultant conversion of insoluble carbonates into bicarbonates, may be the reason of summer maxima. During the whole study period, the summer values were found higher and the winter values were observed less. Similar pattern was also noticed by Anitha *et al* (2005) in the case of Mir Alam lake.

**Free Carbon-di-oxide [mg/lit.] :** This factor was ranged the range of 8.6 to 25 and exceptional value 42 was found in summer in February, 2004 at Rajpet. This parameter was noticed in the first year monsoon and second year early monsoon in some spots. The higher rate of decomposition during summer due to rapidly receding water level at these spots and higher temperature followed by scanty rains during monsoon, were probably responsible for higher Carbon-di-oxide and reduced oxygen contents. Presence of algal bloom may be the reason for absence of free $CO_2$.

**Chloride [mg/lit.] :** Chloride is one of the important anions that determines the total salinity of the water and marked quantitative accumulation of this factor over a period of time, is an indication of anthropogenic pollution. Chloride content of the lake water had ranged from 11 to 50. Both the minimum and maximum values were noticed in January, 2005 (winter) at Pochammaralu and Wadalparti respectively. Most of these values were observed between 15-31 only. No specific pattern of fluctuation of this parameter was noticed during the two year survey. Presence of high amount of chloride influences the amount of dissolved oxygen and this may affect adversely the number of aquatic organisms.

As the lake is situated in rural areas, the anthropogenic influence is less. In general, the chloride quantity is more in summer and the reason could be attributed to evapo-transpiration. But in first year summer, these values were found between 13 to 28 where as in second year summer it was ranged between 30-37 showing comparatively higher. The low monsoon values could be due to dilution effect, but exceptional value of 40 was noticed at Pocharam (V) in August, 2003 and the reason can be attributed to human activities during the period in the locality.

**Total Hardness [mg/lit.] :** This factor depends on the concentration of carbonate and bicarbonate salts of calcium and magnesium (temporary hardness) or sulphate, chloride or other anions of mineral acids (permanent hardness). This parameter in the lake water ranged between 70 (Kottapalle in January, 2005) to 390 (Burugapalle in Feb., 2003), but most of the factors ranged around 120 only. A peak value of 390 had been noticed in the study on Pocharam lake and similar observation was found by Siddiqi and

Khan (2002) in the lakes in the vicinity of Hyderabad. Some seasonal constancy was observed in the hardness values, higher in summers and lower during monsoons. Very poor quantities of this factor were noticed in August, 2003 and the reason can be attributed to the dilution factor.

**Calcium [mg/lit.] :** Calcium is found in all the natural waters and its main source is weathering of rocks from which it leaches out. During the two year study period, the calcium ranged from 15 to 59. Its minimal values were noticed in monsoons *viz.*, Pochammaralu in July, 2003 and Wadalparti in July, 2004 where as its maxima was noticed at Pocharam (V) in Nov., 2003 (winter). The winter values of the whole lake in the first year were found to be higher side than second year. In general the higher values of calcium may due to the decomposition of organic materials that releases the carbon-di-oxide which brings calcium into the system.

**Magnesium [mg/lit.] :** The concentration of magnesium in the lake water was found minimum (11) in July, 2003 at Burugapalle and the maximum (46) at Pocharam (V) in August, 2003 with an exceptional value, 79 was noticed at Burugapalle in February, 2004. The sudden rising level of magnesium is an indicative of increase in the level of pollution during the period. Barring this exceptional value, the summer values were found at lower side in the two year study. Calcium and magnesium are the principal cations imparting hardness, however to a lesser extent like iron, manganese and strontium of freshwater as well as other discharges into the water body, are also responsible for it.

**Phosphates [mg/lit.] :** In general, aquatic ecosystems receive excess of nutrients through untreated domestic sewage and agriculture run off. Phosphate acts as a limiting nutrient responsible for the process of eutrophication and leads to ultimate degradation of an aquatic ecosystem. Lakes can be aesthetically classified into good, fair, very bad and awful on the basis of percentage of phosphates loading.

During the course of study on Pocharam lake the phosphate ranged between 0.01 to 0.62. The minimal value (s) were noticed in July, 2003 (monsoon) at Pocharam (V) Pocharamaralu and Burugapalle in Nov., 2003 at Polkampet in March, 2004. The maximum value was noticed at Rajpet in July, 2003. The higher values are indicating the in loading of domestic sewage and agricultural run off from the housing colonies as well as the agricultural fields in these areas.

**Nitrates [mg/lit.] :** The Nitrogen pool of limnetic environment comprises of two compounds *viz.*, the organic component consisting organic material liberated by the biota or generated in the heterotrophic bacterial activity on proteinaceous substrate and in organic components of nitrogen such as ammonia nitrite and nitrate. During the present investigation on Pocharam lake only one form nitrogen *i.e.*, nitrate nitrogen was estimated.

The quantity of Nitrates of lake waters ranged from 1 to 9 and exceptional values of 12 and 15 were also noticed. The minimal values were noticed in most of the localities in winter season *i.e.,* Nov., 2003 and the maximum value (9) was observed not only at Rajpet in Nov., 2003 and July, 2003 but other places like Wadalparti in July, 2004. The exceptional values *viz.,* 12 and 15 were noticed in Kottapalli in July, 2003 and Burugapalle in March, 2004.

**Silicates [mg/lit.] :** Silicate concentration of the lake has ranged between 5 to 14 with an exceptional peak values of 21. Most of the values were found around 10 only. The minimum (5) value was noticed at Rajpet in March, 2004 and the maximum (14) was at Kottapalle in January, 2005. The summer values of the second year (March, 2004) was found less and the winter values of the second year (January, 2005) were observed at higher side.

**Sulphates [mg/lit.] :** Sulphur exists in a number of oxidation states, from the most oxidized sulphate to the most reduced sulphide. Higher concentration of sulphates stimulates the action of sulphur reducing bacteria, which produce hydrogen sulphide, a gas highly toxic to fish life. Sulphates of lake water was observed from 6 to 48 wherein the minimum was noticed in February and March, 2004 at Pocharam (V) and Burugapalle respectively while the maximum was noticed Wadalparti in January, 2005. Comparatively the first year values was found at lower side than the second year, but no specific seasonal pattern was observed.

**Sodium [mg/lit] :** When once the metals enter any aquatic body, it prevails in the water body permanently. Hence the metals have been termed as conservative pollutants. The gravity of the persistence of heavy metals in an aquatic environment is compounded by the fact that they are water soluble and non-degradable and bound to many biochemical activities. The heavy metal salts, being stable compounds can not be readily removed by oxidation, precipitation or any other process. Hence the pollution due to heavy metals is a serious concern and lead to deterioration of the water body by depleting ecologically sensitive species or eliminating the commercial species and also a serious threat to human health.

Sodium concentration in the lake water ranged between 7 (Rajpet and Kottapalle in August, 2003) and 52 (Wadalparti in January, 2005). The monsoon values in the first year are at lower side and of the second year they were at higher side. Its peak value was observed at Wadalparti in January, 2005 (winter) while its values were found at lower side in first year winter (November, 2003). Overall, the first year values are at lower level than the second year during the period of study.

**Potassium [mg/lit.] :** The quantity of Potassium in the lake waters ranged from 1 to 6 with an exceptional value of 9 in July, 2003 at Burugapalle and Rajpet. The maximum value of 6 was noticed at Pocharam (V) in July, 2003 while the minimal values were noticed at several places in winter and summer values of the first year. This factor has not shown any specific pattern of seasonal fluctuation in the whole study.

**Table 1 :** Showing the ranges of physico-chemical parameters on Pocharam lake during 2003-05.

| S.No. | Parameter | Range (s) found in Pocharam lake waters | Tolerance Limits for Drinking waters IS : 2296-1982 | Tolerance Limits for Irrigational waters IS : 2296-1982 |
|---|---|---|---|---|
| 1. | Temp. (Air/Water) | 21-37 / 18-35 | — | — |
| 2. | pH | 7.05-9.4 | 6.5-8.5 | 6.0-8.5 |
| 3. | Elec. Conductivity | 210-500 (expl. 770 & 810) | — | 2250 |
| 4. | Turbidity | 5-160 (expl. 300 & 950) | — | |
| 5. | TDS | 155-365 (expl. 530) | 500 | 2100 |
| 6. | Dissolved Oxygen | 0.9-8.0 (expl. 8.2 & 8.5) | 6 | |
| 7. | Carbonates | 10-105 | — | |
| 8. | Bicarbonates | 30-180 | — | |
| 9. | Free $CO_2$ | 8.6-25 (expl. 42) | — | |
| 10. | Chloride | 15-31 | 250 | 600 |
| 11. | Total Hardness | 70 - 390 | 300 | |
| 12. | Calcium | 15-59 | 200 | |
| 13. | Magnesium | 11-46 (expl. 79) | 75 | |
| 14. | Phosphates | 0.01 to 0.62 | — | |
| 15. | Nitrates | 1-9 (expl. 12 & 15) | 20 | |
| 16. | Silicates | 5-14 (expl. 21 & 24) | — | |
| 17. | Sulphates | 6-48 | 400 | 1000 |
| 18. | Sodium | 7-52 | — | |
| 19. | Potassium | 1-6 (expl. 9) | — | |

[expl. = exceptional]

In general, Pocharam lake water is characterized as alkaline with a pH range of 7.05 to 9.4 and these values are between desirable and permissible limits. Higher alkaline tendency was noticed particularly at Wadalparti followed by Pochammaralu and Kottapalle localities. Due to insufficient rains in the preceding periods, consequent low levels of inflows of freshwater with loading of silt and salts from the surrounding agricultural fields, the electric conductivity (210-500 with exceptional values of 770 and 810) is on higher side and the turbidity (5-156 with exceptional values of 230, 300, 510 and 950) shows less light penetration. The Dissolved Oxygen was found between 0.9 and 8.0 with exceptional values of 8.2 and 8.5 mg/l. The station-wise ranges of DO values noticed are Pocharam (v) (3.4-8.5), Pochammaralu (2.5-7.6), Burugapalle (1.9-7.5), Rajpet (0.9-7.0), Wadalparti (3.8 to 7.5), Kottapalle (1.7 to 8.5) and Polkampet (4.0 to 8.2). The exceptional values of 8.2 and 8.5 were found in the first year. The second year DO values show low values than the first year and also with in the tolerance limit (6 mg/l) prescribed by Indian Standards. The high values of DO are due to high productivity during clear weather seasons. Carbonates and bicarbonates were found its maximum values in summer. No specific pattern was noticed in the case of chloride, total hardness, calcium and magnesium during the period of study on lake. The phosphate values were found minimum at several places and also its maximum value was noticed at Rajpet during the monsoon season of the first year. The summer minima and winter maxima was noticed in the case of silicates. In the case of sulphates, no specific pattern was observed but the first year values were at lower side than the second. The sodium concentration was found at lower side in first year monsoon while its values in second year monsoon were at higher range and its peak value was observed during second year winter whereas its values were found at lower side in first year winter. In the case of potassium, no specific pattern was observed but its maximum was noticed at Pocharam (V) in the first year monsoon and its minimal values were seen at several places in winter and summer seasons of first year. The high concentration of chlorides, sulphates, phosphates and nitrates associated with the depletion of oxygen lead to anoxic or anaerobic conditions in the lake waters.

Locality-wise the parameters *viz.,* pH, Turbidity, Carbonates, Magnesium, Nitrates, Sulphates and Potassium are at lower side in Burugapalle. Like-wise, at Rajpet the parameters *viz.,* Electric Conductivity, Total Dissolved Solids, Phosphates, Nitrates are higher side. At Pocharam (V), the factors like Electric Conductivity, Carbonates, Phosphates, Nitrates, and Sulphates are at lower side while Calcium, Magnesium and Potassium are at higher side. The lower values of Bicarbonates, Chloride, Calcium and Phosphates at Pochammaralu where as the higher values of Carbonates were found in the same locality. The lake waters at Kottapalle have shown higher quantities of Turbidity, Nitrates, and Silicates at Kottapalle while the lower quantities of Total Hardness, Sodium were noticed in the same locality. At Wadalparti, the values of Total Dissolved Solids and Calcium were found at lower side while pH, Chloride, Sulphates and Sodium are seen at higher side. Out of nine surveys, five surveys could be undertaken at Polkampet where

Phosphates were found at lower side and Dissolved Oxygen at higher level. All the parameters are within the tolerance limits for drinking waters, prescribed by Indian Standards, except the pH of which the maximum values 9.25 and 9.4 were noticed only at Wadalparti in monsoon and winter seasons of the second year.

**Lake water for irrigation purpose**

Since Pocharam lake was mainly constructed and being used for irrigational purpose, the author has studied its suitability for irrigational purpose from the results of the required data obtained in the first year from five localities (Pocharam Village, Pochammaralu, Burugupalle, Rajpet and Kottapalle) where the agriculture is mainly activity to the local people.

Suitability of the irrigational waters depends primarily on the salt constituents. The total concentration of the soluble salts, the proportion of sodium to other cations, bicarbonate concentration and Calcium with Magnesium concentrations are the important factors for assessing the suitability of the water for irrigational purposes. The values of the parameters of the lake water required for agricultural studies have been converted them (mg/l) with conversion factors and expressed in terms of milli equivalents (m eq./l). The factors like Sodium Absorption Ratio (SAR), Residual Sodium Carbonate (RSC) and Percent Sodium (PS) have been calculated with the following formulae and presented in Table - 3.

$$SAR = Na \Big/ \sqrt{\left(\frac{Ca + Mg}{2}\right)}$$

$$RSC = (Co_3 + HCo_3) - (Ca + Mg)$$

$$PS = \frac{100\,Na}{Na + Ca + Mg + K}$$

pH of which the tolerance limit is said to be 6.0-8.5, ranged in the lake waters between 7.0 and 8.5 with its mean value 7.5 showing the water is of alkaline in nature. Electric conductivity ranged from 240-400 mhos/cm. The waters below the value of 2,250 are found to be suitable for good crop growth with proper management and drainage conditions, but saline conditions may develop if leeching and drainage are inadequate. Irrigational waters with electric conductivity between 250-750 is classified as C2 water and accordingly Pocharam lake waters fall under this class. Abnormal quantities of carbonates and bicarbonates affect the uptake of metabolism of nutrients by plants and it varies in different species. Calcium and magnesium as precipitate as carbonates in water having more concentration of bicarbonates and also increase the exchangeable sodium percentage. Total values of carbonates and bicarbonates in the ecosystem ranged between

0.98-4.23 (mean value 2.46). The dissolved quantity of chloride may be toxic to fruit crops and injurious to leaves. The maximum tolerable limit of chloride is 17 m.eq./lit. and the value of this factor is found ranged between 0.06-1.13 with a mean value of 0.65 in the lake waters. The rate of concentration of this factor in soil does not have any relationship with its concentration in irrigational waters. Salty clay loams accumulates more chloride in a given time than sandy loams and sands. The sodium hazards of irrigational waters is measured by the concentration of sodium to calcium and magnesium which is termed as Sodium Absorption Ratio (SAR). Sodium, magnesium, chloride and sulphate are abundantly found in saline waters. Magnesium is one of the important criteria in determining the irrigational waters and high absorption effects the soil unfavourably (Sazboles and Daras 1968). The higher SAR values, deteriorate the soil texture in irrigational waters. The SAR in the present study floated from 0.2-2.2 and its mean value is 0.79. The tolerance limit of this factor is said to be 26 and its value less than 10 is classified as S1 and accordingly Pocharam lake waters belongs to this class. Residual Sodium Carbonate (RSC) is found between 0.14-2.29 with a average value of 1.45 and its tolerance limit as per Indian Standards is 1.25. Some values of RSC are showing more than the 1.25. According to Eaton (1950), waters with RSC greater than 2.5 are deleterious, while less than 1.25 are considered to be safe showing that the Pocharam lake water is suitable for irrigation. Sensitivity of plants to high sulphate concentration is related to the tendency of high sulphate concentrations to limit the calcium uptake by plants. The decrease in the uptake of this parameter is associated with the relative increase in the absorption of sodium and potassium. Sulphate quantity of the lake water during the period of study ranged between 0.1-5.58 (mean value 0.23) while its tolerance limit is 21.

The quantity of water for irrigation has to be assessed on the basis of specific conditions like different agro-climatic conditions, different crops (sensitive/semi tolerant & tolerant) its varieties and cultural practices. Due to differences in these conditions in different areas, one can treat the above guidelines to evaluate the irrigational water. As such Pocharam lake waters have been classified as C2S1 on the basis of the electric conductivity (240-400 μ mhos/cm) and SAR less than 10. Thus concluded its suitability for irrigational purposes.

## SUMMARY

A limnological survey had been undertaken seasonally during 2003-2005 on Pocharam lake situated in Medak and Nizamabad Districts of Andhra Pradesh. Seasonal fluctuations were discussed in the paper. A brief account on the lake water for irrigation purpose is also discussed.

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**Table 2 :** Showing the physico-chemical parameters during the study period (2003-05)

| Parameter | Month/ year → | 7/03 | 8/03 | 11/03 | 2/04 | 3/04 | 7/04 | 10/04 | 1/05 | 4/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc.↓ | | | | | | | | | |
| I Temp (Air/ Water) (°C) | $S_1$ | 25.5/28 | 35/32 | 23/25 | 30/27 | 26/23 | 37/32 | 30/26 | 30/28 | 35/33 |
| | $S_2$ | 28/26 | 35/32 | 22/23 | 30/27 | 26/23 | 37/32 | 30/29 | 26/24 | 36/32 |
| | $S_3$ | 26/26 | 33/30 | 23/20 | 29/27 | 24/23 | 25/25 | 33/31 | | |
| | $S_4$ | 24/27 | 33/30 | 21/20 | 30/27 | 32/28 | 25/25 | 37/35 | | |
| | $S_5$ | | 32/30 | 23/26 | 29/26 | 24/22 | 37/32 | 28/25 | 29/27 | 35/33 |
| | $S_6$ | 28/26 | 32/29 | 22/20 | 30/27 | 28/18 | 25/25 | 35/35 | 29/27 | |
| | $S_7$ | | 32/30 | 22/20 | 29/27 | 25/19 | 37/32 | | | 36/32 |
| II pH | $S_1$ | 7.29 | 7.4 | 7.94 | 8.86 | 7.76 | 8.36 | 8.68 | 8.1 | 8.0 |
| | $S_2$ | 7.81 | 8.06 | 7.9 | 7.98 | 7.77 | 9.16 | 8.75 | 8.87 | 8.0 |
| | $S_3$ | 7.1 | 7.05 | 7.51 | 7.78 | 7.51 | 7.76 | 8.15 | | |
| | $S_4$ | 8.5 | 7.54 | 7.24 | 8.07 | 8.64 | 7.58 | 8.24 | | |
| | $S_5$ | | | 7.57 | 7.48 | 8.05 | 9.09 | 9.25 | 9.4 | 8.5 |
| | $S_6$ | 7.39 | 7.64 | 7.73 | 7.78 | 7.8 | 7.5 | 9.12 | 8.11 | |
| | $S_7$ | | | 8.4 | 7.29 | 7.74 | 8.79 | | | 8.0 |
| III EC [microsie-mens/ cm | $S_1$ | 290 | 400 | 290 | 210 | 250 | 280 | 300 | 330 | 350 |
| | $S_2$ | 260 | 260 | 320 | 280 | 250 | 260 | 350 | 330 | 370 |
| | $S_3$ | 350 | 300 | 320 | 350 | 430 | 470 | 440 | | |
| | $S_4$ | 770 | 240 | 810 | 320 | 250 | 400 | 460 | | |
| | $S_5$ | | | 330 | 290 | 230 | 240 | 320 | 500 | 380 |
| | $S_6$ | 240 | 270 | 350 | 330 | 380 | 430 | 330 | 480 | |
| | $S_7$ | | | 380 | 340 | 400 | 270 | | | 360 |
| IV Turbidity (NTU) | $S_1$ | 44 | 13 | 19 | 78 | 156 | 34 | 52 | 90 | 148 |
| | $S_2$ | 41 | 6 | 43 | 35 | 72 | 24 | 75 | 230 | 110 |
| | $S_3$ | 19 | 5 | 8 | 160 | 16 | 88 | 50 | | |
| | $S_4$ | 42 | 20 | 15 | 26 | 47 | 107 | 63 | | |
| | $S_5$ | | | 31 | 26 | 128 | 61 | 68 | 56 | 62 |
| | $S_6$ | 950 | 73 | 60 | 24 | 49 | 300 | 72 | 510 | |
| | $S_7$ | | | 68 | 110 | 49 | 38 | | | 74 |

| Parameter | Month/ year → | 7/03 | 8/03 | 11/03 | 2/04 | 3/04 | 7/04 | 10/04 | 1/05 | 4/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc.↓ | | | | | | | | | |
| V Total Dissolved Solids (mg/Lit) | $S_1$ | 230 | 360 | 230 | 140 | 190 | 180 | 195 | 215 | 230 |
| | $S_2$ | 210 | 270 | 210 | 180 | 180 | 170 | 230 | 215 | 240 |
| | $S_3$ | 280 | 250 | 210 | 230 | 350 | 305 | 355 | | |
| | $S_4$ | 260 | 240 | 530 | 210 | 170 | 260 | 365 | | |
| | $S_5$ | | | 215 | 190 | 160 | 155 | 210 | 320 | 245 |
| | $S_6$ | 200 | 230 | 320 | 215 | 280 | 350 | 215 | 315 | |
| | $S_7$ | | | 250 | 220 | 370 | 175 | | | 240 |
| VI Dis. Oxygen (mg/lit.) | $S_1$ | 4.2 | 8.5 | 8.0 | 6.9 | 3.6 | 3.4 | 4.9 | 4.4 | 4.8 |
| | $S_2$ | 4.4 | 4.5 | 7.6 | 4.8 | 3.5 | 4.2 | 2.5 | 3.8 | 4.6 |
| | $S_3$ | 3.9 | 1.9 | 7.5 | 4.3 | 5.9 | 2.6 | 3.8 | | |
| | $S_4$ | 0.9 | 4.6 | 7.0 | 4.1 | 4.3 | 3.5 | 4.8 | | |
| | $S_5$ | | | 7.5 | 4.4 | 4.9 | 3.8 | 4.7 | 5.0 | 4.9 |
| | $S_6$ | 1.7 | 8.5 | 7.8 | 4.1 | 3.7 | 2.9 | 5.1 | 4.8 | |
| | $S_7$ | | | 8.2 | 4.8 | 4.6 | 4.0 | | | 4.5 |
| VII Carbonates (mg/lit) | $S_1$ | 10 | Nil | 45 | 55 | Nil | 60 | 65 | 30 | 90 |
| | $S_2$ | 15 | Nil | 50 | 40 | 40 | 40 | 25 | 55 | 105 |
| | $S_3$ | 10 | Nil | 65 | 60 | Nil | Nil | 25 | | |
| | $S_4$ | 15 | Nil | 65 | Nil | 30 | Nil | 35 | | |
| | $S_5$ | | | 70 | 40 | 35 | 70 | 35 | 75 | 100 |
| | $S_6$ | 15 | Nil | 90 | 35 | Nil | Nil | 45 | 45 | |
| | $S_7$ | | | 40 | 60 | Nil | 55 | | | 80 |
| VIII Bicarbonates (mg/lit.) | $S_1$ | 65 | 120 | 70 | 35 | 90 | 35 | 35 | 55 | 175 |
| | $S_2$ | 90 | 60 | 85 | 90 | 90 | 30 | 80 | 30 | 150 |
| | $S_3$ | 105 | 120 | 85 | 75 | 170 | 115 | 80 | | |
| | $S_4$ | 85 | 90 | 80 | 125 | 60 | 135 | 70 | | |
| | $S_5$ | | | 85 | 65 | 40 | 40 | 60 | 45 | 130 |
| | $S_6$ | 50 | 90 | 75 | 120 | 125 | 125 | 25 | 45 | |
| | $S_7$ | | | 80 | 100 | 180 | 50 | | | 175 |

| Parameter | Month/ year → | 7/03 | 8/03 | 11/03 | 2/04 | 3/04 | 7/04 | 10/04 | 1/05 | 4/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc.↓ | | | | | | | | | |
| IX Free CO2 (mg/lit.) | $S_1$ | | 12.6 | | | 13 | Nil | | | |
| | $S_2$ | | 16.8 | | | Nil | Nil | | | |
| | $S_3$ | | 16.8 | | | 17 | 25 | | | |
| | $S_4$ | | 12.6 | | 42 | Nil | 21 | | | |
| | $S_5$ | | | | | Nil | Nil | | | |
| | $S_6$ | | 8.6 | | | 17 | 17 | | | |
| | $S_7$ | | | | | 17 | Nil | | | |
| X Total Hardness | $S_1$ | 140 | 110 | 260 | 190 | 125 | 100 | 150 | 85 | 125 |
| | $S_2$ | 115 | 90 | 265 | 120 | 120 | 100 | 130 | 115 | 120 |
| | $S_3$ | 110 | 95 | 170 | 390 | 175 | 155 | 115 | | |
| | $S_4$ | 113 | 120 | 180 | 180 | 90 | 150 | 115 | | |
| | $S_5$ | | | 140 | 170 | 140 | 85 | 135 | 115 | 115 |
| | $S_6$ | 100 | 120 | 185 | 180 | 190 | 160 | 115 | 70 | |
| | $S_7$ | | | 165 | 230 | 280 | 95 | | | 130 |
| XI Calcium | $S_1$ | 29 | 32 | 59 | 39 | 24 | 21 | 23 | 31 | 21 |
| | $S_2$ | 15 | 32 | 57 | 37 | 21 | 19 | 23 | 17 | 23 |
| | $S_3$ | 27 | 33 | 34 | 24 | 26 | 33 | 25 | | |
| | $S_4$ | 19 | 26 | 48 | 18 | 16 | 31 | 27 | | |
| | $S_5$ | | | 42 | 37 | 16 | 15 | 29 | 22 | 23 |
| | $S_6$ | 19 | 33 | 40 | 44 | 28 | 26 | 23 | 24 | |
| | $S_7$ | | | 33 | 32 | 26 | 19 | | | 25 |
| XII Magnesium | $S_1$ | 17 | 46 | 34 | 23 | 16 | 12 | 23 | 24 | 19 |
| | $S_2$ | 19 | 22 | 32 | 6 | 17 | 14 | 18 | 18 | 16 |
| | $S_3$ | 11 | 39 | 21 | 79 | 27 | 19 | 13 | | |
| | $S_4$ | 22 | 42 | 16 | 18 | 13 | 19 | 12 | | |
| | $S_5$ | | | 10 | 19 | 24 | 12 | 16 | 15 | 15 |
| | $S_6$ | 13 | 38 | 19 | 18 | 30 | 26 | 15 | 24 | |
| | $S_7$ | | | 21 | 36 | 52 | 12 | | | 16 |

| Parameter | Month/ year → | 7/03 | 8/03 | 11/03 | 2/04 | 3/04 | 7/04 | 10/04 | 1/05 | 4/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc.↓ | | | | | | | | | |
| XIII Chloride | $S_1$ | 18 | 40 | 15 | 18 | 28 | 20 | 20 | 18 | 37 |
| | $S_2$ | 27 | 15 | 20 | 21 | 20 | 18 | 20 | 11 | 30 |
| | $S_3$ | 23 | 15 | 33 | 38 | 33 | 38 | 15 | | |
| | $S_4$ | 18 | 23 | 28 | 33 | 23 | 25 | 23 | | |
| | $S_5$ | | | 28 | 23 | 20 | 25 | 30 | 50 | 31 |
| | $S_6$ | 13 | 23 | 33 | 23 | 23 | 33 | 20 | 30 | |
| | $S_7$ | | | 33 | 40 | 43 | 18 | | | 37 |
| XIV Phosphates (mg/Lit.) | $S_1$ | 0.01 | 0.12 | 0.02 | 0.03 | 0.04 | 0.08 | 0.14 | 0.2 | 0.13 |
| | $S_2$ | 0.09 | 0.06 | 0.01 | 0.03 | 0.04 | 0.06 | 0.12 | 0.35 | 0.15 |
| | $S_3$ | 0.44 | 0.32 | 0.01 | 0.04 | 0.05 | 0.05 | 0.08 | | |
| | $S_4$ | 0.62 | 0.1 | 0.04 | 0.06 | 0.07 | 0.06 | 0.1 | | |
| | $S_5$ | | | 0.08 | 0.06 | 0.05 | 0.07 | 0.1 | 0.14 | 0.11 |
| | $S_6$ | 0.32 | 0.06 | 0.04 | 0.05 | 0.07 | 0.07 | 0.12 | 0.5 | |
| | $S_7$ | | | 0.06 | 0.08 | 0.01 | 0.09 | | | 0.18 |
| XV Nitrates (Mg/lit) | $S_1$ | 4 | 3 | 1 | 2 | 4 | 5 | 4 | 7 | 6 |
| | $S_2$ | 6 | 5 | 2 | 3 | 3 | 4 | 5 | 5 | 4 |
| | $S_3$ | 5 | 4 | 1 | 3 | 15 | 8 | 6 | | |
| | $S_4$ | 9 | 4 | 9 | 3 | 6 | 7 | 7 | | |
| | $S_5$ | | | 3 | 4 | 6 | 9 | 6 | 7 | 5 |
| | $S_6$ | 12 | 6 | 1 | 2 | 6 | 5 | 6 | 4 | |
| | $S_7$ | | | 1 | 3 | 6 | 8 | | | 3 |
| XVI Silicates (mg/lit) | $S_1$ | 9 | 13 | 10 | 8 | 8 | 11 | 9 | 10 | 12 |
| | $S_2$ | 9 | 11 | 12 | 9 | 8 | 10 | 11 | 13 | 11 |
| | $S_3$ | 10 | 10 | 9 | 10 | 9 | 11 | 10 | | |
| | $S_4$ | 11 | 9 | 21 | 8 | 5 | 10 | 11 | | |
| | $S_5$ | | | 11 | 10 | 5 | 8 | 10 | 12 | 10 |
| | $S_6$ | 24 | 9 | 11 | 9 | 7 | 9 | 11 | 14 | |
| | $S_7$ | | | 6 | 8 | 9 | 9 | | | 11 |

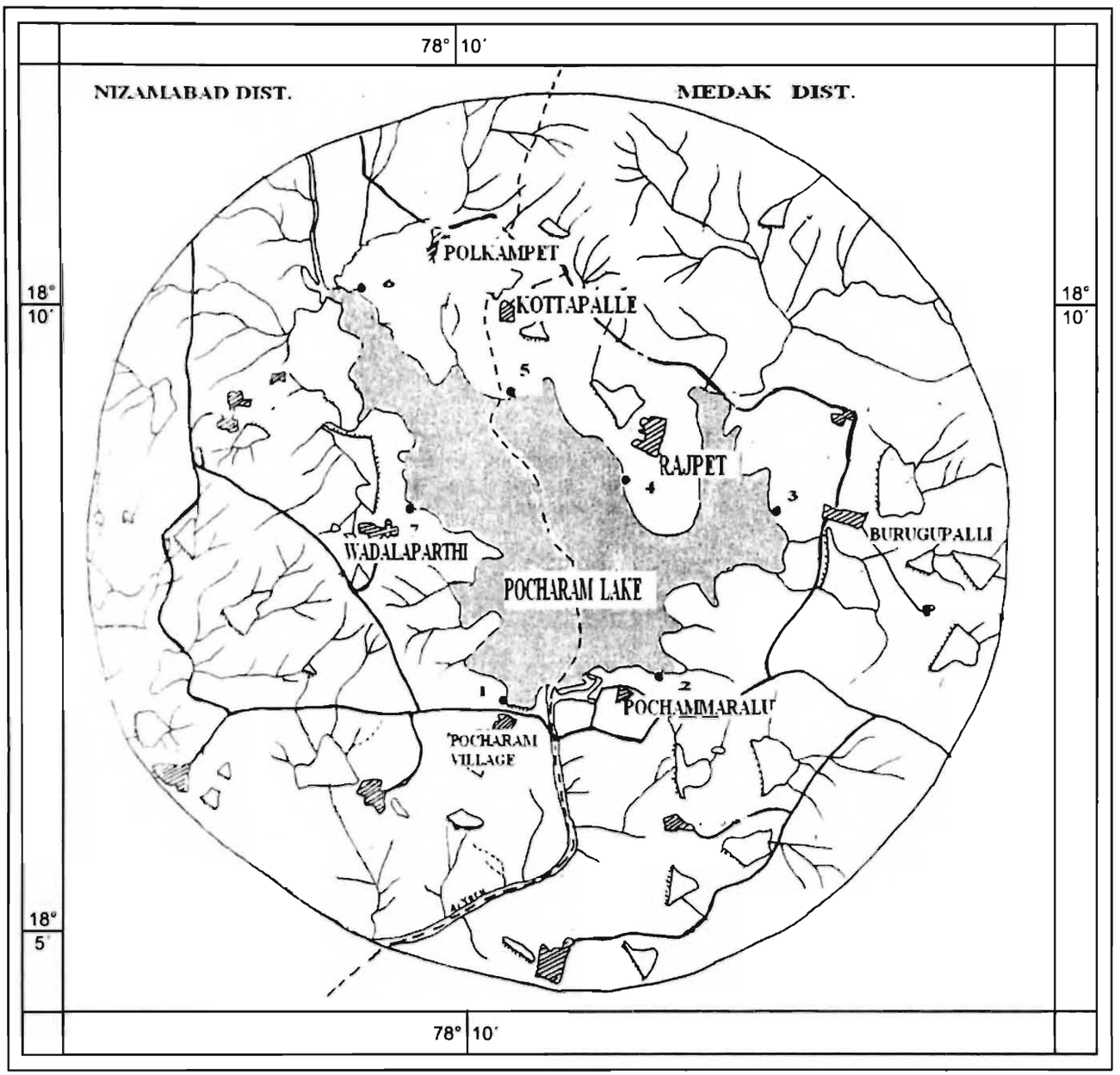
| Parameter | Month/ year → | 7/03 | 8/03 | 11/03 | 2/04 | 3/04 | 7/04 | 10/04 | 1/05 | 4/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Loc.↓ | | | | | | | | | |
| XVII Sulphates | $S_1$ | 13 | 12 | 8 | 6 | 10 | 9 | 12 | 11 | 20 |
| | $S_2$ | 19 | 8 | 10 | 8 | 12 | 9 | 16 | 14 | 24 |
| | $S_3$ | 15 | 7 | 10 | 12 | 6 | 43 | 38 | | |
| | $S_4$ | 18 | 10 | 28 | 19 | 15 | 32 | 43 | | |
| | $S_5$ | | | 18 | 14 | 9 | 11 | 18 | 48 | 36 |
| | $S_6$ | 28 | 7 | 15 | 10 | 15 | 35 | 21 | 45 | |
| | $S_7$ | | | 19 | 14 | 10 | 10 | | - | 32 |
| XVIII Sodium | $S_1$ | 19 | 15 | 8 | 14 | 25 | 32 | 29 | 19 | 26 |
| | $S_2$ | 18 | 8 | 9 | 12 | 16 | 29 | 34 | 25 | 27 |
| | $S_3$ | 28 | 8 | 11 | 21 | 38 | 44 | 42 | | |
| | $S_4$ | 21 | 7 | 46 | 26 | 32 | 36 | 46 | | |
| | $S_5$ | | | 11 | 13 | 22 | 28 | 39 | 52 | 28 |
| | $S_6$ | 9 | 7 | 13 | 16 | 34 | 40 | 41 | 48 | |
| | $S_7$ | | | 24 | 23 | 36 | 30 | | | 22 |
| XIX Potassium | $S_1$ | 6 | 5 | 1 | 1 | 1 | 3 | 3 | 2 | 3 |
| | $S_2$ | 2 | 3 | 5 | 3 | 1 | 2 | 4 | 3 | 4 |
| | $S_3$ | 9 | 5 | 1 | 1 | 2 | 3 | 4 | | |
| | $S_4$ | 9 | 2 | 2 | 2 | 2 | 2 | 5 | | |
| | $S_5$ | | | 2 | 1 | 1 | 2 | 4 | 5 | 4 |
| | $S_6$ | 3 | 3 | 1 | 1 | 2 | 3 | 4 | 4 | |
| | $S_7$ | | | 1 | 1 | 2 | 2 | | | 3 |

**Table 3 :** Showing the Physico-chemical Parameters of Pocharam Lake [required for Irrigation purpose] during 2003-04

| S No. | Parameter | Pocharam (V) | | | Pochamma-ralu | | | Burugapalle | | | Rajpet | | | Kottapalle | | | Mean Values | Toler ance limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M | W | S | M | W | S | M | W | S | M | W | S | M | W | S | | |
| 1. | pH | 7.4 | 7.9 | 7.8 | 8.0 | 7.9 | 7.7 | 7.0 | 7.5 | 7.5 | 7.5 | 7.2 | 8.5 | 7.6 | 7.7 | 7.8 | 7.7 | 6.0 - 8.5 |
| 2. | Electric Conductivity) (micromhos'/cm) | 400 | 290 | 250 | 260 | 320 | 250 | 300 | 320 | 430 | 240 | 810 | 250 | 270 | 350 | 380 | 341.3 | 2250 |
| 3. | Carbonates + Bicarbonates (m.eq./Lit) | 1.97 | 2.6 | 1.48 | 0.98 | 3.06 | 2.78 | 1.97 | 3.56 | 2.79 | 1.48 | 3.48 | 2.98 | 1.48 | 4.23 | 2.05 | 2.46 | |
| 4. | Chloride ( " ) | 1.13 | 0.42 | 0.76 | 0.42 | 0.56 | 0.56 | 0.42 | 0.93 | 0.93 | 0.65 | 0.06 | 0.65 | 0.65 | 0.93 | 0.65 | 0.65 | 17 |
| 5. | Calcium + Magne-sium ( " ) | 4.1 | 3.39 | 1.56 | 2.13 | 3.2 | 1.61 | 5.18 | 2.07 | 2.49 | 3.71 | 1.79 | 1.24 | 3.45 | 1.96 | 2.77 | 2.71 | |
| 6. | Sodium ( " ) | 0.65 | 0.35 | 1.09 | 0.35 | 0.39 | 0.7 | 0.35 | 0.43 | 1.65 | 0.3 | 2.0 | 1.39 | 0.3 | 0.57 | 1.48 | 0.8 | |
| 7. | Potassium ( " ) | 0.03 | 0.13 | 0.03 | 0.08 | 0.13 | 0.03 | 0.13 | 0.28 | 0.05 | 0.05 | 0.7 | 0.05 | 0.08 | 0.03 | 0.05 | 0.12 | |
| 8. | Sulphate ( " ) | 0.25 | 0.17 | 0.2 | 0.17 | 0.2 | 0.25 | 0.15 | 0.02 | 0.12 | 0.2 | 0.58 | 0.31 | 0.15 | 0.31 | 0.31 | 0.23 | 21 |
| 9. | Residual Sodium Carbonate ( " ) | 2.13 | 2.29 | 0.18 | 1.15 | 0.14 | 1.17 | 3.21 | 1.49 | 0.3 | 2.23 | 1.69 | 0.74 | 1.97 | 2.27 | 0.72 | 1.45 | 1.25 |
| 10. | Sodium Absor-ption Ratio ( " ) | 0.58 | 0.27 | 1.21 | 0.34 | 0.31 | 0.8 | 0.2 | 0.43 | 1.5 | 0.2 | 2.2 | 1.78 | 0.23 | 0.58 | 1.25 | 0.79 | 26 |
| 11. | Percent Sodium ( " ) | 13.59 | 9.04 | 41.0 | 13.7 | 10.5 | 29.9 | 6.18 | 15.46 | 39.38 | 7.39 | 44.54 | 51.86 | 0.78 | 22.6 | 34.41 | 22.69 | 60 |
| 12. | Water Quality | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | C2 S1 | |

**M = Monsoon, W = Winter, S = Summer**

**Fig. 1.** Map of Pocharam Lake depicting sampling sites




**Sampling sites : 1.** Pocharam (V), 2. Pochammaralu, 3. Burgupalli, 4. Rajpet, 5. Kottapalle, 6. Polkampet, 7. Wadalaparthi

**Fig. 2.** Graphs showing the seasonal fluctuations in the physico-chemical parameters of Pocharam lake :

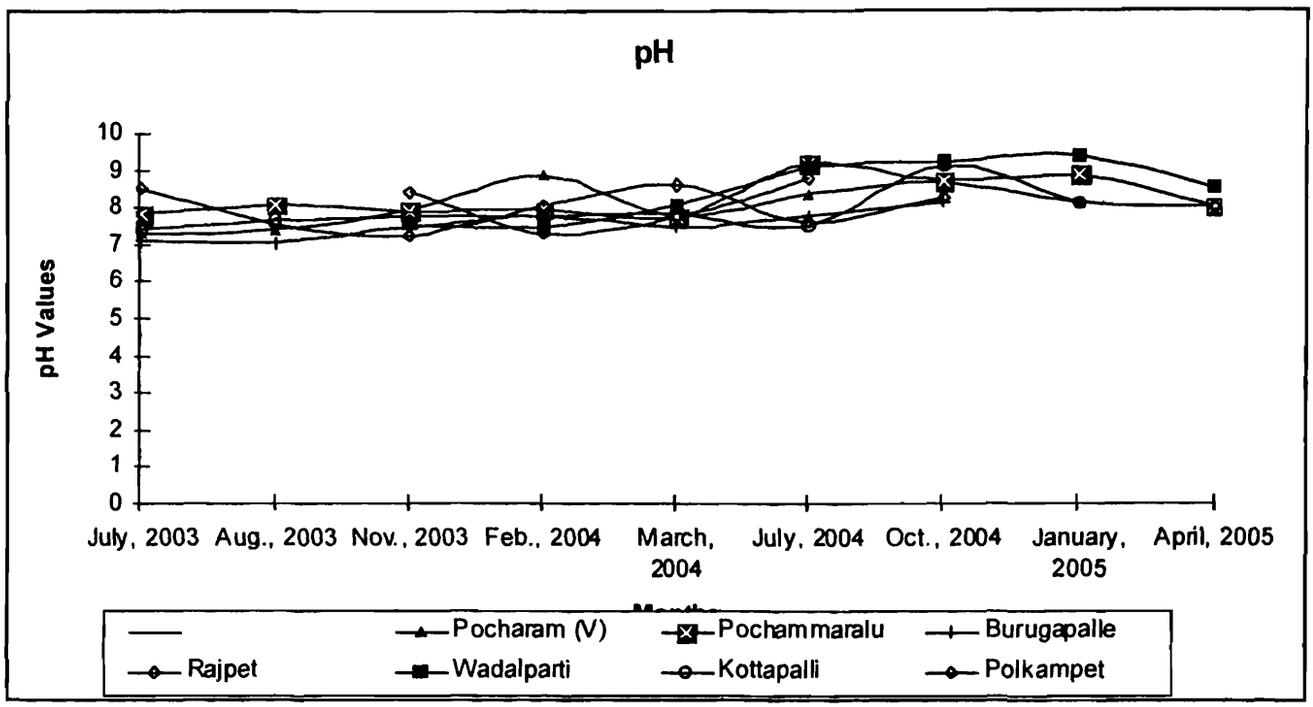



**Fig. 3.**

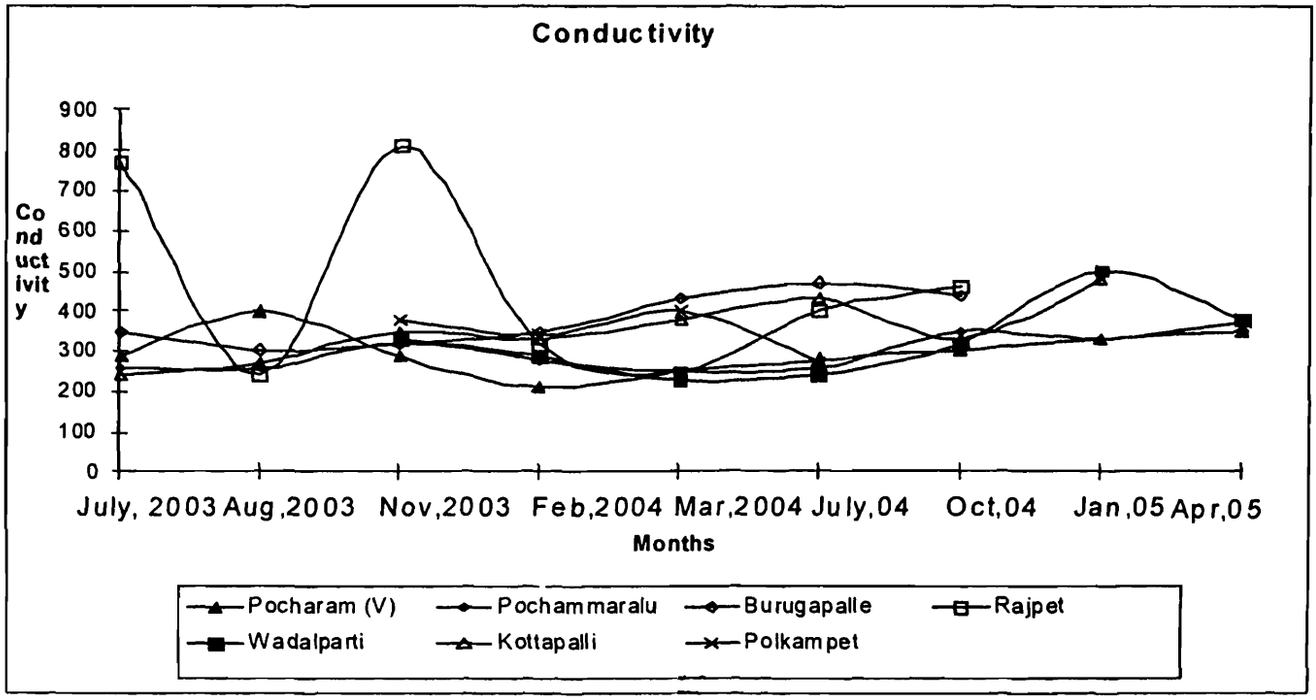


**Fig. 4.**

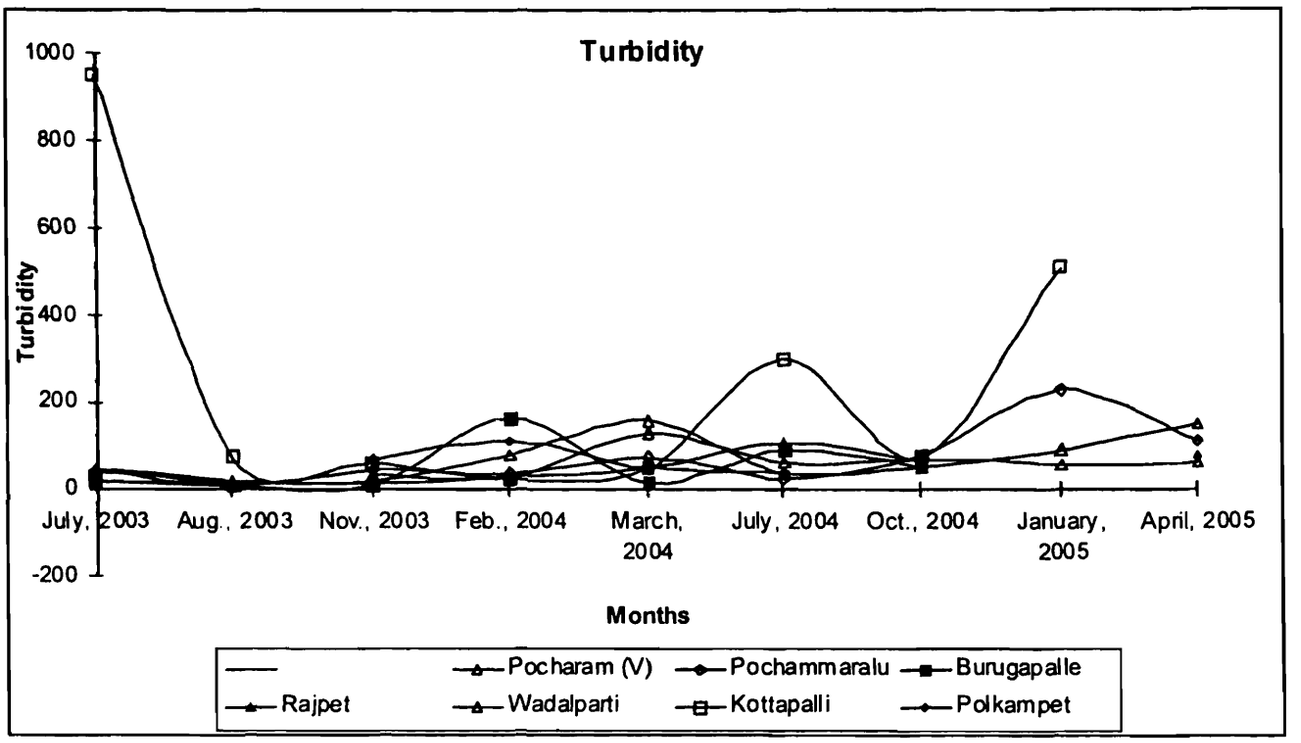

Turbidity
1000
800
600
400
200
0
-200
Turbidity
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 5.**

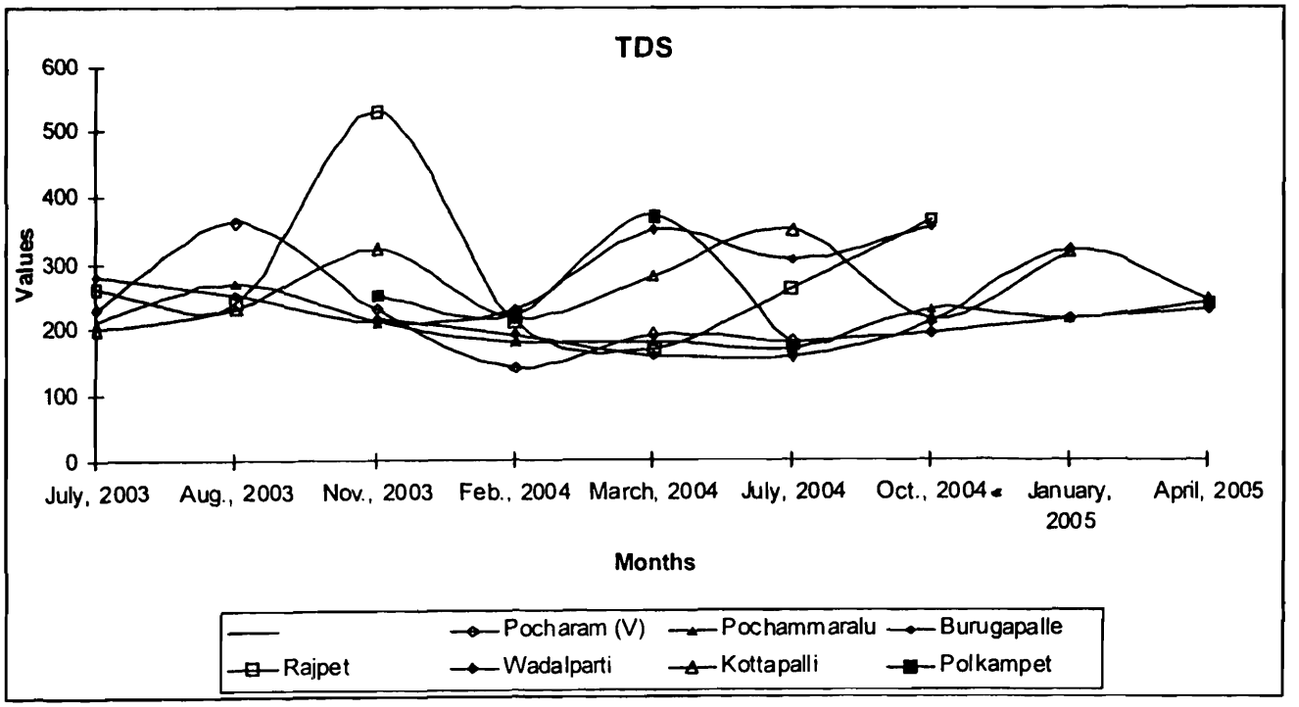

TDS
600
500
400
300
200
100
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 6.**

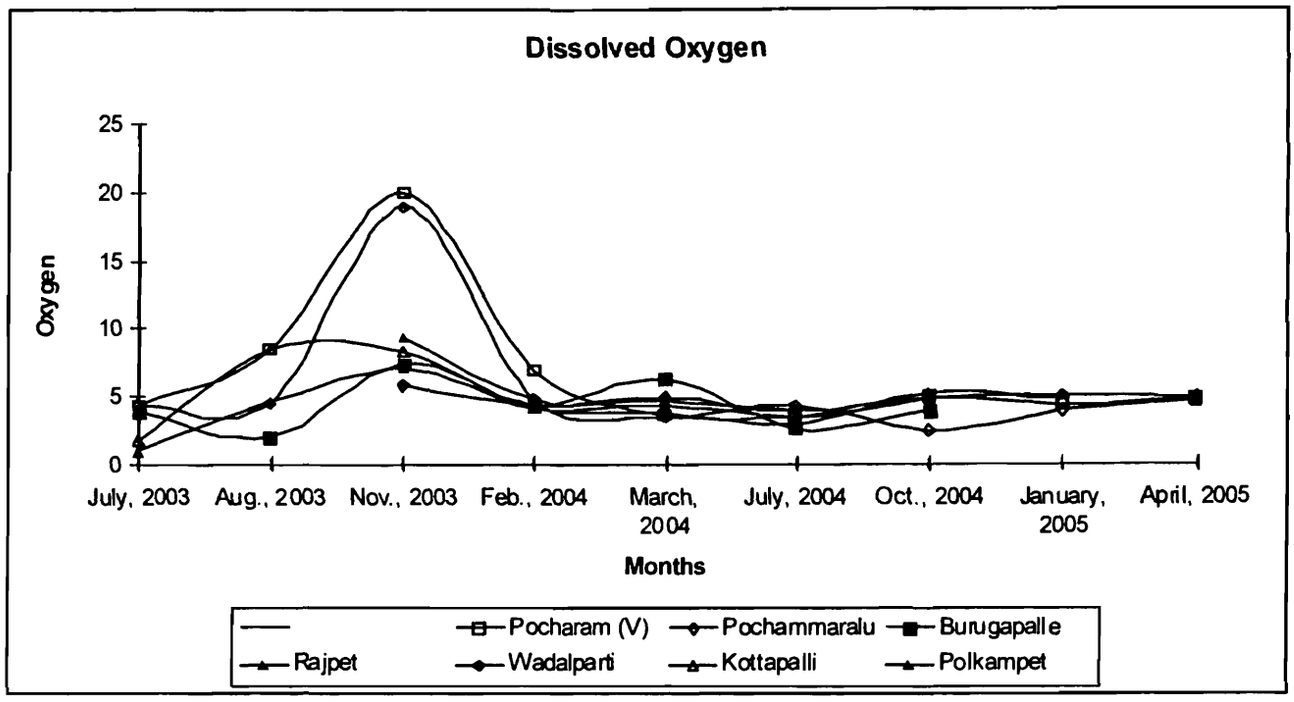

Dissolved Oxygen
Oxygen
25
20
15
10
5
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 7.**

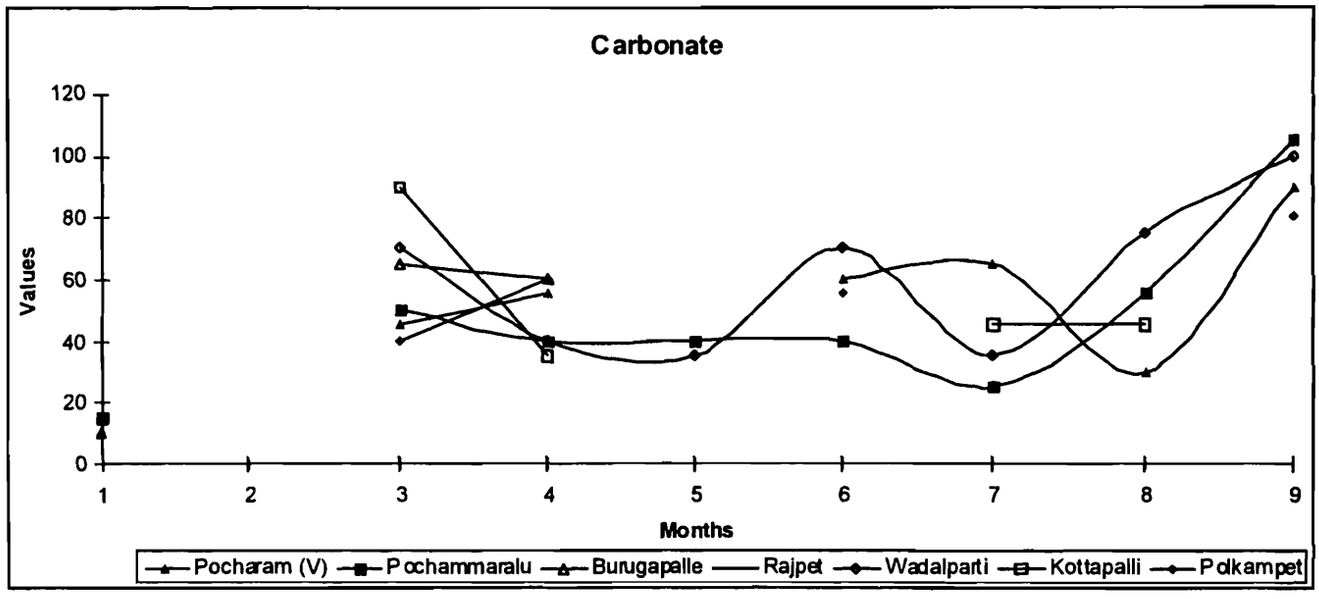

Carbonate
Values
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 8.**

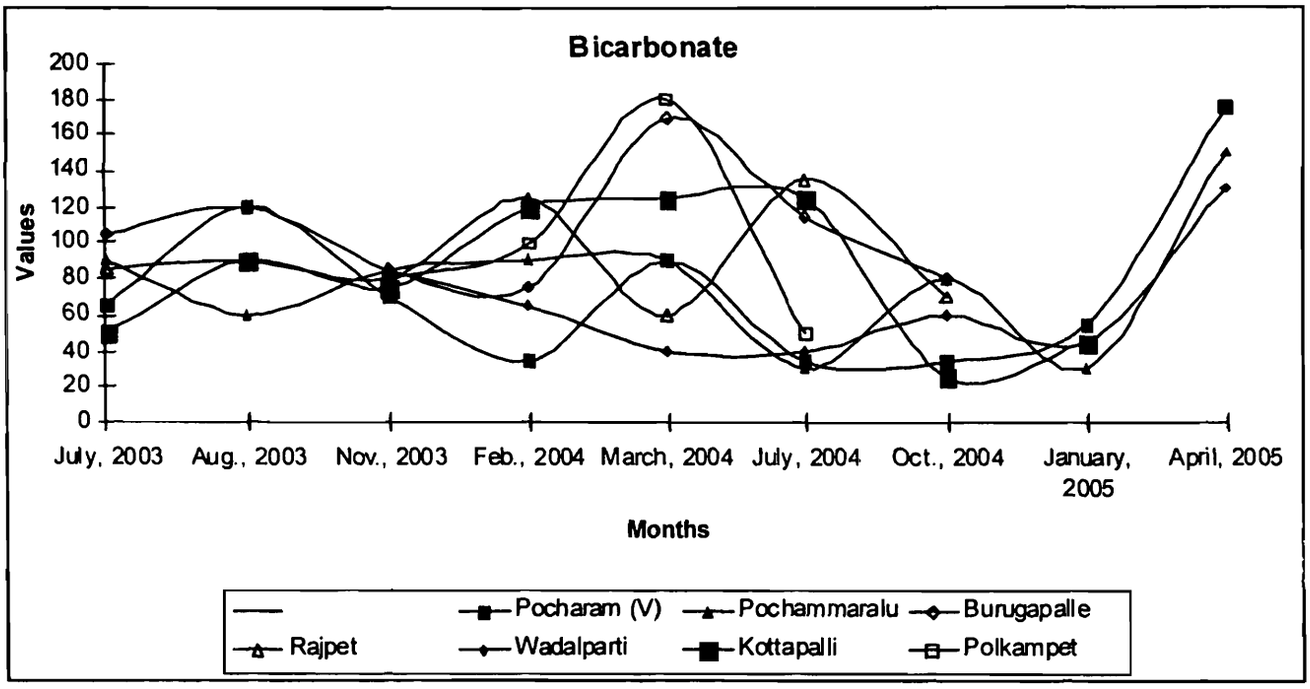

Bicarbonate
Values
200
180
160
140
120
100
80
60
40
20
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 9.**

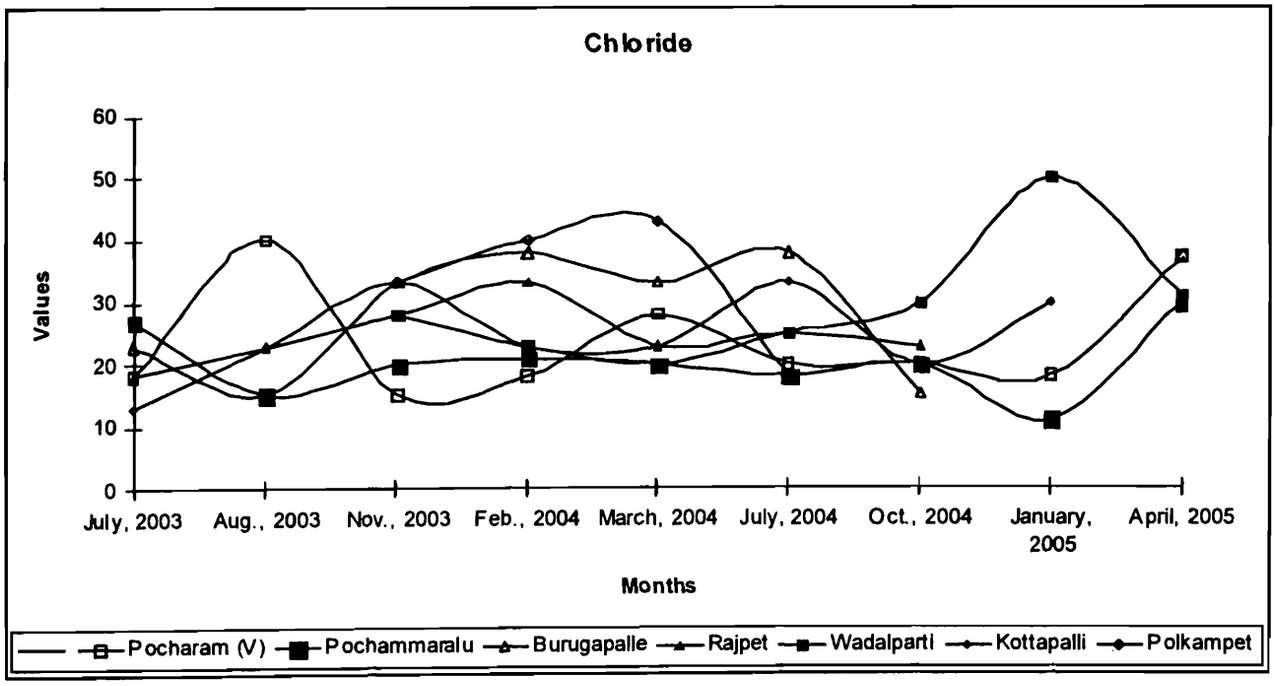

Chloride
Values
60
50
40
30
20
10
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 10.**

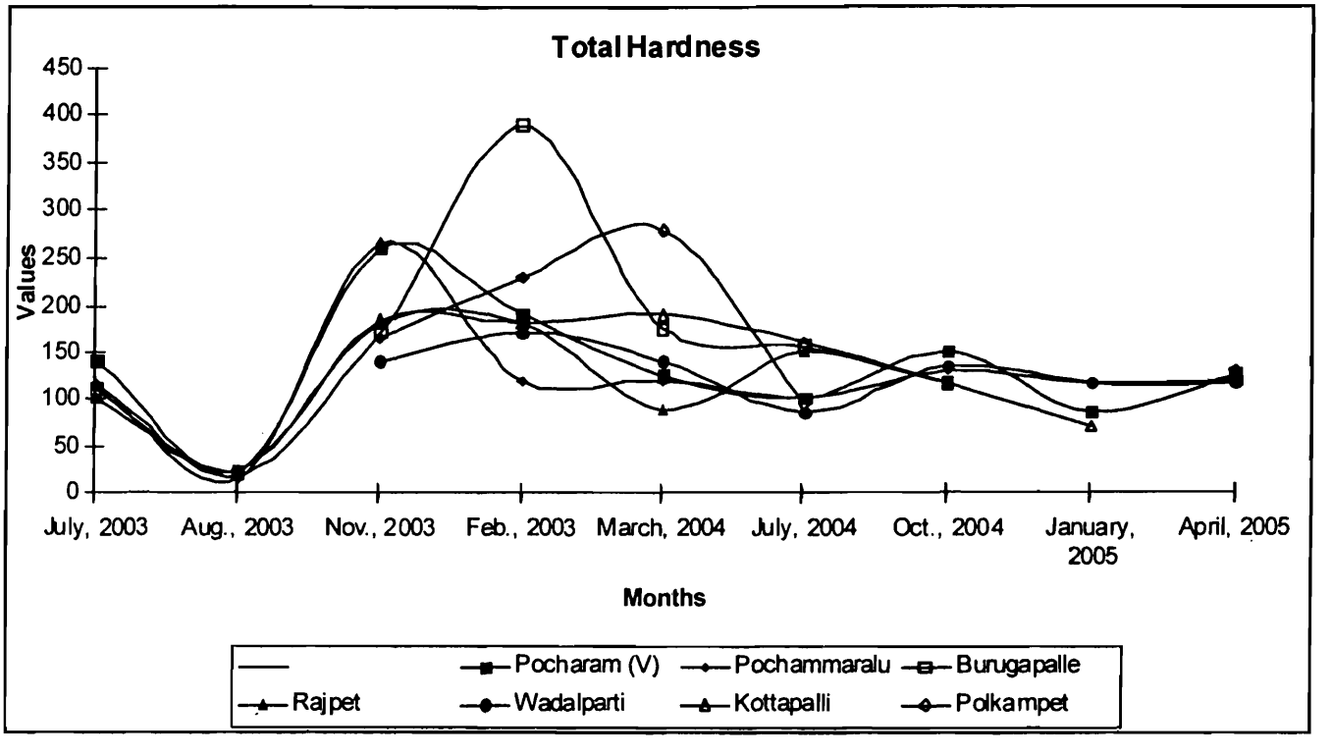

Total Hardness
450
400
350
300
250
200
150
100
50
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2003
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 11.**

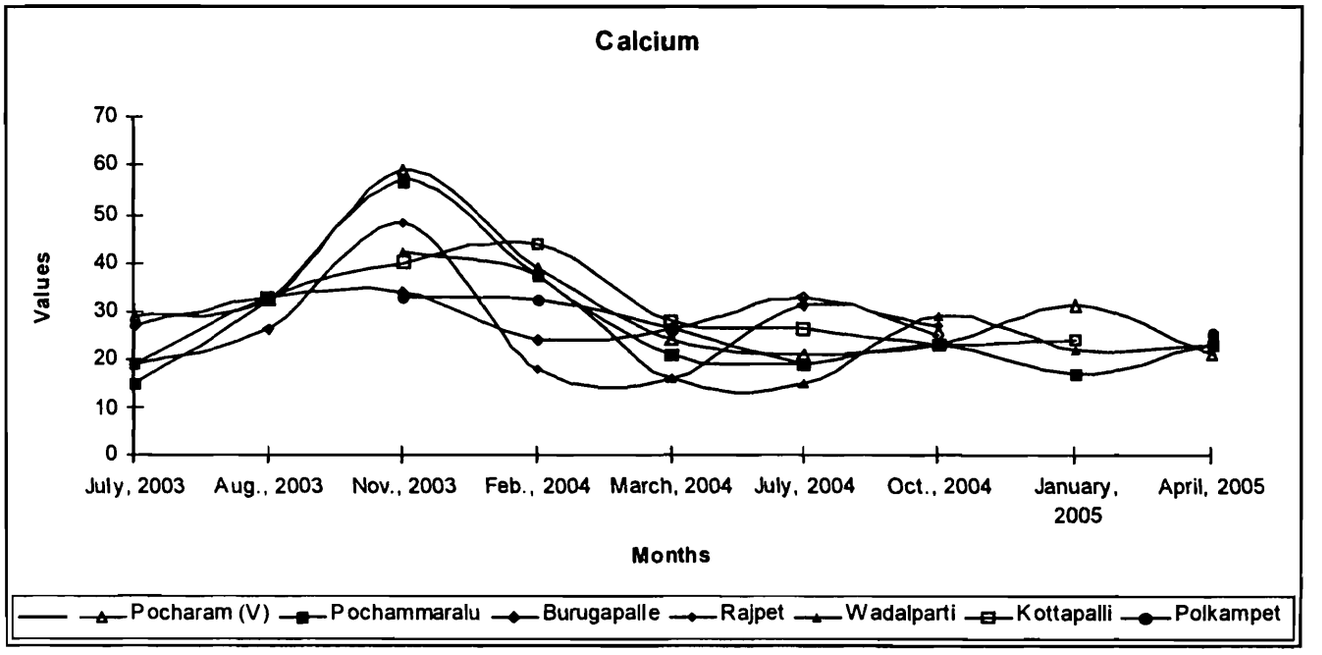

Calcium
70
60
50
40
30
20
10
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 12.**

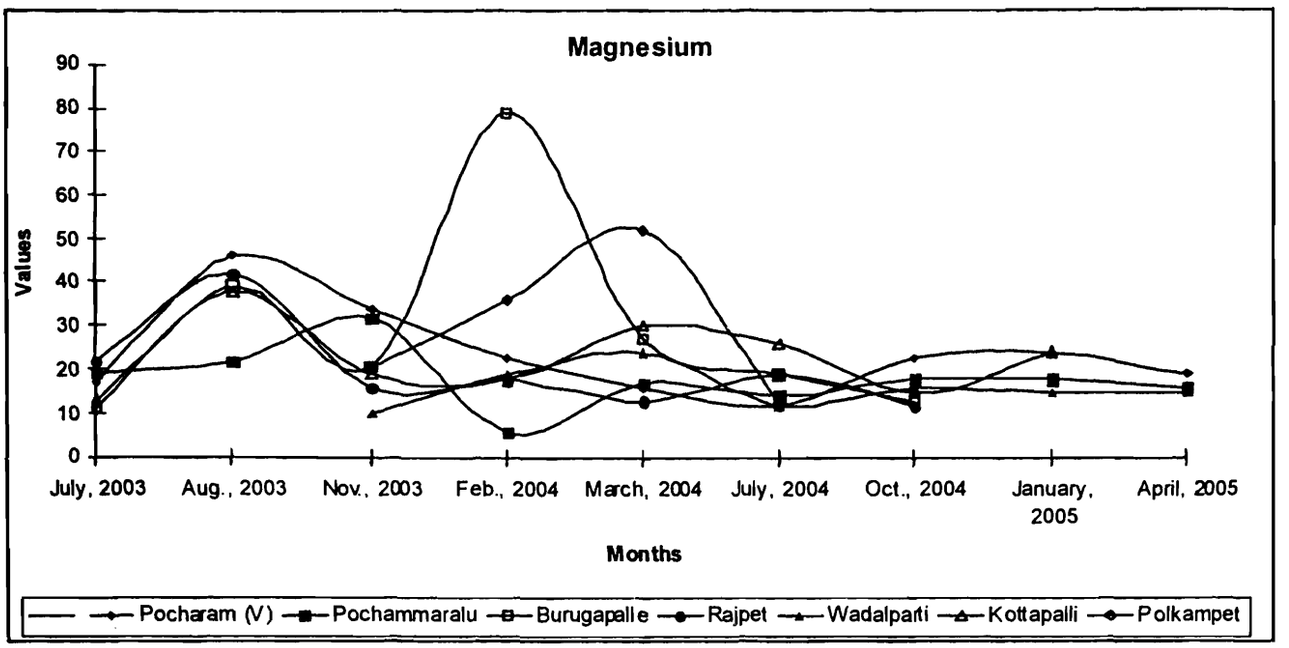

Magnesium
90
80
70
60
50
40
30
20
10
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 13.**

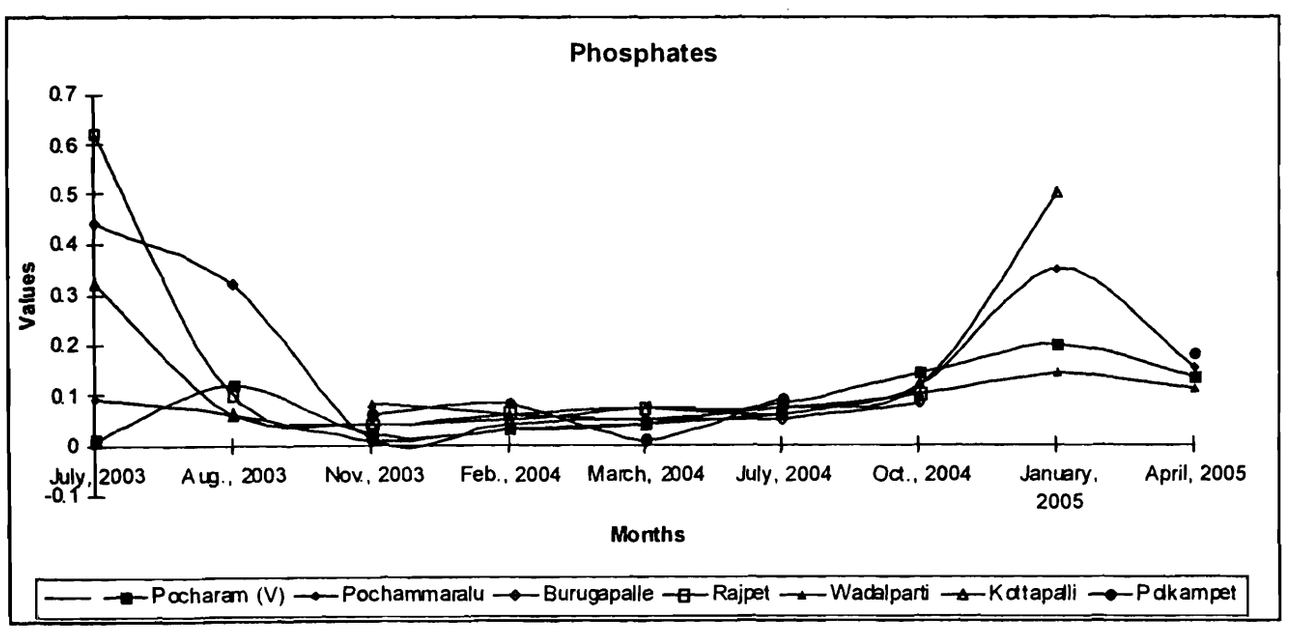

Phosphates
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 14.**

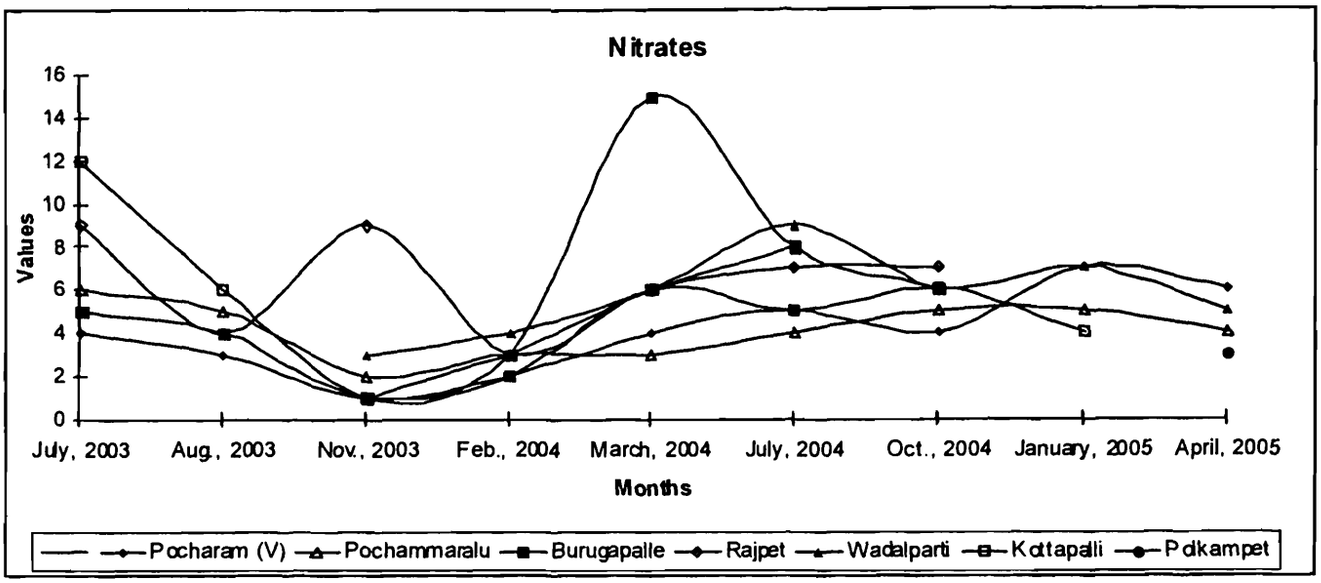

Nitrates
16
14
12
10
8
6
4
2
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Pdkampet

**Fig. 15.**

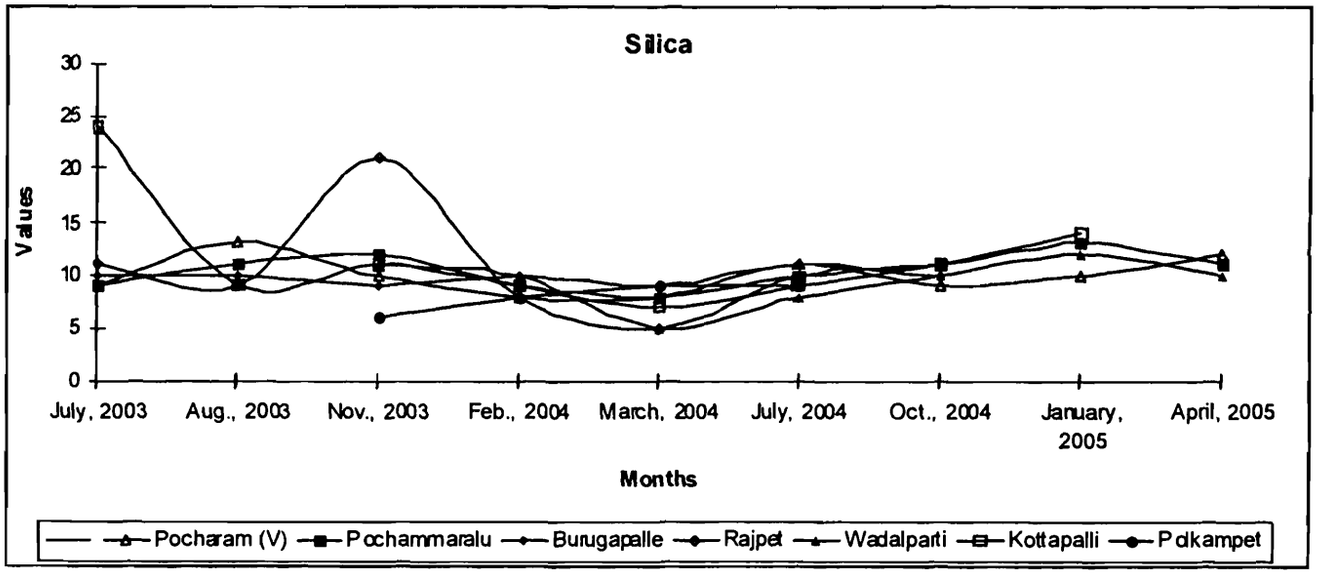

Silica
30
25
20
15
10
5
0
Values
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Pdkampet

**Fig. 16.**

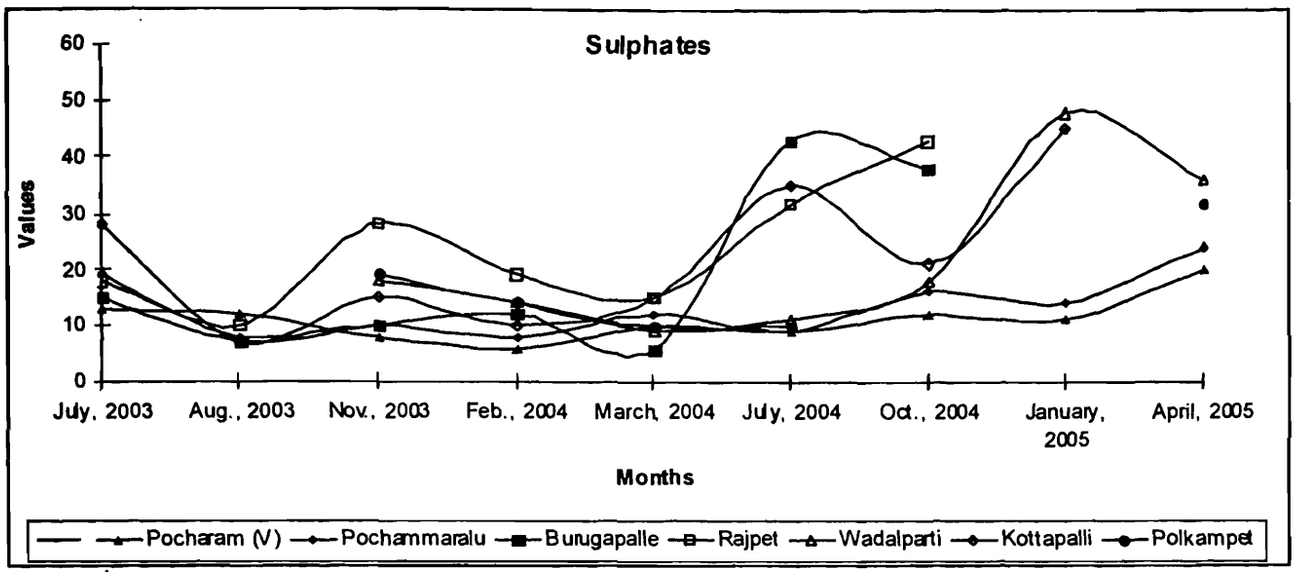

Sulphates
Values
60
50
40
30
20
10
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 17.**

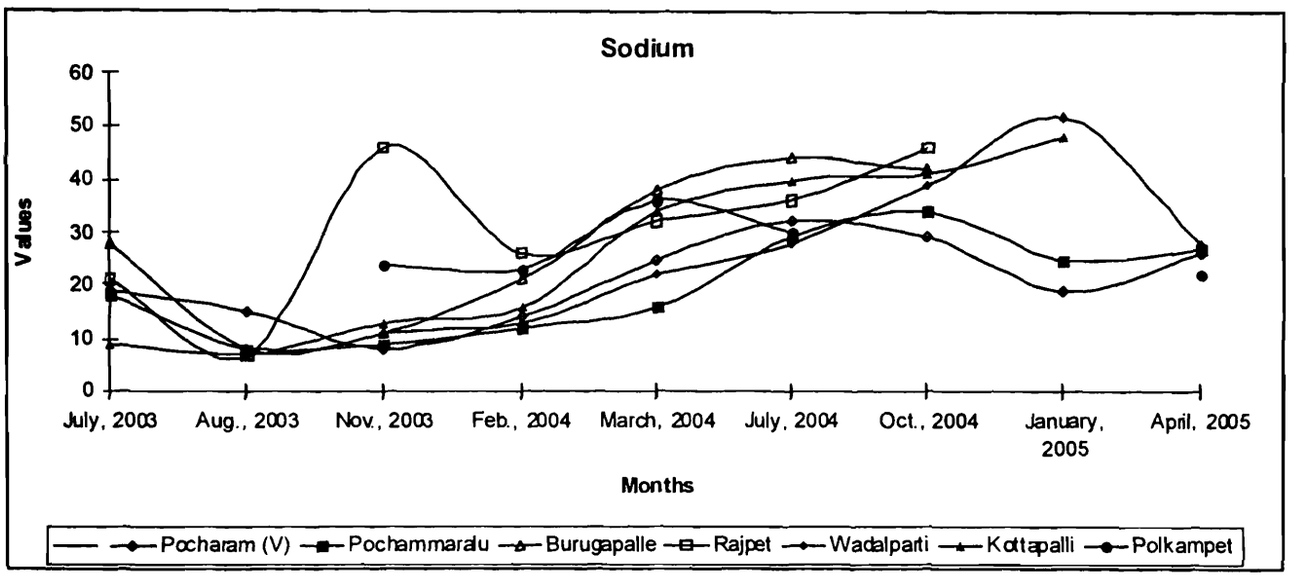
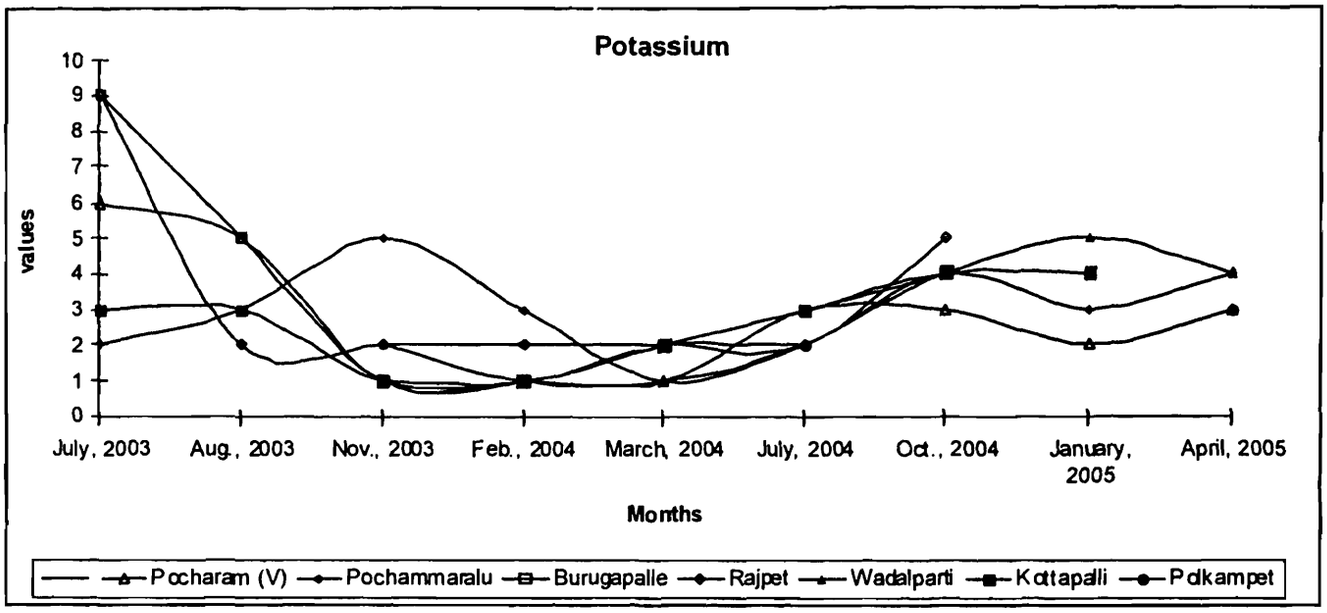

Sodium
Values
60
50
40
30
20
10
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Polkampet

**Fig. 18.**


Potassium
values
10
9
8
7
6
5
4
3
2
1
0
July, 2003
Aug., 2003
Nov., 2003
Feb., 2004
March, 2004
July, 2004
Oct., 2004
January, 2005
April, 2005
Months
Pocharam (V)
Pochammaralu
Burugapalle
Rajpet
Wadalparti
Kottapalli
Pdkampet

*Zool. Surv. India*
*Limnological and faunistic studies of Pocharam Lake, Wetland Ecosystem Series,* **13**, 2010 : 29-36

# ZOOPLANKTON : POCHARAM LAKE

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## INTRODUCTION

In an aquatic ecosystem, zooplankton forms the major micro-faunal component and they are the secondary producers also. They form an important intermediary step in the grazing food chain in aquatic biotope of any ecosystem. They are considered as good indicators of environmental status, water quality and aquatic productivity. The presence and dominance of zooplankton species play a vital role in the functioning of freshwater ecosystems and the seasonal changes in zooplankton species are clearly related to the water quality and biological regime of the aquatic environments.

There is no systematic documentation available on the zooplankton of Andhra Pradesh particularly on Cladocera, Copepoda and Ostracods. Some brief studies on zooplankton of the state have been confined to Chandrasekhar (1995, 2002, 2006), Chandrasekhar and Siddiqi (2005), Chandrasekhar and Arshid Rajesh (2003), Siddiqi and Chandrasekhar (1993), Ranga Reddy (1977), Durga Prasad (1982), Chandrasekhar and Siddiqi (2005). Dhanapathi (2000) and Chandrasekhar (2005) have studied the rotifer fauna of Andhra Pradesh and Hyderabad respectively. Chandrasekhar (2004) has studied the cladoceran fauna of the lakes in and around Hyderabad. The present study is undertaken to record the zooplankton diversity of Pocharam lake, since no such work had so far been carried out on the water body.

## MATERIAL AND METHODS

The zooplankton samples were collected during the surveys on the lake in the years 2003-05 from seven sites surrounding the lake basin [Pocharam (village), Pochammaralu, Burugapalle, Rajpet, Kottapalle, Polkampet and Wadalparti]. These samples were collected by diving plankton net (No. 25) on the subsurface regions of the

water body and collected in the plastic bottle that was tied at the end of the net. Plankton collections were preserved in 4% formaldehyde solution and the methodology categorization is based on the works of Battish (1992), Dhanapathi (2000), Sharma (1997).

## RESULTS AND DISCUSSION

The qualitative samples wherein the materials from all the seven localities have been observed, show an annual species diversities of 41 species, comprises of Rotifera (24 species), Cladocera (11 species), Copepoda (3 species) and Ostracoda (3 species). The bulk of zooplanktonic assemblages of Pocharam lake is contributed primarily by Rotifers, followed by cladocerans, copepods and ostracods. Group wise relative percentage of zooplanktonic group is Rotifera 58.54%, Cladocera 26.83%, Copepoda 7.31% and Ostracoda 7.31%.

Qualitative list of zooplankton in Pocharam lake during 2003-05.

Phylum ROTIFERA

Class MONOGONONTA

Order PLOIMIDA

Family BRACHIONIDAE

1. *Brachionus angularis* Gosse, 1851
2. *Brachionus calyciflorus* f. *anuereformis* (Brehm, 1909)
3. *Brachionus calyciflorus* f. *borgerti* (Apstein, 1970)
4. *B. calyciflorus* var. *dorcas* Gosse, 1851
5. *B. caudatus* Barrois, 1894
6. *B. diversicornis* Daday, 1883
7. *B. falcatus* Zacharias, 1898
8. *B. forficula* Wierzeski, 1891
9. *B. plicatilis* Muller, 1786
10. *B. quadridentatus* Hermann, 1783
11. *Keratella tropica* Apstein, 1907
12. *Platiyas quadricornis* Ehrenberg, 1832

Family MYTILINIDAE

*Mytilina ventralis* (Ehrenberg, 1832)

Family TRICHOTRIDAE

*Trichocerca pusilla* (Lauterborn, 1898)

Family LECANIDAE

*Lecane (Lecane) curvicornis* Murray, 1913

*Lecane (L) lauterborni* (Hauer, 1924)

*Lecane (L) leotina* (Turner, 1892)

*Lecane (L) papuana* (Murray, 1913)

*Lecane (L) ungulata* (Gosse, 1887)

*Lecane (Monostyla) bulla* (Gosse, 1851)

Family ASPLANCHNIDAE

*Asplanchnopus bhimavaranensis* Dhanapathi, 1975

Order GNESIOTROCHA

Family TESTUDINELLIDAE

*Testudinella mucronata* Gosse, 1886

Order GNESIOTROCHA

Family FILINIDAE

*Filinia opoliensis* (Zucharias, 1898)

*Filina terminalis* (Plate, 1886)

Class CRUSTACEA

Subclass BRANCHIOPODA

Order CLADOCERA

Family MOINIDAE

*Moina micrura* Kurz, 1874

Family MACROTHRICIDAE

*Ilyocryptus spinifer* Herick, 1882

Family CHYDORIDAE

Subfamily CHYDORINAE

*Chydorus parvus* (Daday, 1898)

*Chydorus barroisi* Richard, 1894

*Chydorus reticulatus* Daday, 1898

*Chydorus ventricosus*, Daday, 1898

Subfamily ALONINAE

*Alona rectangula rectangula*, Sars, 1862

*Alona rectangula richardi* (Stingelin, 1895)

*Alona davidi davidi*, Richard, 1895

*Alona coastata*, Sars, 1862

*Kurzia longirostris* (Daday, 1898)

COPEPODA

Class MAXILLOPODA

Subclass COPEPODA

Order CALANOIDA

Family DIAPTOMIDAE

Subfamily DIAPTOMINAE

*Heliodiaptomus* sp.

*Phyllodiaptomus* sp.

Order CYCLOPOIDA

Family CYCLOPIDAE

*Cyclops* sp.

Subclass OSTRACODA

Order POPOCOPIDA

Suborder PODOCOPA

Family CYPRINIDAE

Subfamily CYPRININAE

*Cypris* sp.

*Strandesia* sp.

Subfamily STENOCYPRINAE

*Stenocypris* sp

Rotifers formed the most dominant plankters of Pocharam lake and showed high diversity in almost all the localities particularly in Kottapalle, followed by Pochammaralu (Table 1) Rotifers were represented by families *viz.,* Brachionidae (9 species), Mytilinidae, Trichotridae, Asplanchnidae and Testudinellidae (each one species), Lecanidae (6 species) and Filinidae (2 species). Cladocerans were represented by the families Chydoridae (9 species), Moinidae and Macrothricidae (each one species). The Copepods and Ostracod diversity in the lake is relatively poor and represented by the families Diaptomidae (2 species) and Cyclopidae (one species) in Copepoda and Ostracoda with three species in the family, Cyprinidae.

Among Rotifers, Brachionids dominated the rest taxa, represented by three genera *viz., Brachionus, Keratella* and *Platiyas*. Out of the three brachionid genera, *Brachionus* was constituted by eight species with three varieties / forms, the genera *Keratella* and *Platiyas* were represented each with one species. The other important group, Lecanidae, was represented by six species of the genus *Lecane*. In general, most of the tropical alkaline waters are dominated by the genus, *Brachionus,* as it has got adopted with its large number of species, subspecies and polymorphs to the alkaline conditions of the waters (Dhanapathi, 2000). The second dominant group, Cladocera have represented with 11 species belonging to the chydorid family with three genera *viz., Chydorus*, and *Alona* each with four and *Kurzia* with one species. The other two families, Moinidae and Macrothricidae got one species each. Almost all the cladoceran fauna was observed in Pocharam (v) followed by Rajpet. Among the Copipodites, the calanoids *viz., Heliodiaptomus* sp. has shown its presence in Pocharam (V) and Pochammaralu and *Phyllodiaptomus* sp. was noticed in Kottapalle and Polkampet. The only calanoid, *Cyclops* sp. was observed in Rajpet and Kottapalle (Table 1).

## SUMMARY

A qualitative zooplanktonic study had been undertaken on Pocharam lake, Andhra Pradesh by collecting plankton samples seasonally from seven sites surrounding the water body during 2003-2005. The study has revealed the presence of 41 species, out of which 24 Rotifera, 11 Cladocera, 3 Copepoda and 3 Ostracoda.

## ACKNOWLEDGEMENTS

The author is thankful to the Director, Zoological Survey of India (ZSI), Kolkata and the Officer-in-Charge, ZSI, Hyderabad for providing facilities in writing this paper.

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**Table 1** : Showing the site-wise presence of zooplankton species in Pocharam lake.

| Sl. No. | Species | Poch. (V) | P'ralu | B'Palle | R'pet | K'palle | P'pet | W'parti |
|---|---|---|---|---|---|---|---|---|
| | **ROTIFERA** | | | | | | | |
| 1. | *Brachionus angularis* | + | | + | - | + | | + |
| 2. | *B. calyciflorus f. anuereformis* | | + | | - | | + | + |
| 3. | *B. calyciflorus f. borgerti* | | - | | | + | - | - |
| 4. | *B. calyciflorus var. dorcas* | | | + | | + | + | |
| 5. | *B. caudatus* | | + | | - | + | + | + |
| 6. | *B. diversicornis* | | + | | + | + | + | + |
| 7. | *B. falcatus* | | - | + | | + | + | - |
| 8. | *B. forficula* | | + | | | + | - | + |
| 9. | *B. plicatilis* | | + | | | - | | - |
| 10. | *B. quadridentatus* | + | + | + | | + | - | - |
| 11. | *Keratella tropica* | - | - | | + | + | + | + |
| 12. | *Platiyas quadricornis* | | | + | | + | - | + |
| 13. | *Mytilina ventralis* | | - | | | - | | + |
| 14. | *Trichocerca pusilla* | | + | | | + | | |
| 15. | *Lecane (Lecane) curvicornis* | + | | | + | + | - | - |
| 16. | *Lecane (L.) lauterborni* | | + | | | | - | - |
| 17. | *Lecane (L) leotina* | | | | - | - | + | |
| 18. | *Lecane (L) papuana* | | - | | | + | - | |
| 19. | *Lecane (L) ungulata* | | | | + | | | |
| 20. | *Lecane (Monostyla) bulla* | | + | + | | + | + | |
| 21. | *Asplanchnopus bhimavaranensis* | | | | | + | | |
| 22. | *Testudinella mucronata* | | | | + | + | - | + |
| 23. | *Filinia opoliensis* | | | | | + | | |
| 24. | *Filina terminalis* | + | | | | + | | |

| Sl. No. | Species | Poch. (V) | P'ralu | B'Palle | R'pet | K'palle | P'pet | W'parti |
|---|---|---|---|---|---|---|---|---|
| | **CLADOCERA** | | | | | | | |
| 25. | *Moina micrura* | + | + | | - | - | - | - |
| 26. | *Ilyocryptus spinifer* | - | - | - | + | - | - | - |
| 27. | *Chydorus parvus* | + | | - | - | - | - | - |
| | | | | | | | | |
| **I** | **II** | **III** | **IV** | **V** | **VI** | **VII** | **VIII** | **IX** |
| 28. | *C. barroisi* | + | - | | + | | - | - |
| 29. | *C. reticulatus* | + | | | | | | - |
| 30. | *C. ventricosus* | | | | + | | | |
| 31. | *Alona rectangular rectangula* | + | | | | | | - |
| 32. | *A. rectangula richardi* | + | | | | | + | + |
| 33. | *A. davidi davidi* | + | + | | - | - | + | + |
| 34. | *A. coastata* | + | | | | | - | - |
| 35. | *Kurzia longirostris* | - | | + | - | - | - | - |
| | **COPEPODA** | | | | | | | |
| 36. | *Heliodiaptomus sp.* | + | + | - | - | - | - | - |
| 37. | *Phyllodiaptomus sp.* | - | | | | + | + | + |
| 38. | *Cyclops sp.* | | + | | + | + | | - |
| | **OSTRACODA** | | | | | | | |
| 39. | *Strandesia sp.* | + | | + | + | + | - | - |
| 40. | *Cypris sp.* | + | + | + | + | | + | - |
| 41. | *Stenocypris sp.* | + | + | + | - | - | + | |

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# AQUATIC INSECTS (HEMIPTERA AND COLEOPTERA)

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Pocharam lake is a large water storage reservoir constructed between 1916 and 1922 (18°08'N 77° 57'E) at about 100 kms north-west of Hyderabad in Medak and Nizamabad districts of Andhra Pradesh. The lake water is being used for irrigation and domestic use. The present account is based on Insect collections made from nine surveys of Pocharam wetland, Medak Dist. Andhra Pradesh by various survey parties of Fresh water Biological Station, ZSI (2003 to 2005). This paper is dealt with a study on the Aquatic insects of Pocharam lake, that had shown the presence of 11 species belonging to, 6 families and 8 genera.

## INTRODUCTION

Aquatic insects play an important role not only in trophicodynamics of ecosystem, but also in the indication of the changes in the quality of water due to pollution or degradation because of their ability to respond quickly to such changes. It is estimated that about 3% of total insects are aquatic spending at least a part of their life cycles in the water and these comprise about 25,000 to 30,000 species (Cheng, 1976, & Ushinger, 1978).

In the present study, only two orders of aquatic insects were studied i.e. Hemiptera and Coleoptera. Hemiptera are true "Bugs" In spite of 80 genera and 275 species accommodated in 16 major families of aquatic and semi aquatic Hemiptera known from India (Thirumalai, 2002), very little information on water bugs of Andhra Pradesh is available.

Although aquatic coleopterans commonly known as water beetles are highly diverse and distributed to nearly 14 families, only a few namely Dytiscidae and Hydrophilidae are chiefly represented in this wetland. They are minute to large (0.6 to 15 cm) in size and

usually sclerotised insects. The water beetles show wide diversity of colour, form and life pattern. (Vazirani, 1968)

The study on Aquatic insects of Pocharam lake has revealed 11 species belonging to 2 orders, 6 families and 8 genera. Limited number of studies has also been carried out on general entomofauna of some specific wetlands from taxo-ecological view points which includes the work of Roy (1988), Bhattacharya (2000), Ramakrishna (2000), Ghosh (1996), Tonapi (1959) and Vazirani, (1970, 1973).

**Pocharam Lake** : Pocharam lake is a large water storage reservoir constructed between 1916 and 1922 (18°08'N 77°57'E) at about 100 kms north-west of Hyderabad in Medak and Nizamabad districts of Andhra Pradesh. The water spread area of the lake is about 16.835 sq. km, with a depth of about 6-7 mts. depending on the season and fluctuations in rain fall. The lake water is being used for irrigation and domestic use.

## MATERIAL AND METHODS

During the course of quarterly surveys in connection with faunistic studies on the lake during 2003-2005, collections was made with the help of hand operated nets of varying sizes by randomly netting different areas of wetland. While surface floating/swimming insects were collected with small circular nets made of either coarsely meshed cotton cloths or finely meshed polyester mosquito curtain cloth. Macrophytes associated insects were collected with help of hand operated 'D' framed sweep net of the size of 50 cm length, 25 cm maximum breadth of the 'D' The frame was attached to a bag net made of fine malmal cloth with mesh size of approximately 200$\mu$. The design and operation of the net was roughly based on those described by Junk (1977). Insects collected for study were preserved in 4% formalin or 70% alcohol. In order to cover the whole topography of the water body, seven village spots that are passing around the bank of the lake have been selected [Pocharam Village, Pochammaralu, Burugapalle, Rajpet, Kottapalle, Wadalparti and Polkampet]. Aquatic hemiptera in the collections was identified with the aid of standard literature on the group *viz.,* Thirumalai (1999) and Bal and Basu (1994a & 1994b). Under each species citation for the original description and other accompanying work necessary to understand the taxon or its occurrence in India is given.

## Systematic list

Order HEMIPTERA

Suborder HETEROPTERA

Infraorder NEPOMORPHA

Family NEPIDAE

Subfamily RANANTRINAE

Tribe RANATRINI

Genus ***Ranatra*** (Fabricius)

1. *Ranatra elongata* (Fabricius)
2. *Ranatra filiformis* (Fabricius)

Subfamily NEPINAE

Tribe NEPINI

Genus ***Laccotrephus*** (Stal)

3. *Laccotrephus griseus* (Guerin-Meneville)
4. *Laccotrephus ruber* (Linnaeus)

Family BELOSTOMATIDAE

Subfamily BELOSTOMATINAE

Genus ***Diplonychus*** (Laporte)

5. *Diplonychus rusticus* (Fabricius)

Family CORIXIDAE

Subfamily MICRONECTINAE

Genus ***Micronecta*** (Kirkaldy)

6. *Micronecta scutellaris scutellaris* (Stal)

Infraorder GERROMORPHA

Family GERRIDAE

Subfamily GERRINAE

Genus ***Limnogonus*** (Stal)

7. *Limnogonus (Limnogonus) nitidus* (Mayr)
8. *Limnometra fluviorum* (Fabricius)

Order COLEOPTERA

Family DYTISCIDAE

Subfamily HYDROPORINAE

Genus ***Hydrovatus*** (Sharp)

9. *Hydrovatus confertus* (Sharp)

Subfamily NOTORINAE

Genus ***Canthydrus*** (Walker)

10. *Canthydrus laetabilis* (Walker)

Family HYDROPHILIDAE

Subfamily HYDROPHILINAE

Genus ***Hydrophilus*** (Bedel)

11. *Hydrophilus rufocinctus* (Bedel)

## Systematic Account

Order HEMIPTERA

Hemiptera are true "Bugs" They may be distinguished from other aquatic insect orders by 1) the presence of a piercing and sucking beak like structure formed by the modification of the mouth parts, inserted near the anterior end of the head, 2) leathery anterior pair of wings at the base and membranous at apical region and completely membranous second pair, and 3) simple and gradual metamorphosis. In spite of 80 genera and 275 species accommodated in 16 major families of aquatic and semi aquatic Hemiptera known from India (Thirumalai, 2002), very little information on water bugs of Andhra Pradesh is available.

Suborder HETEROPTERA

Infraorder NEPOMORPHA

Family NEPIDAE

The insects belonging to this family are popularly known as "water scorpions" because of fact that forelegs somewhat resemble to the pedipalps of scorpions. The body is dorsoventrally fattened or cylindrical with long slender legs, the anterior pair being raptorial with long and stout femur used mainly for capture of prey. One jointed tarsi and absence of ocelli are the characteristic feature of family. Two long slender non retractile caudal filaments with grooves on median surface and fitted together constitute the respiratory tube. By placing its tip at the surface film, oxygen in the tracheal system is replenished.

Nepids are sluggish in nature and prefer still water. They are usually found in trash and mud or remain entangled with aquatic vegetation in the shallow littoral region of wetlands. Highly predacious insect species feed mainly on live insects and their nymph. The prey is captured with the help of raptorial forelegs. The most important cosmopolitan genus Ranatra occurs abundantly in this region.

Subfamily RANANTRINAE

1. ***Ranatra elongata*** (Fabricius)

1790. *Ranatra elongata* Fabricius, Skirf. *Nat. Selesk.*, **1** : 228.

1994. *Ranatra elongata* Fabricius, Thirumalai, *Rec. zool. Surv. India, Occ. Pap. No.*, **165** : 22.

**Material examined** : 4 exs., Pocharam village, 12.4.2005, SVAC Sekhar & Party. 3 exs., Wadalaparthy, 4.11.2003, S.S. Kamble & Party. 4 exs., Rajpet, 22.12.2004, Deepa & Party.

**Diagnostic characters** : It is reported to be feeding on tadpoles, nymph of mayflies and other aquatic Hemipterans and during dry seasons it is known to migrate in search of suitable areas. This species can be identified by the structure of the anterior femur, which is provided with a triangular tooth beyond the middle of its length, and the metasternal process, which is sub triangular.

**Distribution** : India : Andhra Pradesh, Bihar, Delhi, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

**Elsewhere** : Australia, Nepal, Sri Lanka.

### 2. ***Ranatra filiformis*** (Fabricius)

1970. *Ranatra filiformis* Fabricius, *Skri. Nat. Selsk.*, **1** : 228.

1989. *Ranatra filiformis* : Thirumalai, *Rec. zool. Surv. India, Occ. Pap. No.*, **118** : 31.

**Material examined** : 3 exs., Pocharam village, 7.01.2005, SVAC Sekhar & Party. 4 exs., Pochammaralu, 7.01.2005, SVAC Sekhar & Party. 4 exs., Burugupally, 12.4.2005, SVAC Sekhar & Party. 3 exs., Burugupally, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species is found in shallow parts of water, clinging to submerged vegetation and feeds on nymphs of dragon flies and mosquito pupae. This species is smaller in size than *R. elongata*.

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Manipur, Meghalaya, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

**Elsewhere** : China, Nepal, Pakistan, Philippines, Sri Lanka.

## Subfamily NEPINAE

## Tribe NEPINI

## Genus ***Laccotrephus*** (Stal)

### 3. ***Laccotrephus griseus*** (Guerin-Meneville)

1844. *Nepa griseus* Guerin, *Iconogr. Regne Anim.* Ins., 352.

1906. *Laccotrephus griseus* (Guerin) : *Distant, Fauna British India,* **5** : 314.

1994. *Laccotrephus griseus* (Guerin) : Thirumalai, *Rec. zool. Surv. India, Occ. Pap. No.*, **165** : 21.

**Material examined** : 4 exs., Pocharam village, 16.07.2003, S.S. Kamble & Party. 2 exs., Burugupally, 22.12.2004, Deepa & Party.

**Diagnostic characters** : A very common sluggish species, found at the bottom of slow or stagnant water. It can be identified by the presence of slightly hooked and symmetrical parameres, abdominal appendages shorter than the body, presence of an obtusely rounded tooth at the base of the anterior femora.

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

**Elsewhere** : Malaysia, Myanmar, Seychelles, Sri Lanka, Thailand.

### 4. ***Laccotrephus ruber*** (Linnaeus)

1764. *Nepa ruber*. Linnaeus. *Mus. Lud. Ulr.*, 165.

1906. *Laccotrephus ruber* (Linn.) : Distant, *Fauna British India*, **3** : 18.

1994. *Laccotrephus ruber* (Linn.) : Thirumalai, *Rec. Zool. Surv. India, Occ. paper No.*, **165** : 22.

**Material examined** : 2 exs., Burugupally, 12.4.2005 SVAC Sekhar & Party. 5 exs., Rajpet, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This is a larger species with the abdominal appendices slightly longer than the body. The male parameres are curved and hook shaped. It is a common species with wide distribution in the Indo-Australian region.

**Distribution** : India : Arunachal Pradesh, Assam, Bihar, Delhi, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Manipur, Meghalaya, Nagaland, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal.

**Elsewhere** : China, Japan, Nepal, Pakistan, Taiwan.

## Family BELOSTOMATIDAE

These insects are commonly known as "Giant water bugs" because of their large size (10-110 mm in length). The body is flat, oval or oblong, brown or dull greenish colour. Antennae 4 segmented and concealed in pockets beneath the head, eyes prominent. The Strong and thick front legs are raptorial and used for grasping. The middle and hind legs are broad, flat and fringed with swimming hair. The tarsi are 3 segmented, ocelli absent. The most characteristic feature in adult is presence of retractile strap like appendages at the abdominal apex, which are used to obtain air. These air straps are homologous with

respiratory siphon of related family Nepidae, being derived from 8th abdominal tergum, each bearing a basal spiracle. About 150 sps. of Belostomatids are so far known from the world.

Subfamily BELOSTOMATINAE

Genus ***Diplonychus*** (Laporte)

5. ***Diplonychus rusticus*** (Fabricius)

1781. *Nepa rustica* Fabricius, *Ent. Syst.*, **4** : 62.

1994. *Diplonychus rusticus* (Fab.) : Thirumalai, *Rec. zool. Surv. India, Occ. Pap. No.*, **165** : 25.

**Material examined** : 4 exs., Pocharam village, 12.04.2005, SVAC Sekhar & Party. 3 exs., Wadalaparthy, 4.11.2003, S.S. Kamble & Party. 4 exs., Pochammaralu, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species is voracious feeder on fish fry, mosquito larvae. It has single segmented fore tarsus with claw, pale lateral basal margins of pronotum and its head length is shorter than the intraocular space. Body 15-17 mm long. It is a voracious feeder and has been reported to attack fish fry and fingerlings.

**Distribution** : India : Andaman & Nicobar Island, Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Rajasthan, Tamil Nadu, West Bengal.

**Elsewhere** : Malaysia, Myanmar, China, Indonesia, Japan, New Guinea, New Zealand, Sri Lanka, Thailand.

Family CORIXIDAE

The members of this family usually called "Water Boatmen" are medium to small insects usually 2-16 mm in length. Although the family Corixidae is the largest family of aquatic Hemiptera consisting of about 500 species, distributed widely in the world from below sea level to as high as 4575 meters in Himalaya, from arctic water beneath ice to hot springs with temperature around 35°C (Thirumalai, 1989). In India it is represented only 35 species belonging to 4 genera (Thirumalai, 1994). During present investigation only one species was recorded. The body is somewhat flattened above and colour is dark grayish with yellow or black markings. The wing membrane is without veins. Head is triangular with short, unsegmented labium. Antennae short, concealed with 3-4 segments. Front tarsus-1-jointed, flattened and scoop like called "Pala" which is the characteristic of family. Scutellum is concealed and male abdominal segments are asymmetrical. A file like plate called "Strigil" is present in tergum VI of male. Abdominal terga III-IV of nymphs and adults have metathoracic scent glands opening near the 3rd coaxae. Dorsum of the abdomen with alternative dark and transverse band.

Subfamily MICRONECTINAE

Genus ***Micronecta*** (Kirkaldy)

6. ***Micronecta scutellaris scutellaris*** (Stal)

1858. *Sigra scutellaris* Stal, *Vetens akad. Forh.*, **15** : 319.

1940. *Micronecta (Basilonecta) scutellaris* (Stal, 1858) : Hutchinson, *Trans. Cnnecticut Acad. Art. Sci.*, **33** : 365.

1994. *Micronecta (Basilonecta) scutellaris* (Stal, 1858) : Thirumalai, *Rec. zool. Surv. India, Occ. Pap. No.*, **165** : 9.

**Material examined** : 2 exs., Rajpet, 22.12.2004, Deepa & Party. 4 exs., Polkampet, 12.4.2005 SVAC Sekhar & Party. 3 exs., Wadalaparthy, 4.11.2003, S.S. Kamble & Party. 4 exs., Rajpet, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species is very widely distributed in India and mostly found in stagnant pools, pond and ditches. It is the largest species (2.8 to 3.1 mm) of the genus. Pronotum grey or grayish brown, paler margins and with obscure elytral pattern.

**Distribution** : India : Andhra Pradesh, Himachal Pradesh, Bihar, Delhi, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

**Elsewhere** : Malaysia, China, Indonesia, Japan, Sri Lanka, Vietnam, Africa (Central).

Infraorder GERROMORPHA

Family GERRIDAE

These are popularly known as "Water Striders" or "Pond Skaters" They are semiaquatic long legged hemipterans. These insects are found skating or leaping about on the surface film of wetlands. When disturbed they scatter widely in all directions. They feed upon a number of microcrustaceans and insects that are caught just below water surface. The family is represented by about 450 species in the world. The body is oval shaped and covered with a velvety hydrofuge hair pile. Both winged And nonwinged forms occur but the latter are more common (Thirumalai, 1986).

Subfamily GERRINAE

Genus ***Limnogonus*** (Stal)

7. ***Limnogonus (Limnogonus) nitidus*** (Mayr)

1865. *Hydrometra nitida* Mayr, *Verh. Zool. Bot. Ges. Wein*, **15** : 443.

1994. *L. (Limnogonus) nitidus (Mayr)* : Bal & Basu, *Zool. Surv. India, State Fauna*, Series 3, *Fauna of West Bengal* : 525.

**Material examined** : 4 exs., Kottapalle, 12.4.2005, SVAC Sekhar & Party. 2 exs., Polkampet, 10.10.2004, CAN Rao & Party. 4 exs., Pochammaralu, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species can be identified from all the known species of this genus by the presence of fairly, prominent connexival spines and yellow markings at the anterior pronotal lobe. It has been recorded from temporary pools, rice fields, ponds from sea level to 1000 metres and found as winged individual.

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Chandigarh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Manipur, Meghalaya, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

**Elsewhere** : Malaysia, Myanmar, China, Indonesia, Sri Lanka, Thailand, Vietnam, Singapore.

### 8. *Limnometra fluviorum* (Fabricius)

1798. *Cimex fluviorum* Fabricius, *Ent. Syst. Suppl.*, 543.

1934. *Limnometra fluviorum* (Fab.) : *Lundblad, Arch. Hydrobiol. Suppl.*, **12** : 371.

1995. *Limnometra fluviorum* (Fab.) : Andersen, *Steenstrupia*, **21** : 118.

**Material examined** : 4 exs., Polkampet, 12.4.2005, SVAC Sekhar & Party. 3 exs., Wadalaparthy, 4-11.2003, S.S. Kamble & Party. 4 exs., Rajpet, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species can be identified from all the known species of this genus by the presence of spine like projection on the dorsolateral rear margin of the middle coxae. It is commonly found in fresh water habitats of Southern India.

**Distribution** : India : Karnataka, Kerala, Maharashtra, Pondicherry, Tamil Nadu, West Bengal.

**Elsewhere** : Philippines, Sri Lanka.

## Order COLEOPTERA

Although aquatic coleopterans commonly known as "Water beetles" are highly diverse and distributed to nearly 14 families (Pennak'1978). Only a few namely Dytiscidae and Hydrophilidae are chiefly represented in this wetland. They are minute to large (0.6 to 13 cm) in size and usually sclerotised insects. The front wings are much thickened, veinless and meeting in middorsal straight line, the hind wings are membranous with few veins and apex folded beneath when at rest sometimes absent. Mouthparts are typical biting or chewing type in usual case. Antennae 9-11 segmented. Larvae worm like' usually with 3

pairs of thoracic legs, which are 5 or 6 with 10 segments and sometimes with prominent circi. The pupae are with appendages and donot form a puparium. The water beetles show wide diversity of colour, form and life pattern.

## Family DYTISCIDAE

The members of this family have adapted perfectly well to aquatic life. All adults and larvae are aquatic. These beetles are commonly known as "Predacious diving beetles" as they feed vigorously upon almost all invertebrates and fish eggs and fry. These beetles generally occupy clean and fresh macrophytic leaves near the bottom along littoral zone. They are active swimmers and swift divers. Adult dytiscids range from 1.4 to 3.8 mm in length. The body is covered with an adherent layer of grease which holds dust particles or detritus. They are usually black or brownish colour, sometimes marked with dull yellow, orange or brown shades. The hind coxae is very large and 2nd and third legs are widely separated. Hind legs of dytiscid beetles are very important and contribute mainly to swimming movements. Antennae very long, thread like with 11 segments. Ten pairs of spiracles are present, the first two on thorax, three to nine on the abdominal segments and 10th on tip of abdomen. The spiracles open in subelytral chambers and help in oxygen supply. During submergence these beetles are utilize the oxygen f tracheae and subelytral chambers. De and Sengupta (1993) have recorded 16 species from a few wetlands of Kolkata and surrounding districts.

### Subfamily HYDROPORINAE

### Genus ***Hydrovatus*** confertus (Sharp)

### 9. ***Hydrovatus confertus*** (Sharp)

1882. *Hydrovatus confertus* Sharp, *Sci.Trans.R.Dublin Soc.*, **2** : 329.

1995a. *Hydrovatus confertus* Biswas *et al.*, Insecta : Coleoptera : Adephaga, In : *State Fauna Series. 3 : Fauna of West Bengal*, pt. 6a Zoological Survey of India, Calcutta : 94.

**Material examined** : 1 exs., Rajpet, 22.12.2004, Deepa & Party. 3 exs., Polkampet, 12.4.2005 SVAC Sekhar & Party. 2 exs., Wadalaparthy, 4.11.2003, S.S. Kamble & Party. 2 exs., Rajpet, 22.12.2004, Deepa & Party.

**Diagnostic characters** : This species inhabits shallow water with aquatic vegetation. Body broadly oval, about 2.2-2.5 mm long; head reddish-brown, head elongate, prothorax reddish brown, punctures irregular, elytra also reddish brown, puncturation somewhat regular, moderate and rather denser than on pronotum.

**Distribution** : India : Kerala, Tamil Nadu, West Bengal.

**Elsewhere** : Burma, China, Indonesia, Sri Lanka, Thailand and Vietnam.

Subfamily NOTORINAE

10. ***Canthydrus laetabilis***. (Walker)

1859. *Hydroporus laetabilis* Walker, *Ann. Mag. Nat. Hist.*, **3**(2) : 205.

1995b. *Canthydrus laetabilis* : Biswas *et. al.*, Insecta : Coleoptera : Adephaga, In : *State Fauna Series, 3 : Fauna of West Bengal*, pt. 6a *Zoological Survey of India*, Calcutta : 85.

**Material examined** : 2 exs., Polkampet, 12.4.2005, SVAC Sekhar & Party. 2 exs., Wadalaparthy, 4.11.2003, S.S. Kamble & Party.

**Diagnostic characters** : Body oblong-oval, head brownish yellow, eyes large, antennae brownish yellow, short and slender, prothorax with its front margin darker and with dark punctures, elytra streamlined, brownish black with two basal orange yellow spots and one transverse irregular spot situated post medially, legs with front tibiae short and its apical spur curved, hind tarsi with swimming hairs, claws simple.

**Distribution** : India : Kerala, West Bengal, Andhra Pradesh, Assam, Bihar, Orissa, Punjab, Rajasthan, Uttar Pradesh.

**Elsewhere** : Philippines, Sri Lanka.

Family HYDROPHILIDAE

The hydrophilids commonly termed as "water scavenger beetles" are characterized by their short-clubbed antennae that generally remain characterized by their short-clubbed antennae that generally remain concealed beneath the head and long maxillary palps resembling antennae like Dystiscidae, they also make contact with surface water film with the anterior edge of their body but unlike former, their hind legs move alternatively while swimming and are not very good swimmers. Adults are good fliers and some leave the water and crawl on land. The air supply is through tracheal system and spiracles from subelytral chamber and from silvery film of air retained on ventral side of the body by hydrofuge hairs. For the renewal of oxygen supply, the beetles come to the surface with body slightly inclined to one side so as to keep the cleft between head and thorax in contact with surface film. The surface film is broken by antennal tip. They feed mainly on detritus, algae and decaying vegetative matter.

Subfamily HYDROPHILINAE

11. ***Hydrophilus rufocinctus*** (Bedel)

1892. *Hydrophilus rufocinctus* d'Bedel, Rev. *Ent. Caen.*, **10** : 309.

1993. *Hydrophilus rufocinctus* : Biswas and Mukhopadhyay *State Fauna Series, 3 : Fauna of West Bengal*, pt. **6a** : 158.

**Material** : 1 ex., Kottapalle, 12.4.2005, SVAC Sekhar & Party. 2 exs., Polkampet, 10.10.2004, CAN Rao & Party. 2 exs., Pochammaralu, 22.12.2004, Deepa & Party.

**Diagnostic characters** : Body elongate, blackish brown, convex normally. Antennae 9-segmented, prothorax transverse, tarsi strongly compressed and oar like. Claws of all tarsi dentate at base.

**Distribution** : India : Maharashtra, West Bengal.

**Elsewhere** : Sri Lanka.

## SUMMARY

The aquatic and semi aquatic groups of insects are overall indicators of both recent and long term environmental conditions (Thirumalai & Raghunathan, 1988; Ramakrishna, 2000). The study reports the presence of 11 species belonging to 6 families and 8 genera, which forms the first report of this group from Pocharam lake, Medak Dist. A.P.

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*Zool. Surv. India*

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# CRUSTACEA : DECAPODA : PALAEMONIDAE AND GECARCINUCIDAE

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Despite prawns and crabs of marine ecosystems of Andhra Pradesh are rich in diversity (Dev Roy and Bhadra, 2005; Chanda and Roy, 2005), very little information is available on these groups from the freshwater ecosystems of this state barring publications by Radhakrishna (1989) and Ghosh *et al.,* 2005). The present work is, therefore, an attempt to fill up this gap. In this communication, an inventory of prawns and crabs of Pocharam Lake, a man-made reservoir of Andhra Pradesh has been made based on collections received from Freshwater Biological Station, Zoological Survey of India, Hyderabad during the period from 2004-2005. A total of 186 examples of these crustaceans have been examined. This consists of four species of prawn and one species of crab under two families and two genera including two new records of prawns from the state. Brief diagnosis of each species and a key to the species of prawns occurring in this area has been given to facilitate identification. All materials reported herein are at present kept in Crustacea Section, Zoological Survey of India, Kolkata but Will be deposited in Freshwater Biological Station, Zoological Survey of India, Hyderabad in due course of time.

## Systematic List of Prawns and crabs of Pocharam Lake

Phylum and Subphylum Crustacea Pennant, 1977

Class MALACOSTRACA Latreille, 1806

Subclass EUMALACOSTRACA Groben, 1892

Order DECAPOD A Latreille, 1803

Suborder PLEOCYEMA T A Burkenroad, 1963

Infraorder CARIDEA Dana, 1852

Superfamily PALAEMONOIDEA Rafinesque, 1815

Family PALAEMONIDAE Rafinesque, 1815

1. *Macrobrachium banjare* (Tiwari, 1958)
2. *Macrobrachium dayanum* (Henderson, 1893)
3. *Macrobrachium lamarrei* (H. Milne Edwards, 1837)
4. *Macrobrachium malcomsonii* (H. Milne Edwards, 1844)

Infraorder BRACHUYRA Latreille, 1803

Section BRACHYRHYNCHA Borradaile, 1900

Superfamily GECARCINUCOIDEA Rathbun, 1904

Family GECARCINUCIDAE Rathbun, 1904

5. *Barytelphusa (Barytelphusa) cunicularis* (Westwood, 1836)

## Systematic Account

Family PALAEMONIDAE

Key to species of the genus *Macrobrachium*

1. Upper margin of rostrum with a distinct gap in between proximal and distal series of teeth ..... 2

   Upper margin of rostrum without distinct gap in between proximal and distal series of teeth 3 ..... 3

2. Basal crest not much elevated, palm of second pereiopod not swollen; fingers shorter than palm ..... *M. amarrei*

   Basal crest distinctly elevated, palm of second pereiopod swollen, fingers longer than palm ..... *M. ma/comsonii*

3. Palm of second pereiopod longer than carpus, cutting edge of both fingers with two denticles ..... *M. banjare*

   Palm of second pereiopod shorter than carpus, cutting edge of fixed finger with one tooth and mobile finger with two teeth ..... *M. dayanum*

### ***Macrobrachium banjare*** (Tiwari, 1958)

1958. *Palaemon banjare* Tiwari, *Rec. Indian Mus.*, **53** : 299.

1988. *Macrobrachium banjare*, Jalihal, Shenoy and Sankolli, *Rec. zool. Surv India*, Occ. Paper No. **112** : 36, figs. 10 a-I and 11 j-s.

**Material examined** : 1 ex., Pocharam (V), Pocharam Lake, 04.11.2003, S.S. Kumble; 1 ex. Pochammalaru, Pocharam Lake, 16.07.2003, S.S. Kumble; 41 exs., Kottarpalle,

Pocharam Lake, 28.03.2004, S.A. Chandrasekhar; 1 ex., Rajpet, Pocharam Lake, 05.11.2003, S.S. Kumble.

**Diagnosis** : Rostrum equal to antennal scale, upper edge convex with completely arranged teeth and pointed apex. Rostral formula : 8-13 with two post-orbital teeth, teeth on upper edge equal and 4-6 equidistant. Second pair of paraeopod longer than first pair, slender and equal in both sides in both sexes, chela subequal in male but unequal in female; carpus longer than merus and thickened distally, it is longer in male, subequal in female; fingers about three-fifths as long as palm with a few hairs at tips, cutting edges of both fingers with two teeth. Third to fifth pereiopods more or less similar and extended up to tip of antenna! scale. Appendix masculina of males short and hairy. T elson elongated. Exopod of uropod with a distinct movable accessory subapical spine.

**Distribution** : India : Andhra Pradesh, Madhya Pradesh; Karnataka.

**Remarks** : This is the first record of *M. banjarae* from Andhra Pradesh. It appears to be a common species in this lake. In this species, females are larger than males in shape and size.

### *Macrobrachium dayanum* (Henderson, 1893)

1893. *Palaemon dayanus*, Henderson, *Trans. Linn. Soc. Lond.* Zool., (2), **5** : 443, pl. 40, figs. 7-13.

1950. *Macrobrachium dayanum*, Holthuis, *Siboga-Expedite Monogr.*, Leiden, **39a**(9) : 197.

2000. *Macrobrachium dayanum*, Ghosh and Roy, *Zool. Surv. India, State Fauna Series*, 7 : *Fauna of Tripura* (part 4) : 270.

2001. *Macrobrachium dayanum*, Banik and Chakraborty, *J. Bombay not. Hist. Soc.*, **98**(3) : 482.

**Material examined** : 1 ex., Burugupalle, Pocharam Lake, 10.10.2004, Dr. C.A.N. Rao.

**Diagnosis** : Rostrum straight, distinctly upturned at its distal end and extended up to tip of antenna! scale. Upper and lower edges of rostrwn bearing 7 and 6 teeth respectively. First peraeopod equal and slender. Second peraeopod stout and subequal; carpus longer than merus and thickened distally. Chela longer than carpus, palm slightly shorter than carpus, fingers shorter than palm and densely pubescent; both mobile and immobile fingers armed with two and one large conical teeth respectively, their cutting edges sharp and smooth.

**Distribution** : India - Andhra Pradesh (present record); Assam; Meghalaya; Tripura; West Bengal; Orissa; Jharkhand; Bihar; Uttar Pradesh; Uttaranchal; Madhya Pradesh; Punjab; Kerala.

**Elsewhere** : Pakistan.

**Remarks** : This species is reported for the first time from Andhra Pradesh.

### ***Macrobrachium lamarrei*** (H. Milne Edwards, 1837)

1837. *Palaemon lamarrei* H. Milne Edwards, *Hist. Nat. Cnist.*, **2** : 397.

1950. *Macrobrachium lamarrei, Siboga Expedite-Monogr.*, Leiden, **39a**(9) : 119.

1988. *Macrobrachium lamarrei*, Jalihal, Shenoy and Sankolli, *Rec. zool. Surv. India, Occ. Paper No.* **112** : 2.

2000. *Macrobrachium /amarrei*, Ghosh and Roy, *Rec. zool. Surv India, State Fauna Series* 7 : *Fauna of Tripura* (part 4) : 268.

**Material examined** : 2 exs., Burugupalle, Pocharam Lake, 21.07.2004, S.A. Chandrasekhar; 3 exs., Pocharam (V), Pocharam Lake, 04.11.2003, S.S. Kumble; 41 exs., Kottapalle, Pocharam Lake, 10.10.2004, Dr. C.A.N. Rao; 78 exs., Wedelparty, Pocharam Lake, 28.03.2004, S.A. Chandrasekhar; 10 exs., Palkampet, 22.07.2004, S.A. Chandrasekhar; 2 exs., Pocharam (V), Pocharam Lake, 04.11.2003, S.S. Kumble.

**Diagnosis** : Rostrum equal to or slightly longer than antennal scale and slightly upturned distally. Rostral formula

$$\frac{6-9+0-2+1}{4-8}$$

with 1 or 2 post-orbital teeth. Upper margin with a gap between proximal portion of 6-9 teeth and distal portion of 1 subapical tooth; this gap often filled by 1 or 2 teeth. Carpus of second peraeopod longer than merus; palm not swollen, fingers shorter than palm. A non-hairy appendix masculina present in the second pleopod of male.

**Distribution** : India - Andhra Pradesh; Assam; Arunachal Pradesh; Manipur; Tripura; West Bengal; Bihar; Jharkhand; Orissa; Chhatishgarh; Punjab; Tamil Nadu; Maharashtra; Kerala.

**Elsewhere** : Pakistan, Nepal and Bangladesh.

**Remarks** : This is one of the oldest known and widely distributed species of the genus *Macrobrachium* of our COUDtiy. This is a very common prawn species of this lake.

### ***Macrobrachium malcomsonii*** (H. Milne Edwards, 1844)

1844. *Palaemon malcomsonii* H. Milne Edwards, *Voy. Inde Jacquemont*, **4** : 8, pl. 21, atlas 2.

1950. *Macrobrachium malcomsonii*, Holthuis, *Siboga-Expedit Monogr.*, Leiden, 1 **39a**(9) : 121.

2005. *Macrobrachium malcomsonii*, Ghosh, Ghatak and Roy, *Zool. Surv. India, State Fauna Series* 5 : *Fauna of Andhra Pradesh* (part 5) : 554.

**Material examined** : 2 exs., Pocharam (V), Pocharam Lake, 22.07.2004, S.A. Chandrasekhar; 1 ex., Wadalaparthy, Pocharam Lake, 21.07.2004, S.A. Chandrasekhar.

**Diagnosis** : Rostrum longer, reaching to or beyond apex of antennal scale. Rostral formula $\frac{9-10+1-2}{5-7}$ ( i.e., $\frac{10-13}{5-7}$ )

with 3 post-orbital teeth. Proximal margin of upper border markedly convex with 9-11 large teeth, apex a little upturned with 1 or 2 subapical teeth. Dactylus of second peraeopod densely covered with hairs in both sexes; carpus longer than and fingers shorter than palm; movable finger somewhat less pubescent in male.

**Distribution** : India - Andhra Pradesh; Gujarat; Kerala; Orissa; Maharashtra; Tamil Nadu.

**Elsewhere** : Bangladesh; Myanmar, New Guinea, Celebes and New Britain.

**Remarks** : This is one of the commonest freshwater prawn of India. It migrates into brackish water during breeding season. It supports fairly good fishery in N. E. coast during monsoon months.

Family GECARCINUCIDAE

***Barttelphusa (Barytelphusa) cunicularis*** (Westwood, 1836)

1836. *Thelphusa cunicularis* Westwood, In: Sykes and Westwood, *Trans. Entomol. Soc. London*, **1** : 183, pl. 19, figs. 1-6.

1869. *Thelphusa indica*, A. Milne Edwards, *Nouv. Arch. Mus. Hist. nat.*, Paris, **5** : 184.

1898. *Potamon (potamonantes) indicus*, de Man, *Ann. Civ. Stor. Nat. Genova*, (2), **19** : 423.

1910. *Potamon (Barytelphusa) jacquemontii*, Alcock, *Brachyura. The Indian Freshwater Crabs-Potamonidae. Catalogue of the Indian Decapod Crustacea in the collection of the Indian Museum. Calcutta.* **1**(2) : 79, pl. 12, fig. 55.

1970. *Barytelphusa (Barttelphusa) cunicularis*, Bott, *Abh. Senckenb. Naturforsch. Ges.*, Frankfurt, **526** : 31, pl. 2, figs. 18-20 and pl. 26, fig. 13.

2005. *Barytelphusa (Barttelphusa) cunicularis*, Ghosh, Ghatak and Roy, *Zool. Surv. India State Fauna Series*, 5 : *Fauna of Andhra Pradesh* (part 5) : 556.

**Material examined** : 1 ex., Pocharam (V), Pocharam Lake, 07.01.2004, Srinivaslu; 1 ex., Pocharam Lake, 10.10.2004, Dr. C.A.N. Rao.

**Diagnosis** : Carapace distinctly broader than long, convex, surface smooth, regions not areolated cervical groove bold, deep and broadly V-shaped. Post-orbital crests not distinctly separated from the lateral epibranchial tooth. Front broad, deflexed and

bilobed. Lateral epibranchial tooth extremely small. Merus of external maxillipeds quadrangular, anterior margin less oblique. Chelipeds massive, unequal; dactylus longer than palm, fixed finger of larger cheliped armed with a strong molariform tooth proximally at its base.

**Distribution** : Fudia-Andhra Pradesh; Jharkhand; Karnataka; Kerala; Maharashtra; Madhya Pradesh; Tamil Nadu; Uttaranchal; West Bengal.

**Remarks** : This is a very common gecarcinucid crab of fudia. It is not yet known to occur outside fudia.

## Summary

The present study is based on collections from Pocharam Lake, a man-made reservoir of Andhra Pradesh. A total of 186 specimens belonging to 4 species of prawns and a single species of crab have been encountered for the first time from this lake. This includes two new records of prawns namely, *Macrobrachium banjare* and *M. dayanum* from this state.

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# MOLLUSCA : POCHARAM LAKE

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## INTRODUCTION

Mollusca a diversified group of animals in their size, shape, habits and habitats occupied the second in position in the animal kingdom in number of species. As per conservative estimation, 66,535 species in the world of which 5,070 species are recorded from India (Subba Rao, 1998). They are distributed in all the habitats from the deeper waters in the sea to high altitudes such as Himalayas. Of seven classes under the group in the world only, five are reported from India. (The group is originated in the marine habitat) of these, the classes gastropoda and bivalvia inhibited into freshwater and the former one is successfully occupied the terrestrial habitat.

Freshwater molluscs play very important role in the aquatic ecosystems. They serve as food for many aquatic birds, fishes, *etc.,* and some of them even serve as food for human. They also play very important role as 'vectors' in spreading diseases to the live stock as well as to man by serving as intermediate host to several helminth parasites, especially trematodes. In addition they are used in small scale industries such as in manufacture of poultry food, lime, and shell craft. Some of them produce pearls such as *Lamellidens marginalis.*

To update our knowledge on the molluscan resources from the freshwater ecosystems, several studies are being made from different lakes, ponds, river systems, *etc,* and Pocharam lake is one of the area has been taken for the present study. Our knowledge on freshwater molluscs of India is known from several workers, which is in scattered literature. The most important consolidated one is "Fauna of British India" by Preston (1915) and the most recent work by Subba Rao (1989) as, "Hand book on freshwater molluscs of India" In addition, recent publications under "State fauna series, and Fauna of wetland ecosystems are being published by the scientists of Zoological Survey of India.

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Studies on the faunal resources from wetland ecosystems from Chilka by Subba Rao *et. al* (1995); Renuka, Ujani, Kabar by Surya Rao *et. al* (2000, 2002a, 2002b) and Asan by Mitra *et. al.* (2003) are known so far.

**Pocharam Lake**

Pocharam Lake is a man made reservoir constructed by a dam in 1922 by Nizam of Hyderabad, on the river Alair, a tributary to the river 'Manjira' in the Godavari basin in the districts of Medak and Nizamabad (Lat. 18°-07'-08"N; long. 78°-11'-00"N) in Andhra Pradesh. The catchment area of the reservoir is about 621 sq. miles with water capacity of 51,543 M cum/1,820 tmc. The water body is of irregular shape, surrounded by small hilly terrains and plain lands. Reservoir is shallow, a depth of 1-3 ft. on peripheral area and maximum depth of 15 ft. at the central point and it varies depending on the rainfall. The water body is having submerged vegetation throughout and floating vegetation such as Water Hyacinth, Nymphia, *etc.* The lake is of good fishery reservoir in the districts of Andhra Pradesh and a fisherman society has been established for exploiting the fishery resources of both wild and cultured.

**Abbreviations used**

| | | | | | |
|---|---|---|---|---|---|
| C. | – | Collector | L.A. | – | Length of aperture |
| D. | – | Diameter | L.S. | – | Length of spire |
| e./exs. | – | Example, Examples | mm. | – | Millimeters |
| f. | – | form | S.str. | – | Sensu strict |
| Ht. | – | Height | T. | – | Thickness |
| L. | – | Length | Vill. | – | Village |
| Loc. | – | Locality | | | |

## MATERIAL & METHODS

Molluscs were collected by using hand nets and sieves in the peripheral area and by hand picking from the dry bed of the lake, during the period from 2003-2005. Physical parameters were also studied by others. The classification followed here is by Vaught (1989).

## LIST OF SPECIES STUDIED

| | |
|---|---|
| Phylum | MOLLUSCA |
| Class | GASTROPODA |
| Subclass | PROSOBRANCHIA |
| Order | MESOGASTROPODA |

1. Family VIVIPARIDAE
   Subfamily BELLAMYINAE
   Genus 1. ***Bellamya*** Jousseaume, 1886

1. *Bellamya bengalensis* f. *typica* (Lamarck, 1822)
   *Bellamya bengalensis* f. *annandalei* (Kobelt, 1909)
   *Bellamya bengalensis* f. *doliaris* (Gould, 1843)
   *Bellamya bengalensis* f. *eburnea* (Annadale, 1921)
2. *Bellamya dissimilis* f. (Mueller, 1774)

2. Family BITHYNIIDAE
   Subfamily BITHYNIINAE
   Genus 2. ***Bithynia*** Leach, 1818
   Subgenus ***Digoniostoma*** Annandale, 1920

3. *Bithynia (Digoniostoma) cerameopoma* (Benson, 1830)
4. *Bithynia (Digoniostoma) pulchella* (Benson, 1836)

3. Family THIARIDAE
   Subfamily THIARINAE
   Genus 3. ***Tarebia*** H & A. Adams, 1854.

5. *Tarebia lineata* (Gray, 1828)

   Subclass PULMONATA
   Order BASOMMATOPHORA

4. Family LYMNAEIDAE
   Genus 4. ***Lymnaea*** Lammerela, 1799
   Subgenus ***Pseudosuccinea*** Baker, 1908

6. *Lymnea (Pseudosuccinea) acuminata* f. *typica* Lamarck, 1822
7. *Lymnea (Pseudosuccinea) luteola* f. *australis* Annandale & Rao, 1925

   Family BULLINIDAE
   Subfamily BULLININAE
   Genus ***Indoplanorbis*** Annandale & Prashad, 1920

8. *Indoplanorbis exustus* (Deshayes, 1834)

6. Family PLANORBIDAE

Subfamily PLANORBINAE

Genus 6. ***Gyraulus*** Charpentier, 1837

9. *Gyraulus convexiusculus* (Hutton, 1849)

10. *Gyraulus labiatus* (Benson, 1850)

Class BIVALVIA

Order UNIONOIDA

7. Family UNIONIDAE

Genus 7. ***Lamellidens*** Simpson, 1900

11. *Lamellidens corrianus* (Lea, 1834)

12. *Lamellidens marginalis* (Lamarck, 1819)

8. Family AMBLEMIDAE

Subfamily PARREYSIINAE

Genus 8. ***Parreysia*** Conrad, 1853

Subgenus ***Parreysia*** s.str.

13. *Parreysia (Parreysia) corrugata nagpoorensis* (Lea, 1859)

14. *Parreysia (Parreysia) favidens* (Benson, 1862)

Order VENEROIDA

9. Family CORBICULIDAE

Genus 9. ***Corbicula*** Megarle Von Muehs l feld, 1811

15. *Corbicula striatella* Deshayes, 1854

## SYSTEMATIC ACCOUNT

### Key to the families

1. Animal with univalve shell ..... 2

— Animal with two valve shell attached with hinge ..... 7

2. Shell with operculum ..... 3

— Shell without operculum ..... 5

3. Operculum with concentric growth lines; shell not elongate turreted, usually smooth ..... 4

— Operculum with spiral growth lines; shell turreted, sculptured ..... Thiaridae
(Genus *Tarebia*)

4. Shell large, more than 10 mm in height; pyramidal, whorls increase in size, with or without bands; operculum horny ..... Viviparida
(Genus *Bellamya*)

— Shell small, less than 10 mm in height; conical; body whorls large; operculum calcareous ..... Bithyniinidae
(Genus *Bithynia*)

5. Shell elongate, dextrally coiled, columellar axis twisted; spine elevated, pointed ..... Lymnaeidae
(Genus *Lymnaea*)

— Shell discoidal, sinistrally coiled; columellar axis not twisted; spire depressed ..... 6

6. Shell small, less than 10 mm in diameter; thin semitransparent; aperture oblique, lip simple; whorl equal in size ..... Planorbidae
(Genus *Gyraulus*)

— Shell large, more than 10 mm in diameter; thick, aperture wide ear shape ..... Bullinidae
(Genus *Indoplanorbis*)

7. Shell elongately elliptical; umbo sculptured with ridges; interior nacreous; outer surface smooth, covered with thick dark periostracum ..... 8

— Shell triangularly ovate; umbo smooth; interior not nacreous, outer surface sculptured with concentric ridges, covered with thin periostracum - Corbiculidae
(Genus *Corbicula*)

8. Shell subrhomboidal, umbonal area sculptured with zic zac ridges with corrugate appearance; all four gills marsupials - Amblemidae
(Genus *Parreysia*)

— Shell broadly elongate, umbonal area with concentric ridges, but rudimentary; outer two gills marsupials - Unionidae
(Genus *Lamellidens*)

## Family VIVIPARIDAE

The family is represented by the genus *Bellamya* with two species are reported here.

### Genus : ***Bellamya*** Jousseaume, 1886

1886. *Bellamya* Jousseaume, *Bull. Soc. Zool. France* II : 478.

**Remarks** : The genus is represented by 5 species in Indian waters, of which two are studied from the lake. Most commonly distributed in Indian waters.

### ***Bellamya bengalensis*** (Lamarck, 1822)

1822. *Bellamya bengalensis* Lamarck, *Hist. Anim. Sans Vert.* **6**(2) : 174.

**Remarks** : Shell more or less thin, with bands, smooth, narrowly perforate, spire acuminate, aperture subcircular, its margin black. Annandale (1921 a, b) recognized 11 forms based on the shell structure, where as Subba Rao (1989) recognized 8 forms only.

### Form ***Typica*** (Lamarck)

2005. *Bellamya bengalensis f. typica,* Fauna of Andhra Pradesh, State Fauna Series 5, Mitra, Dey and Ramakrishna (5) *Zool. Surv. India* : 188.

**Material studied** : 1 ex. Loc. Pocharam vill., 16.7.2003, coll. C.A.N & Party; 6 exs. Loc. Wadalparti, 4.11.2003, coll. S.S. Kamble & Party; 1 ex. Pochammaralu, 4.11.2003, coll. S.S. Kamble & Party; 1 ex. Loc. Pocharam vill. 23.3.2004, coll. S.V.A.C. Sekhar; 14 exs. Loc. Burugupalli, 22.7.2004, coll. SVAC Sekhar & Party; 15 exs. Pocharam vill. 9.10.2004, coll. CAN Rao; 2 exs. Loc. Wadalparti, 9.10.2004, coll. C.A.N Rao; 25 exs. Pochammaralu, 7.1.2005, coll. Sekhar & Party.

**Distribution** : Common throughout India.

**Elsewhere** : Bangladesh, Myanmar & Sri Lanka.

**Remarks** : An edible species, eaten by the local people in the Eastern and North east parts of India, usually sold in the markets especially in West Bengal and Bihar.

### ***Bellamya bengalensis f. annandalei*** (Kobelt)

1909. *Vivipara annandalei* Kobelt, *Nachr. Malak,* Ges., **60** : 101.

2004. *Bellamya bengalensis* f. annandalei : Surya Rao *et. al.* Fauna of Kabar Lake. Wetland Ecosystem Series. *Zool. Surv. India.* **4** : 58.

2005. *Bellamya bengalensis* f. *annandalei* : Mitra *et. al. Fauna of Andhra Pradesh. State Fauna Series* 5(5) *Zool. Surv. India* : 188.

**Material studied** : 29 ex. Loc. Pochammaralu, 22.7.2004. Coll. Sekhar & Party; 10 exs. Loc. Pocharam village, 9.10.2004; 6 exs. Loc. Wadalparty, 9.10.2004, Coll. C.A.N. Rao & Party.

**Distribution** : India : Andhra Pradesh, Bihar, Orissa, Tamil Nadu, Manipur, West Bengal.

**Remarks** : It's type locality is Visakhapatnam in Andhra Pradesh. Shells are very thin, semitransparent, smaller than the typical form. Occurs in foul water pools used for domestic purpose (Annandale, 1921).

### ***Bellamya bengalensis f. doliaris*** (Gould)

1843. *Paludina doliaris* Kobelt, *Proc. Boston Soc. nat. Hist* : 144.

2005. *Bellamya bengalensis* f. *doliaris* : Mitra *et. al. Fauna of Andhra Pradesh, State Fauna Series* 5(5) *Zool. Surv. India* : 189.

**Material studied** : 5 exs. Loc. Pocharam Vill. 16.7.2003, Coll. SVAC Sekhar & Party; 5 exs. Pocharam village, 9.10.2004. Coll. C.A.N. Rao & Party.

**Distribution** : India : Andhra Pradesh, Bihar, Orissa, Maharashtra, Manipur, West Bengal.

**Elsewhere** : Myanmar.

**Remarks** : It can be recognized by its biangulate body whorl, shells smaller in size, more conical than f. *annandalei*. Eastern forms like *napalensis*, *balteata* and *doliaris* intergrade into each other (Subba Rao, 1989). It is recorded earlier from two districts of Rayalseema region and present record indicated its extention of its distribution to Telangana region.

### ***Bellamya bengalensis f. eburnea*** (Annandale)

1921. *Vivipara bengalensis* race *eburnea* Annandale, *Rec. Indian Mus.*, **22** : 274, pl. II. Figs. 1-2.

2005. *Bellamya bengalensis* f. *eburnea* : Mitra, Dey and Ramakrishna, *Fauna of Andhra Pradesh. State Fauna Series,* 5(5) *Zool. Surv. India* : 191.

**Material studied** : 6 exs. Loc. Kottapalle, 17.7.2003. Coll. Kamble & Party; 7 exs. Loc. Burugupalli, 17.7.2003, Coll. Sekhar & Party; 2 exs. Loc. Rajpet, 17.7.2003, Coll. Sekhar & Party; 1 ex. Pochammaralu, 10.10.2004, Coll. C.A.N. Rao & Party; 5 exs. Pochammaralu, 7.1.2005, Coll. Sekhar & Party.

**Distribution** : India : Andhra Pradesh, Madhya Pradesh, Orissa, Tamil Nadu, Manipur, West. Common throughout in Peninsular India.

**Remarks** : Shell narrow, aperture smaller, slightly flattened at lower part of body. Usually inhabits in large reservoirs (Annandale, 1921).

### ***Bellamya dissimilis*** (Mueller)

1774. *Nerita dissimilis* Mueller, *Hist. Verm.* Test. Pt. **2** : 184.

2005. *Bellamya dissimilis* Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh. State Fauna Series,* 5(5) *Zool. Surv. India* : 190.

**Material studied** : 6 exs. Loc. Pochammaralu, 4.11.2003, Coll. Kamble & Party; 16 exs. Pocharam Vill., 23.3.2004. Coll. Sekhar & Party; 1 ex. Loc. Rajpet, Coll. SVAC; 2 exs. Pochammaralu, 16.7.2003, Coll. Sekhar & Party.

**Distribution** : India : Common. In Andhra Pradesh in all the three regions.

**Elsewhere** : Bangladesh, Myanmar, Malaysia, Pakistan, Sri Lanka.

**Remarks** : This species can be distinguished from the other species in shell without bands, green in colour, broadly ovate, body whorl angulate at its lower part, and a pale band, apertural margin often black, operculum thick, well developed muscular sear.

## Family BITHYNIIDAE

The family includes 5 genera and 11 species, in Indian subcontinent (Subba Rao 1989). They are usually inhabits the ponds, found attached to the submerged vegetation, occurs in slow moving canals with muddy substratum. In Andhra Pradesh, 3 genera with 6 species are reported by Mitra *et. al* (2005). The present study includes only two species under the genus *Bithynia.*

### Genus : ***Bithynia*** Leach, 1818

1818. *Bithynia* Leach, in Abel's *Narrative of Journey into interior of China* : 362.

**Remarks** : Shell smaller in size, smooth either perforate or imperforate, ovate or fusiform with calcareous operculum. The species as studied here are treated under the genus, *Digoniostoma,* by earlier authors, but presently treated as per subgenus under the genus *Bithynia* per Vaught (1989).

### Sub genus : ***Digoniostoma*** Annandale 1920

1920. *Digoniostoma* Annandale, *Indian J. Med. Res.,* 7 : 104.

**Remarks** : Shell elongately thin, ovate, body whorl large, operculum calcareous out of 3 species reported from India, two are studied here.

### ***Bithynia (Digoniostoma) cerameopoma*** (Benson)

1830. *Paludina cerameopoma* Benson, *Gleanings in Science Calcutta,* **2** : 125.

1989. *Digoniostoma cerameopoma* : Suba Rao, *Hand Book : Freshwater Molluscs of India* : 79, fig. 121.

2005. *Bithynia (Digoniostoma) cerameopoma* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh. State Fauna Series,* 5(5) *Zool. Surv. India* : 192.

**Material studied** : 1 ex. Loc. Pochammaralu, 4.11.2003, Coll. Kamble & Party; 7 exs. Loc. Burugupalli, 3 exs. Loc. Pocharam, 4 exs. Rajpet, dt. 22.12.2005, Coll. C.A.N. Rao.

**Distribution** : India : Andhra Pradesh, Assam, Bihar, Orissa, Rajasthan, Madhya Pradesh, Punjab, West Bengal.

**Elsewhere** : Pakistan.

**Remarks** : Shell ovate, whorl rapidly increase in size, umbilicus deep with oblique channel, outer lip reflected. Specimen in hand empty without operculum. Mitra *et. al* (2005) recorded two species from the Andhra Pradesh, both the species are found in Pocharam Lake. Though the material in hand is single specimen, there are chances of getting more if intensive collections are made by the experts.

### ***Bithynia (Digoniostoma) pulchella*** (Benson)

1836. *Paludina pulchella* Benson, *J. Asiat. Soc. Beng.*, 5 : 125.

2005. *Bithynia (Digoniostoma) pulchella* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh. State Fauna Series,* 5(5) *Zool. Surv. India* : 193.

**Material studied** : 9 exs. Rajpet, 22.12.2005. Coll. C.A.N. Rao & Party.

**Measurements (mm)** : L : 6.00 W : 4.00 LS : 1.00 ; LA : 4.00 WA : 3.00.

**Distribution** : India : common throughout.

**Elsewhere** : Myanmar, Pakistan, Malay Archipelago.

**Remarks** : This species differs from the former inhaving its body whorl shorter than spire; umbilicus not deep, without oblique channel, aperture oval.

## Family THIARIDAE

## Subfamily THIARINAE

### Genus ***Tarebia*** H. & A. Adams

1854. *Tarebia* H. & A. Adams, *Genera Recent Moll.* 1 : 304.

**Remarks** : The genus was treated under *Thiara* as subgenus by earlier workers. But in recent works it is elevated to genus level (Vaught, 1989). Shells are granulose or tessellated nodules, whorls rounded, gradually increase in size. Two species, *granifera* and *lineata* are reported from Andhra Pradesh by Mitra *et al.* (2005).

### ***Tarebia lineata*** (Gray, 1828)

1828. *Helix lineata* Gray in Wood's *Index Test. Suppl.* **24**, fig. 68.

1989. *Thiara (Tarebia) lineata* : Subba Rao, Hand Book : *Freshwater Molluscs of India* : 101, fig. 191.

2005. *Tarebia lineata* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 200.

**Material studied** : 1 ex. Loc. Pochammaralu, 22-7-2004, Coll. Sekhar & Party.

**Distribution** : India : Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh, West Bengal.

**Elsewhere** : Bhutan, Myanmar, Sri Lanka.

**Remarks** : This species is closely resembles *granifera* and often confused with it, can be differentiated by its shell thinner, with acute spire, sculptured with spiral lines, absence of nodules as in former species.

Subba Rao and Mitra (1982) studied its ecological aspects such as brood pouch count, population, growth rate.

Subclass PULMONATA

Order BASSOMATOPHORA

Family LYMNAEIDAE

Genus ***Lymnaea*** Lamarck, 1799

1799. *Lymnaea* Lamarck, *Prodr. Nouv. Clas. Coq,* : 75.

Shell thin, spire elevated, acute; body whorl large, columella spirally twisted. Annandale and Rao (1925) recognized 25 spp. and many varieties, where as Subba Rao (1989) treated 17 spp. provisionally. Further studies are necessary to know the validity of the species.

Subgenus ***Pseudosuccinea*** Baker, 1908

Two species are represented in the lake, are studied here. *viz. acuminata* and *luteola.* As the material in hand is not in good condition, details up to form level is not given.

### ***Lymnea (Pseudosuccinea) acuminata*** Lamarck

1799. *Limnaea acuminata* Lamarck, *Hist. Anim. Sans Vert.* **6**(2) : 160.

2005. *Lymnaea (Pseudosuccinea) acuminata* f. *typica* : Mitra, Dey and Ramakrishna *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 203.

**Material studied** : 1 ex. Loc. Wadalparti, 4.11.2003. Coll. C.A.N. Rao & Party. (Damaged).

**Distribution** : Throughout India. Very common.

**Elsewhere** : Bangladesh, Myanmar, Pakistan.

**Remarks** : Shell thin, fragile having distinct characters of the species. For further details more collections are to be made for study. This species is served as an intermediate host for larval forms of flukes causing diseases to live stock.

### ***Lymnea (Pseudosuccinea) luteola* f. *australis*** Annandale and Rao

1925. *Lymnaea (Pseudosuccinea) luteola* f. *australis* Annandale and Rao, *Rec. Indian Mus.,* **27** : 184, fig. V, 3.

1989. *Lymnaea (Pseudosuccinea) luteola f. australis* : Subba Rao, *Hand Book : Freshwater Molluscs of India* : 129, fig. 279.

2005. *Lymnaea (Pseudosuccinea) luteola* f. *australis* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 205.

**Material studied** : 7 exs. Loc. Pocharam, 22-12-2005, Coll. C.A.N. Rao.

**Distribution** : India : Common throughout. In Andhra Pradesh reported from the districts of Chittoor, Kurnool and Medak.

**Elsewhere** : Bangladesh, Myanmar, Pakistan, Sri Lanka.

**Remarks** : This species can be distinguished from former species in shell having outer lip narrowly expanded almost straight, spire also less acuminate. This species can thrive in temporary water bodies during summer and burying itself in mud, and considered as pest of paddy and Azola (Subba Rao, 1982). In Andhra Pradesh, 3 forms are reported by Mitra *et. al.* (2005).

## Family BULLINIDAE

### Genus ***Indoplanorbis*** Annandale and Rao

1921. *Indoplanorbis* Annandale and Rao. *Rec. Indian. Mus.,* **22**(4) : 578.

**Remarks** : The genus *Indoplanorbis* was treated under the family Planorbidae, under subfamily: Bullinae by the earlier workers. The subfamily Bullininae has been elevated to the family (see Vaught, 1989), which included two genera, *Comptoceras* and *Indoplanobis* in India.

### ***Indoplanorbis exustus*** (Deshayes)

1834. *Planorbis exustus* Deshayes, in Belanger, *Voy Ind-Orientales* : 417, pl.1, figs.11-13.

2005. *Indoplanorbis exustus* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 208.

**Material studied** : 4 exs. Wadalparti, 4.11.2003, Coll. C.A.N. Rao & Party; 1 ex. Pochammaralu, 4.11.2003; 1 ex. Wadalparti, 4.11.2003, Coll. Kamble & Party; 6 exs. Loc. Pocharam vill. 16.7.2003, Coll. Sekhar & Party.

**Distribution** : India : Common throughout.

**Elsewhere** : Bangladesh, China, Indonesia, Malaysia, Myanmar, Pakistan, Thailand and Vietnam.

**Remarks** : Discoidal and flattened shell, spire depressed, sinistrally coiled, thick, with ear shaped aperture, last whorl large, dialated towards apertue. It is a well known vector snail and harbour largest number of cercariae (Subba Rao, 1989).

## Family PLANORBIDAE

## Subfamily PLANORBINAE

### Genus ***Gyraulus*** Charpentier, 1837

1837 *Gyraulus* (Agass:z, MS) Charpentier, *Neue Denkschr. Allg. Schweiz.* Gesell, 1(2) : 21.

**Remarks** : The family includes the genus *Gyraulus* under subfamily *Planorbinae* which are very small. less 10 mm in diameter, thin, semi transparent, whorls distinct rapidly increase in size about 3 to 5 in number. Though several species under the genus are reported from India, only two species *viz Convexiusculus* and *labiatus* are reported from Andhra Pradesh. Both the species are studied from Pocharam Lake.

### ***Gyraulus concexiusculus*** (Hutton)

1849. *Planorbis convexiusculus* Hutton, *J. Asiat. Soc. Beng.,* **18**(2) : 657.

2005. *Gyraulus convexiusculus*; Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 209.

**Distribution** : India : Throughout.

**Elsewhere** : Iran to Philippines.

**Remarks** : This species can be distinguished by its last whorl sub-angulate at its periphery, obliquely striate, umbilicus wide, whorl distinct.

### ***Gyraulus labiatus*** (Benson)

1850. *Planorbis labiatus* Benson, *Ann. Mag. Nat. Hist.* **(2)5** : 350.

2005. *Gyraulus labiatus* : Mitra *et. al. Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 210.

**Material studied** : 4 exs. Loc. Pocharam, 22.12.2005, Coll. C.A.N. Rao.

**Distribution** : India : Andhra Pradesh, Madhya Pradesh, Maharashtra, West Bengal, Tamil Nadu.

**Elsewhere** : Myanmar.

**Remarks** : Similar to the former species, but less number of whorls, 3½; sutures impressed; aperture oblique, heart shaped. Whitish rib within aperture.

Class BIVALVIA

Order UNIONIDA

Family UNIONIDAE

Genus ***Lamellidens*** Simpson

1900. *Lamellidens* Simpson, Proc. U.S. natn. Mus. (Washington), **22** : 854.

**Remarks** : Commonly known as 'Mussels' Two species are reported from Pocharam Lake *viz Marginalis* and *Corrianus* of three reported from Andhra Pradesh. Shells of these animals are used as scraper to peel off skin of the raw mangoes, *etc.* and used in manufacture of poultry feed and handicrafts.

### ***Lamellidens marginalis*** (Lamarck)

1822. *Unio marginalis* Lamarck, *Hist. Anim. Sans Vert.* **4** : 79.

2005. *Lamellidens marginalis* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 212.

**Material studied** : 19 exs. & 8 valves, Loc. Pochammaralu, 22.7.2004. Coll. Sekhar & Party; 4 exs., 1 valve. Loc. Pocharam vill, Coll. Sekhar & Party.

**Distribution** : India : Very common throughout.

**Elsewhere** : Bangladesh, Myanmar, Sri Lanka.

**Remarks** : Shell oblong-Ovate, smooth thin, outer surface covered with thick brownish black periostracum, with light band on its lower ventral margin, interior nacreous; umbo prominent, hense with two cardinals in right valve, single in left valve.

Incidence of pearl production has reported in this species are of inferior quality to those pearls produced by marine oysters. Author happens to visit the ponds at Vidyasagar at Jadavpur near Kolkata where pearls have been noticed from these mussels caught by the local people.

### ***Lamellidens corrianus*** (Lea)

1834. *Unio corrianus* Lea, *Trans. Amer. Philos. Soc.*, **6**(2) : 65, pl. 9, fig. 25.

2005. *Lamellidens corrianus* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series*, 5(5) *Zool. Surv. India* : 212.

**Distribution** : India : Common throughout.

**Elsewhere** : Bangladesh to Myanmar.

**Remarks** : Similar to the former species, but can be differentiated in having less prominent umbo and absence of light band at ventral margin on outer surface; having two cardinals on both valves; posterior margin narrowly rounded, dorsal margin straight.

This species is an edible and are sold in the market along with *marginalis*. Shells are used in small scale shell craft industry especially in Bihar & West Bengal for making buttons & ornaments. Also used in poultry fed and lime (Subba Rao, 1989).

Family AMBLEMIDAE

Subfamily PARREYSIINAE

Genus ***Parreysia*** Conrad

Subgenus ***Parreysia*** *s.str.*

**Remarks** : Shells oval to elliptical, heavy, inflated, subrhomboidal with zic zac ribs on umbonal region. Outer surface with smooth perostracum; cardinals heavy, rugged, lamellar teeth short, umbonal cavity deep.

Two species are reported here *viz. Corrugata* subsp. *nagpoornensis* and *fevidens*.

### ***Parreysia (Parreysia) corrugata nagpoorensis*** (Lea)

1859. *Unio nagpoornensis* Lea, *Proc. Acad. Nat. Sci. Philad.* **3** : 331.

2005. *Parreysia corrugata nagpoorensis* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series*, 5(5) *Zool. Surv. India* : 214.

**Distribution** : India : Andhra Pradesh, Assam, Maharashtra, Gujarat, Orissa.

**Elsewhere** : Bangladesh.

**Remarks** : Shell partly eroded, but shows distinct characters of the species reported earlier by others. This species differs from *fevidens* in having less than three numbers of central teeth.

### ***Parreysia (Parreysia) favidens*** (Benson)

1862. *Unio favidens, Ann. Mag. nat. Hist.* (3) **10** : 188.

1989. *Parreysia favidens* : Subba Rao, *Hand Book : Freshwater Moluscs of India* : 180 figs. 466-467, 484 & 485.

**Material studied** : 10 valves, Loc. Pocharam vill., 28.3.2004, Coll. Sekhar & Party; 2 valves, Loc. Pochammaralu, 22.7.2004, Coll. Sekhar & Party.

**Distribution** : India : Andhra Pradesh, Assam, Maharashtra, Uttar Pradesh, Orissa.

**Elsewhere** : Bangladesh.

**Remarks** : Shells agrees with characters given by Subba Rao (1989). The species differs from *corrugata* in more inquilatral, thick; angulate both anterior and posterior sides, central teeth more strong and 3 or more in number. Many of the valves are eroded, lost their periostracum and partly broken. Two species *viz. deltae* (Benson) and *marcens* (Benson) though reported from Andhra Pradesh (Mitra *et el.* 2005), up to subspecies level were not deal here as the shells are eroded.

## Order VENEROIDA

## Family CORBICULIDAE

## Genus ***Corbicula*** Megarle von Muehlfeld

### ***Corbicula striatella*** Deshayes

1854. *Corbicula striatella* Deshayes, *Proc. zool. Soc. London.* **22** : 344.

2005. *Corbicula striatella* : Mitra, Dey and Ramakrishna. *Fauna of Andhra Pradesh, State Fauna Series,* 5(5) *Zool. Surv. India* : 217.

**Material studied** : 1 valve, Loc. Pocharam vill., 28.3.2004, Coll. Sekhar & Party.

**Distribution** : India : Common throughout.

**Elsewhere** : Pakistan, Myanmar.

**Remarks** : Though collection is represented by single valve, exhibits the diagnostic characters of the species. Indicates its occurrence in Pocharam. Usually found in beds of rivers and streams. The present material in hand is partly eroded. This is an accidental occurrence of the species in the lake. Probably received into the lake by the inflow river currents.

## DISCUSSION AND SUMMARY

The present study reveals that a total of 15 species under 9 genera and 9 families of both gastropods and bivalves collected from Pocharam Lake, which is near to the Bird sanctuary reflects its importance recently. Mitra *et al* (2005) studied the fauna of Andhra Pradesh, reported a total of 43 species under 23 genera and 13 families of freshwater molluscs. The authors covered Manjira Lake, Sangareddy in their studies which is having a link to Pocharam Lake by a small river 'Alair' which connects the river Manjira. They reported 14 species under 12 genera and 8 families, which is almost equal number to the present studies. However, there are some common species occurs in both the water bodies, *viz. Bellamya bengalensis* with form typica, and *Bellamya dissimilis, Bithynia (Digoniostoma) cearameopoma, Tarebia lineata, Lymnaea (Psuedosuccinea) luteola* f. *australis, Indoplanorbis exustus* and *Gyraulus convexciusculus* of gastropods and bivalve *Corbicula striatella.* The last mentioned species is represented here by a single valve which is also partly damaged, probably washed by river waters. No live shells are collected for the study. The species which occurs at Manjira *viz. Gabbia stenothyroids, Mysorella costigera, Thiara scabra, Melanoides tuberculatus, Lymnaea accuminata gracilior* and bivalve, *Lamellidens consobrinus* are not found in Pocharam Lake. It is interesting to observe that the species *Bellamya bengalensis* with the forms, *annandalei, doliaris,* and *eburnean, Bithynia (Digoniostoma) pulchella, Lymnaea, accuminata f.typica, Gyraulus labiatus* of the gastropods and bivalves *viz. Lamellidens marginalis, Lamellidens corrianus, Parreysia favidens, Parresia corrugata nagpoorensis* are found to occur in Pocharam. The most commonest snail of the peninsular India, Pila virens is not reported either from Manjira or from Pocharam, is interesting to note here. All the species studied here are all India in their distribution and hence endemism si seen in the present study.

There is a chance of occurrence of some more species from Pocharam lake by making an intensive surveys by the experts in different seasons.

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*Zool. Surv. India*
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# ICHTHYOFAUNA OF POCHARAM LAKE, ANDHRA PRADESH, HYDERABAD

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The Indian inland fishes comprise a vivid spectrum of ichthyofauna, offering challenging avenues of taxonomical and biological pursuits. Although considerable work has been done by ichthyologists and fish biologists, much still remains to be accomplished, particularly in those areas where environments are rapidly changing due to human impact of one sort or another. The fish fauna of Medak district has been worked out by Rahimullah (1944); a part of his work also includes the studies on Pocharam Lake. Since then there is no faunal account of the fishes of the lake. In view of this and proper management of fish species and fishery resources update knowledge of the fish fauna is necessary and hence the present study was taken up during the course of the project on 'Limnological and Faunistic studies of Pocharam lake. Medak-Nizamabad Districts, Andhra Pradesh.

## INTRODUCTION

The most important and the largest reservoir of the Medak district is the Pocharam reservoir (water spread area 16.835 sq. kms., with a depth of about 6-7 mts.) formed by damming the river Aleru. It was constructed between 1916 and 1922 (18° 08'N 77° 57'E) at about 100 kms north-west of Hyderabad in Medak and Nizamabad districts of Andhra Pradesh. It is situated in a very fine natural setting being surrounded by low hills, which are covered with green vegetation during the rainy season, and during the winter months the lake teems with ducks and other aquatic birds, which take shelter on small 'Islands' In short, it is one of the prettiest spots in the Medak district and easily accessible to all nature lovers. During the rainy season the lake overflows and is a magnificent sight to look at. At that time fishes are caught on the over flow channels in large numbers. The inventory comprises of 24 species accommodated under 22 genera 6 orders and 12

families. Under each species, citation for original description and other accompanying work necessary to undertake the taxon is given. Limited number of studies has also been carried on ichthyofauna of some specific wetlands of Andhra Pradesh (Chacko 1949, Chacko *et al* 1952, David A 1963, Dutt, S and V.R. Murthy, 1976 a & 1976 b, Babu Rao & Siva Reddy 1976 & 1984, Dutt, S and P.B. Reddy 1979, Barman 1993 & Chandrasekhar 2002 & 2003. The classification of fishes adopted in this paper is that of Jayaram (1999), Talwar and Jhingran (1999) and Menon (1999).

## MATERIAL AND METHODS

Fishermen were engaged every time to operate cast net to collect the fishes. Some fishes were collected from fishermen when they were fishing, and also at the time of harvesting. The specimens were fixed in 10% formaline solution. Small specimens were directly put in formaline, while medium sized ones prior to fixation were given a longitudinal incision along the abdomen. Larger forms like *Mastacembelus armatus* were fixed by injecting 10% formalin into muscles and the abdomen. Fixed specimens were kept in containers following standard procedures and with proper labeling. The surveys were conducted in three seasons for a period of two (2) years during 2003-05. Seven collection spots *viz.*, (Pocharam Village, Pochammaralu, Rajpet, burugupalle, Polkampet, Wadalaparthy & Kottapalle) have been selected for study and recorded 24 species under, 12 families and 6 orders from the total of 755 specimens collected.

### List of freshwater fishes of Pocharam Lake, Andhra Pradesh

I ORDER OSTEOGLOSSIFORMES

(i) FAMILY NOTOPTERIDAE

1. *Notopterus notopterus* (Pallas)

II ORDER CYPRINIFORMES

(ii) Family CYPRINIDAE

2. *Salmostoma bacaila* (Hamilton)
3. *Chela laubuca* (Hamilton)
4. *Parluciosoma d. daniconius* (Hamilton)
5. *Osteobrama vigorsii* (Hamilton)
6. *Puntius sophore* (Hamilton)
7. *Puntius ticto* (Hamilton)
8. *Catla catla* (Hamilton)
9. *Labeo rohita* (Hamilton)

(iii) Family BALITORIDAE

10. *Schistura d. denisoni* (Day)

III Order SILURIFORMES

(iv) Family BAGRIDAE

11. *Mystus vittatus* (Hamilton)
12. *Mystus cavasius* (Hamilton)
13. *Aorichthys seenghala* (Sykes)

(v) Family SILURIDAE

14. *Ompok bimaculatus* (Bloch)
15. *Wallago attu* (Schneider)

IV ORDER BELONIFORMES

(vi) Family BELONIDAE

16. *Xenentodon cancila* (Hamilton)

V ORDER SYNBRANCHIFORMES

(vii) Family MASTACEMBELIDAE

17. *Macrognathus pancalus* (Bloch)
18. *Mastacembelus armatus* (Hamilton)

VI Order PERCIFORMES

(viii) Family AMBASSIDAE

19. *Chanda nama* (Hamilton)
20. *Parambassis ranga* (Hamilton)

(ix) Family CICHLIDAE

21. *Etroplus maculatus* (Bloch)

(x) Family GOBIIDAE

22. *Glossogobius giuris* (Hamilton)

(xi) Family BELONTIDAE

23. *Polyacanthus fasciatus* (Schneider)

Suborder CHANNOIDEI

(xii) Family CHANNIDAE

24. *Channa punctatus* (Bloch)

## Key to orders of freshwater fishes of Pocharam Lake, Andhra Pradesh

1. Body more or less cylindrical, elongate and eel shaped. ..... 2

   Body not cylindrical, elongated and eel shaped but fusiform and laterally compressed. ..... 3

2. Gill openings small, confluent as a single slit. ..... **Synbranchiformes**

   Gill openings non-confluent as two lateral slits.

   Pelvic girdle and fins absent. ..... **Mastacembeliformes**

3. Skin without scales, either smooth or covered with osseous plates or with scattered tubercles. Pectoral fin outer most ray modified in to thick ray or osseous spine. **Siluriformes.**

   Skin coloured or rarely without scales but never with osseous plates. Pectoral fin without any such modifications. ..... 4

4. Abdomen edge keeled with double or single serrations. ..... **Osteoglossiformes.**

   Abdomen edge smooth, rounded. ..... 5

5. Pelvic fins inserted in thoracic region and with spines. Dorsal and Anal fins with spines. Mostly Dorsal fin in two parts, continuous or separate, one spiny, another with soft rays. ..... **Perciformes.**

   Pelvic fins inserted in the abdominal region and without spines. Mostly with a single dorsal fin No scales on head. No teeth on jaws ..... **Cypriniformes.**

# SYSTEMATICS

I. Order OSTEOGLOSSIFORMES

(i) Family NOTOPTERIDAE

(Feather backs or Knife fishes)

Genus ***Notopterus*** Lacepede 1800

1. ***Notopterus notopterus*** (Pallas)

1769. *Gymnotus notopterus* Pallas, *Spicil. Zool.*, Petersburg, 7:40, pl.6, fig.2, (Type-locality : Ponds and rivers of Bengal).

1936. *Notopterus osmani* Rahimullah and Das, *Bull. Soc. Port. Nat.*, **12**(18) : 136, pl.23, (Type-locality : Rivers of Hyderabad Deccan).

1991. *Notopterus notopterus* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 64, Vol-I.

1999. *Notopterus notopterus* Jayaram, *The Freshwater Fishes of the Indian Region* : 19, 20. (Distribution and key to species).

**Common name** : Feather back.

**Measurements** : 90-170 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1259), Pocharam village, CAN Rao & Party, 4-11-03; 2 ex(ZSI/FBS/N/1229), Wadalaparthy, SVAC Sekhar & Hakeel Md., 21-7-04; 1 ex(ZSI/FBS/N/1258), Burugupalle, CAN Rao & SVAC Sekhar, 1-6-2005.

**Diagnosis** : Dorsal fin small, its origin midway between the snout tip and end of caudal fin, far behind the pelvic fin region. Pelvic fin very short. Anal fin united with the caudal fin. Body oblong and strongly compressed. Head compressed, its length about 4.5 times in standard length; mouth moderate. Pectoral fin moderate, extend beyond anal fin origin. Scales minute.

**Distribution** : Fresh and brackish waters of India, Pakistan, Burma, Malay Archipelago and Philippines.

**Habitat** : Inhabits fresh and brackish waters. The species appears to thrive well in lentic waters. No worthwhile attempt towards its culture in India has been made.

## II. ORDER CYPRINIFORMES

### (ii) Family CYPRINIDAE

### Genus ***Salmostoma*** Swainson 1839

### 2. ***Salmostoma bacaila*** (Hamilton)

1822. *Cyprinus bacaila* Hamilton, *Fish Ganges*, 265, 384 pl.8, fig.76. (Type locality: Gangetic Provinces).

1991. *Salmostoma bacaila* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 320,321, Vol-I.

1999. *Salmostoma bacaila* Menon, *Rec. zool. Surv. India, Occ, Paper No.*, **175** : 366.

**Common name** : Large razor belly minnow.

**Measurements** : 30-80 cm.

**Material examined** : 3 exs(ZSI/FBS/N/1313), Pocharam Village, SS Kamble & Party, 4-11-03; 1 ex(ZSI/FBS/N/1314), Kottapalle, SS Kamble, 5-11-03; 3 exs(ZSI/FBS/N/1315), Pocharam village, SVAC & Hakeel Md., 12-4-05.

**Diagnosis** : Body elongate and compressed. Mouth oblique. Dorsal fin inserted in advance of anal fin. Scales very small; lateral line straight, de-curved with 86-110 scales.

**Distribution** : Brahmaputra, Ganga, Mahanadi river systems. Also in Pakistan, Bangladesh, Nepal.

**Habitat** : Slow running streams and reservoirs.

Genus ***Chela*** Hamilton 1822

3. ***Chela laubuca*** (Hamilton)

1822. *Cyprinus (Chela) laubuca* Hamilton, *Fish. Ganges*, 260,384 (Type-locality : Ponds in Northern parts of Bengal).

1991. *Chela laubuca* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 316, Vol-I.

1999. *Chela laubuca* Jayaram, *The Freshwater Fishes of the Indian Region* : 73,74 (Distribution and key to species).

**Common name** : Indian glass barb/ Indian hatchet fish.

**Measurements** : 50 -90 cm.

**Material examined** : 1 ex. (ZSI/FBS/N/1216) Polkamopet, SVAC & Hakeel Md, 21-7-04; 3 ex. (ZSI/FBS/N/1221), Rajpet, SSK, 5-11-03.

**Diagnosis** : Body deep and greatly compressed. Abdomen keeled only between and behind anal fins. Mouth slightly oblique. Pectoral fin long and wing like. Outer pelvic fin ray strongly produced. Lateral line complete with 31-37 scales.

**Distribution** : India, West Bengal, Bangladesh and Myanmar.

**Habitat** : Ponds, tanks and streams.

Genus ***Rasbora*** Bleeker 1859

4. ***Parluciosoma daniconius*** (Hamilton)

1822. *Cyprinus daniconius* Hamilton, *Fish Ganges, P. 327, pl. 15, Fig. 89* (Type-locality : Rivers of Southern Bengal).

1991. *Parluciosoma daniconius* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 382, Vol-I.

1999. *Parluciosoma daniconius*, Menon, *Rec. zool. Surv. India, Occ. Paper No.*, **175** : 366.

**Common name** : Black line Rasbora.

**Measurements** : 30.3 - 70 cm.

**Material examined** : 1 ex, (ZSI/FBS/N/1295) Pocharam village, SS Kamble, 4-11-03; 28 exs(ZSI/FBS/N/1225), Polkampet, SS Kamble, 5-11-03; 1 ex, (ZSI/FBS/N/1296) Wadalaparthy, SVAC Sekhar & Hak Md., 13-2-04; 6 exs, (ZSI/FBS/N/1297) Polkampet,

SS Kamble, 13-2-04; 6 exs, (ZSI/FBS/N/1298) Rajpet, SVAC Sekhar & Hakeel Md., 13-2-04; 2 exs, (1299) Pochammaralu, SS Kamble, 14-2-04; 2 exs, (ZSI/FBS/N/1286) Polkampet, SVAC Sekhar & Hakeel Md., 21-7-04; 2 exs, (ZSI/FBS/N/1300) Pochammaralu, SVAC Sekhar & Hakeel Md., 22-7-04; 7 exs, (ZSI/FBS/N/1301) Pocharam village, SVAC Sekhar & Hakeel Md., 22-7-04; 2 exs, (ZSI/FBS/N/1271) Burugupalle, CAN Rao & Party, 10-10-04; 1 ex, (ZSI/FBS/N/1302) Pochammaralu, SVAC Sekhar & Hakeel Md., 7-1-05; 9 exs, (ZSI/FBS/N/1262) Kottapalle, SVAC Sekhar & Hakeel Md., 28-3-05; 32 exs, (ZSI/FBS/N/1202) Wadalaparthy, SVAC Sekhar & Hakeel Md., 22-4-05.

**Diagnosis** : Body oblong and compressed. Mouth small, eyes large. A black lateral line stripe along center of body present. No scales on head, single dorsal fin present. Body laterally very compressed and no barbells. Danila notch on lower jaw present. Anal rays are three simple and five branched rays.

**Distribution** : Throughout India. Also in Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, Malay Archipelago and Zanzibar.

**Habitat** : Very common all over Andhra Pradesh.

Genus ***Osteobrama*** Heckel 1842

5. ***Osteobrama vigorsii*** (Sykes)

1841. *Rohtee vigorsii* Sykes, *Trans. Zool. Soc. Lond.*, 2 : 364, pl. 63, fig.3. (Type locality : Bheema River at Pairgam Maharashtra).

1843. *Leuciscus durancelli* Valenciennes (in c&v), *Hist. Nat. Poiss.*, 17 : 77, p.488 (Bombay).

1889. *Rohtee vigorsii* Day, *Fauna Br. India*, Fish. 1 : 342.

1991. *Osteobrama vigorsii* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 236, 242, Vol-I.

1999. *Osteobrama vigorsii* Jayaram, *Handbk, Freshw. Fish. India* : 102, 103 (Distribution and key to species).

**Common name** : Deccan cotio, Bheema ossteobrama.

**Measurements** : 40.5-60.5 cm.

**Material examined** : 6 exs, (ZSI/FBS/N/1264) Polkampet, SVAC Sekhar & Hakeel Md, 13-2-04; 22 exs, (ZSI/FBS/N/1205) Kottapalle, SVAC Sekhar & Hakeel Md., 28-3-04; 1 ex, (ZSI/FBS/N/1240) Burugupalle, CAN Rao & Party, 10-10-04; 2 exs, (ZSI/FBS/N/1251) Polkampet, SVAC Sekhar & Hakeel Md., 21-7-04.

**Diagnosis** : Body compressed. Mouth small; a pair of rudimentary maxillary barbells present. Dorsal spine very long. Lateral line with 73-85 scales.

**Distribution** : India : Godavari, Krishna river systems and Mahanadi River.

**Habitat** : Very common in streams.

Subfamily CYPRININAE

Genus ***Puntius sophore*** Hamilton 1822

6. ***Puntius sophore*** (Hamilton)

1822. *Cyprinus sophore,* Hamilton, *Fish Ganges,* Pp. 310, 389, P19, fig. 86. *(Type-locality : Ponds and rivers in Gangeticprovinces).*

1962. *Puntius sophore* Misra, *Rec. Indian Mus.,* **57** : 115.

1991. *Puntius sophore* Talwar & Jhingran, *Inland Fishes of India* and Adjacnt Countries : 288, 289, Vol-I.

1999. *Puntius sophore* Jayaram, *The Freshwater Fishes of the* Indian Region : 120. (Distribution and key to species).

**Common name** : Stigma barb, Softfin swamp barb.

**Measurements** : 30-70.5 cm.

**Material examined** : 4 exs, (ZSI/FBS/N/1217) Pocharam village, SS Kamble, 4-11-03; 1 ex, (ZSI/FBS/N/1206) Burugupalle, SS Kamble, 5-11-03; 2 exs, (ZSI/FBS/N/1248) Polkampet, SS Kamble, 5-11-03; 1 ex, (ZSI/FBS/N/1280) Rajpet, SS Kamble, 5-11-03;1 ex, (ZSI/FBS/N/1231) Polkampet, SVAC Sekhar & Hakeel Md., 13-2-04; 1 ex, (ZSI/FBS/N/1263) Rajpet, SVAC Sekhar & Hakeel Md., 28-3-04; 12 exs, (ZSI/FBS/N/1261) Wadalaparthy, SVAC Sekhar & Hakeel Md., 28-3-04; 7 exs, (1285) Burugupalle, SVAC Sekhar & Hakeel Md., 21-7-04; 2 exs, (ZSI/FBS/N/1278) Wadalaparthy, SVAC Sekhar & Hakeel Md., 21-7-04; 7 exs, (ZSI/FBS/N/1303) Rajpet, SVAC Sekhar & Hakeel Md., 21-7-04; 11 exs, (ZSI/FBS/N/1269) Polkampet, CAN Rao, 10-10-04; 1 ex, (ZSI/FBS/N/1304) Burugupalle, CAN Rao, 10-10-04; 2 ex, (ZSI/FBS/N/1273) Pocharam village, SVAC Sekhar & Hakeel Md., 6-1-05; 1 ex, (ZSI/FBS/N/1305) Rajpet, SVAC Sekhar & Hakeel Md, 6-1-05; 5 exs, (ZSI/FBS/N/1306) Pochammaralu, SVAC & Hakeel Md., 7-1-05.

**Diagnosis** : Barbels absent. A deep black round blotch at base of caudal fin, a similar black blotch on anterior of body adjacent to dorsal fin. Dorsal fin origin midway between snout and tip of caudal fin. Lateral line complete. One posterior dark blotch on 22-24 scales. No scales on heads. Single dorsal fin. Body laterally compressed. No horny covering on inner side of lips which are distinct.

**Distribution** : Freshwaters of India, Pakistan, Bangladesh, Burma & Yanam.

**Habitat** : Predominant species of Krishna river system.

### 7. ***Puntius ticto*** (Hamilton)

1822. *Cyprinus ticto* Hamilton, *Fish Ganges,* Pp. 310, 389, P19, fig. 86. (Typelocality : Ponds and rivers in Gangeticprovinces).

1991. *Puntius ticto* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 291, 292, Vol-I.

1999. *Puntius ticto* Jayaram, *The Freshwater Fishes of the* Indian Region : 120. (Distribution and key to species).

**Common name** : Stigma barb.

**Measurements** : 30-60 cm.

**Material examined** : 4 exs(ZSI/FBS/N/1210), Kottapalle, SVAC & Md. Hak, 28-3-04; 7 exs. (ZSI/FBS/N/1292), Pocharam village, SVAC & Md. Hak, 21-7-04; 4 exs. (ZSI/FBS/N/1281), Polkampet, CANR, 10-10-04.

**Diagnosis** : Mouth terminal and small; no barbels. Lateral line usually complete, often ceases after six to eight scales. Body laterally compressed. No horny covering on inner side of the lips which are distinct. No scales on head, single dorsal fin. Dorsal spine serrated on its posterior edge.

**Distribution** : Freshwaters of India (except Kerala & South Tamil Nadu), Pakistan, Nepal & Bangladesh.

**Habitat** : Very common all over Andhra Pradesh.

## Genus ***Catla*** Cuvier & Vallenciennes 1844

### 8. ***Catla catla*** (Hamilton)

1822. *Cyprinus catla* Hamilton, *Fish Ganges* : 287; pl. 13, fig. 81. (Type-locality : rivers and tanks of Bengal).

1991. *Catla catla* Talwar & Jhingran, *Inland Fishes of India and Adjacnt Countries* : 163, 164, Vol-I.

1999. *Catla catla* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** : 366.

1999. *Catla catla* Jayaram, *The Freshwater fishes of the Indian Region* : 131 (Distribution and key to species).

**Common name** : Catla.

**Measurements** : 255 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1276). (Rajpet, SVAC Sekhar & Hakeel Md., 28-3-04.

**Diagnosis** : Body deep. Its depth 2.5 to 3 times in standard length. Head enormously large. Mouth wide and upturned, with prominent protruding lower jaw. Lower lip thick.

Pectoral fin long, extend to pelvic fin. Lateral line complete with 40 to 43 scales. The species has been transplanted in to several rivers in Peninsular India.

**Distribution** : Throughout Northern India up to Krishna river. Also in Pakistan, Bangladesh, Nepal and Myanmar.

**Habitat** : It is a good food fish. It is one of the renowned and fastest growing Indian major carp. Catla is non-predatory and its feeding is restricted to surface and midwater. Catla breeds in rivers, which are its natural habitats.

Genus ***Labeo*** Cuvir

9. ***Labeo rohita*** (Hamilton)

1822. *Cyprinus rohita* Hamilton, *Fish Ganges* pp. 301, pl. 36, fig. 85 (Type-locality: Gangetic provinces).

1877. *Labeo rohita* Day, *Fish. India* : 508, pl. 127. fig. 4.

1999. *Labeo Rohita* Menon, *Rec. zool. Surv. India, Occ. Paper No.*, **175** : 366.

**Measurements** : 150-250 cm.

**Material examined** : 1 ex(ZSI/FBS/N/5222), Pocharam Village, S.V.A.C Sekhar & Hakeel Md., 22-7-04; 1 ex(ZSI/FBS/N/5236), Wadalparthy, C.A.N. Rao & Party, 9-10-04; 1 ex(ZSI/FBS/N/5185), Pocharam Village, S.V.A.C. Sekhar & Hakeel Md., 6-1-05.

**Diagnosis** : Body moderately elongate, snout fairly depressed, projects beyond mouth. Eyes large, 4-6 times (diameter) in head. Mouth small and inferior. Lips thick and fringed, with distinct inner fold. A pair of short thin maxillary barbells. Dorsal arises midway between the snout and the base of the caudal fin. Caudal fin deeply forked. Scales large in size. Pectoral fin shorter than head. Lateral line with 40-44 scales.

**Distribution** : Freshwaters of India, Pakistan, Bangladesh, Myanmar, Nepal and Sri Lanka.

**Habitat** : Commercially important, cultured widely, chiefly used in stocking tanks, but riverine in nature.

(iii) Family BALITORIDAE

Subfamily NOEMACHEILINAE

10. ***Schistura d. denisoni*** (Day)

1867. *Nemacheilus denisoni* Day, *Proc. Zool. Soc. Lond.*, 287, (Type-locality : Bhawany River; Base of Nilgiris).

1987. *Noemacheilus d. denisoni,* Menon, *Fauna Ind. Pisces,* (4) 1 : 93, pl. 10, figs. 3 & 4, (Peninsular India).

1999. *Schistura d. denisoni, The Freshwater fishes of the Indian Region* : 184, 189 (Distribution and key to species).

**Measurements** : 40-90 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1243), Pocharam village, SS Kamble, 5-11-03.

**Diagnosis** : Body of uniform depth, its depth 4.7-6.9 times in standard length. Mouth semi-circular, lips moderately fleshy, lower lip furrowed and interrupted in middle. Barbels well developed and thread like. Dorsal fin inserted midway between snout-tip and base of caudal fin. Caudal fin deeply emarginate, with rounded lobes. Lateral line incomplete. A blackish band at the base of dorsal fin origin and number of brownish black bands from dorsal to ventral surface of body.

**Distribution** : Peninsular India, Bihar and Madhya Pradesh.

**Habitat** : In Andhra Pradesh it is found in both the rivers Krishna and Godavari.

III. ORDER SILURIFORMES

(iv) Family BAGRIDAE

Subfamily BAGRINAE

Genus ***Mystus*** Scopoli 1777

11. ***Mystus vittatus*** (Hamilton)

1797. *Silurus vittatus Bloch, Ichth. Hist. Nat.,* 11 : 40, pl. 371, fig. 2 (Type locality : Tranquebar, S.India).

1877. *Macrones vittatus,* Day, *Fish. India* : 448, pl. 98, fig. 3 and pl. 99, fig. 4.

1991. *Mystus vittatus,* Talwar and Jhingran, *Inland Fish.,* **2** : 573-574, Vol-II.

1999. *Mystus vittatus, The Freshwater fishes of the Indian Region* : 184, 189 (Distribution and key to species).

**Measurements** : 50-100 cm.

**Material examined** : 7 exs(ZSI/FBS/N/1222), Pocharam village, SS Kamble & Party, 21-7-04; 4 exs(ZSI/FBS/N/1242), Polkampet, SVAC Sekhar & Hakeel Md., 13-2-04; 2 exs(ZSI/FBS/N/1277), Wadalaparthy, SVAC Sekhar & Hakeel Md., 28-3-04; 7 exs. (ZSI/FBS/N/1310), Kottapalle, SVAC Sekhar & Hakeel Md., 28-3-04; 12 exs(ZSI/FBS/N/1226), Rajpet, SVAC Sekhar & Hakeel Md., 28-3-04; 2 exs(ZSI/FBS/N/1249), Pochamaralu, SVAC Sekhar & Hakeel Md., 21-7-04; 1 ex(ZSI/FBS/N/1234), Kottapalle, SVAC Sekhar & Hakeel, 21-7-04.

**Common name** : Rohu.

**Diagnosis** : Body elongate and somewhat compressed. Head depressed. Mouth terminal. Barbells 4 pairs; maxillary pair extends beyond pelvic fins, often to end of anal fin. Skin without scales, outer most ray of pectoral fin modified into hard ray. Adipose fin small, inserted much behind rayed dorsal fin but in advance of anal fin. Anal fin short with less than 20 rays. A dark shoulder spot present. 3 or 4 longitudinal colour bands below and above lateral line.

**Distribution** : Throughout India, Pakistan, Nepal, Bangladesh, Burma, Sri Lanka, Thailand and Malaya.

**Habitat** : Widely distributed species found throughout Andhra Pradesh within tidal influence also.

### 12. ***Mystus cavasius*** (Hamilton)

1822. *Pimelodus cavasius*, Hamilton, *Fish Ganges* : 203, 397; P II, fig. 67. (Type-locality : *Gangetic provinces*).

1999. *Mystus cavasius*, Jayaram, *The Freshwater Fishes of the Indian Region*, p. 199.

**Common name** : Gangetic mystus.

**Measurements** : 50-160 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1260), Pocharam village, SVAC Sekhar & Hakeel Md., 28-3-04; 1 ex(ZSI/FBS/N/1230), Wadalaparthy, SVAC Sekhar & Hakeel Md., 21-7-04; 1 ex(ZSI/FBS/N/1208), Burugupalle, SVAC Sekhar & Hakeel Md, 21-7-04; 2 ex(ZSI/FBS/N/1311), Pochammaralu, SVAC Sekhar & Hakeel Md., 27-1-05.

**Diagnosis** : Body elongate and compressed; its depth 4-4.5 times in standard length. Barbels 4 pairs. Maxillary barbells extend posteriorly beyond caudal fin base in adults. Dorsal spine weak, often feebly serrated. Adipose fin large, inserted close behind base of rayed dorsal fin. A dark shoulder spot at the anterior base of dorsal fin.

**Distribution** : Widely distributed in India. Also in Pakistan, Bangladesh, Thailand, Malaysia and China.

**Habitat** : Inhabits freshwater and tidal rivers and lakes, ponds, and inundated fields.

### 13. ***Aorichthys seenghala*** (Sykes)

1841. *Platystoma seenghala*, Sykes, *Trans. Zool. Soc. Lond.*, **2** : 371, pl. 65, fig. 2 (Type locality : Mulla motha river at Poona).

1877. *Macrones seenghala*, Day, *Fishes of India* : 444, pl. 99, fig. 1; Day, 1889, *Fauna Br. India, Fishes*, **1** : 150.

1976. *Mystus (Aorichthys) seenghala,* Misra, *Fauna of India,* Pisces (2nd ed.), **3** : 79, fig. 16.

**Common name** : Giant river-catfish, Tengara.

**Measurements** : 40 cm.

**Diagnosis** : Body elongate, compressed. Snout broad, mouth sub terminal, barbels 4 pairs, extend posteriorly tom pelvic fins or beyond to anal fin. Dorsal spine weakly serratd on its posterior edge, adipose fin base short about as long as rayed dorsal fin base. A dark well defined spot on adipose dorsal fin.

**Distribution** : India : Ganga, Yamuna, Krishna, Godavari and Cauveri river systems. Also in Afghanistan, Pakistan, Nepal & Bangladesh.

**Remarks** : It is also worthy to note that, several specimens of more than 1 feet of *Aorichthys seenghala* were found caught though drag nets during large scale harvesting for fishes of Pocharam Lake during summer. However, voucher specimens could not be collected because of their commercial value. Further no specimens of this species even of smaller size could be collected during survey conducted.

(v) Family SILURIDAE

Genus ***Ompok*** Lacepede 1803

14. ***Ompok bimaculatus*** (Hamilton)

1822. *Silurus bimaculatus* Hamilton, *Fish Ganges* : 150, 374, pl. 25, fig. 47. (Type-locality : Bengal).

1991. *Ompok bimaculatus,* Talwar and Jhingran, *Inland Fish.,* 582, Vol-II.

1999. *Ompok bimaculatus,* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** : 366.

**Common name** : Indian Butter Cat fish.

**Measurements** : 50-120 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1312), Wadalaparthy, SVAC Sekhar & Hakeel Md., 13-2-04.

**Diagnosis** : Body elongate, mouth large and oblique. Teeth in villiform, bands on jaws. Barbels two pairs. Maxillary pair extends beyond anal fin origin. The mandibular barbels very short. Anal fin long. Caudal fin deeply forked. Gape of mouth not extending beyond mouth.

**Distribution** : Freshwaters of India. Also in Pakistan, Nepal, Bangladesh, Burma, Sri Lanka, Thailand and China.

**Habitat** : Inhabits rivers, ponds and tanks. This species, which attains a length of 17 cm, is caught in fairly large numbers in West Bengal. It is an esteemed food fish.

Genus ***Wallago*** Bleeker

15. ***Wallago attu*** (Schneider)

1801. *Silurus attu* Schneider, *Syst. Ichth., p. 378; pl. 75* (Type-locality : Malabar).

1981. *Wallago attu,* Jayaram, *HBFW Fish India,* p. 210.

1991. *Wallago attu,* Talwar and Jhingran, *Inland Fish.,* 590, Vol-II.

1999. *Wallago attu* Jayaram, *The Freshwater fishes of the Indian Region* : 246 (Distribution and key to species).

**Common name** : Boal/Freshwater shark.

**Measurements** : 250 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1257), Kottapalle, SVAC Sekhar & Hakeel Md., 6-1-05.

**Diagnosis** : Body elongate, length of head 5 to 5.5 in total length; large and depressed; snout spatulate, mouth wide, its gape extends posterior to beyond eyes. Barbels two pairs. Maxillary pair long extends beyond the origin of anal fin. The mandibular much shorter, dorsal fin short, inserted slightly in advance of pelvic fins. Weak pectoral fin. A faint orange-yellow band along lateral line often present.

**Distribution** : Widely distributed in the freshwaters of India, Pakistan, Sri Lanka, Myanmar, Sumatra, Java, Indo-China.

**Habitat** : It is one of the largest, voracious and predatory catfish., inhabiting large rivers, tanks and lakes. The fish prefers muddy tank subject to periodical flooding.

IV. Order BELONIFORMES

(vi) Family BELONIDAE

Genus ***Xenentodon*** Regan 1911

16. ***Xenentodon cancila*** (Hamilton)

1822. *Esox cancila* Hamilton, *Fish Ganges.,* 213, 215, 380; pl. 27, fig. 70. (Type-locality : Gangetic provinces).

1991. *Xenentodon cancila,* Talwar and Jhingran, *Inland Fish.,* 743, Vol-II.

1999 *Xentodon cancila,* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** : 366. (Checklist).

**Common name** : Freshwater garfish.

**Measurements** : 50-180 cm.

**Material examined** : 4 exs(ZSI/FBS/N/1294), Pocharam Village, SS Kamble, 4-11-03.

**Diagnosis** : Body very elongate, sub-cylindrical compressed. Dorsal fin and anal fin about equal and inserted in opposite position. Caudal fin truncate. Snout sharply pointed. Jaws prolonged into a beak.

**Distribution** : Distributed mostly in all states of India. Also Bangladesh, Pakistan, Nepal, Sri Lanka, Malaysia, Thailand.

**Habitat** : It is a surface living fish, attaining length of 30 cm. It is a larvivorous and good aquarium fish.

V. Order SYNBRANCHIFORMES

(vii) Family MASTACEMBELIDAE

Genus ***Macrognathus*** Lacepede 1800

17. ***Macrognathus pancalus*** (Hamilton)

1822. *Macrognathus pancalus* Hamilton, *Fish Ganges.*, 30, 364, pl. 223, fig. 7. (Type locality : Bengal).

1999. *Mastacembelus pancalus,* Yazdani, *Rec. Zool. Surv. India, Occ. Paper No.,* **124** : 1-26.

1999. *Macrognathus pancalus, The Freshwater fishes of the Indian Region* : 358 (Distribution and key to species).

**Common name** : Lesser Spiny eel.

**Measurements** : 70-120 cm.

**Material examined** : 8 exs(ZSI/FBS/N/1268), Pocharam Village, SS Kamble, 4-11-03. 1 ex(ZSI/FBS/N/1214), Wadalaparthy, CAN Rao & Party, 9-10-04.

**Diagnosis** : Cylindrical, eel shaped elongate body. Cleft of mouth narrow, a long fleshy snout with a trilobed extremity. Fist dorsal with free spine. The soft dorsal and anal are separated from caudal by a small notch. No pelvic fins. Fins yellowish with black spots. White spots on the body. One strong pre-orbital spine and 2-5 spines on preoperculum present.

**Distribution** : Widely distributed in India. Also Bangladesh, Pakistan, Nepal, Sri Lanka, Malaysia, Thailand, Vietnam, China.

**Habitat** : Inhabits Rivers and estuaries. Grows to 18 cm in length. Generally prefers slow and sluggish waters.

Genus ***Mastacembelus*** Lacepede 1800

18. ***Mastacembelus armatus*** (Lacepede)

1800. *Macrognathus armatus* Lacepede, *Hist. Nat. Poiss.*, **2** : 286.

1990. *Matacembelus armatus,* Yazdani, *Rec. Zool. Surv. India Occ. Paper No.,* **124** : 1-36.

1999. *Mastacembelus armatus* Jayaram, *The Freshwater fishes of the Indian Region* : 359, 360 (Distribution and key to species).

**Common name** : Spiny eel.

**Measurements** : 50 cm.

**Material examined** : 1 ex(ZSI/FBS/N/1255), Polkampet, SVAC Sekhar & Hakeel Md., 21-7-04.

**Diagnosis** : *Body* relatively slender, snout long, conical without any prolongation of upper jaw. Pre-orbital spine present. Spinous dorsal fin inserted above, middle or posterior third of pectoral fins, last dorsal spine small and hidden beneath the skin. Dorsal and anal fins broadly joined to caudal fin; bands and reticulated pattern present on body.

**Distribution** : Widely distributed in India. Also Bangladesh, Pakistan, Nepal, Sri Lanka, Malaysia, Thailand, China.

**Habitat** : It is the largest spiny eel. It is reported to be a very good food fish. It is common during summer months. Thus is also found commonly at quite high altitudes in river Tawi (Jammu) and its tributaries.

## VI. ORDER PERCIFORMES

### (viii) Family AMBASSIDAE

### Genus ***Chanda*** Hamilton

### 19. ***Chanda nama*** (Hamilton)

1822. *Chanda nama* Hamilton, *Fish Ganges* : 109; 371, pl. 39, fig. 37. (Type locality : N.E. Bengal).

1991. *Chanda nama*, Talwar and Jhingran, *Inland Fish.*, 799, 800, Vol-II.

1999. *Chanda nama*, Menon, *Rec. zool. Surv. India, Occ. Paper No.*, **175** : 366.

**Common name** : Elongate glass perchlet.

**Measurements** : 20.5-70 cm.

**Material examined** : 12(ZSI/FBS/N/1267) exs, Pocharam village, SS Kamble & Party, 4-1-03; 35 exs(ZSI/FBS/N/1266), Pocharam village, SS Kamble & Party, 5-11-03; 26(ZSI/FBS/N/1223) exs, Rajpet, SVAC Sekhar & Hakeel Md., 14-2-03; 69 exs(ZSI/FBS/N/1265), Wadalparthy, SVAC Sekhar & Hakeel Md, 28-3-04; 13 exs(ZSI/FBS/N/1275), Wadalparthy, SVAC Sekhar & Hakeel Md, 21-7-04; 2 exs(ZSI/FBS/N/1232), Kottapalle, SVAC Sekhar & Hakeel Md., 21-7-04; 5 exs(ZSI/FBS/N/1212), Rajpet, SVAC Sekhar & Hakeel Md., 22-7-04; 2 exs(ZSI/FBS/N/1284), Wadalparthy, CAN Rao, 9-10-04; 8

exs(ZSI/FBS/N/1245), Burugupalle, CAN Rao, 10-10-04; 10 exs(ZSI/FBS/N/1238), Pocharam village, CAN Rao, 9-10-04; 2 exs(ZSI/FBS/N/1246), Pochammaralu, SVAC Sekhar & Hakeel Md, 7-1-05.

**Diagnosis** : Body ovate and strongly compressed. Mouth large with prominent lower jaw. Teeth villiform on jaws with three canines on either side of lower jaw. Scales minute, often irregularly arranged. Lateral line with 100-107 scales. A dark blotch on dorsal fin upper edge generally present. A forwardly directed procumbent spine present in the dorsal fin.

**Distribution** : Widely distributed in India. Also in Pakistan, Bangladesh, Nepal and Myanmar.

**Habitat** : Commercially known as 'Glass fish', used in aquariums. Inhabits fresh and brackish waters. It attains a length of 11 cm.

### 20. ***Parambassis ranga*** (Hamilton) 1822

1822. *Chanda ranga,* Hamilton, *Fish Ganges;* 113, 371, pl. 6. Fig. 38. (Type-locality : Gangetic provinces).

1991. *Pseudambassis ranga,* Talwar & Jhingran, *Inland fisheries,* **2** : 805.

1999. *Parambassis ranga* Jayaram, *The Freshwater fishes of the Indian Region* : 371 (Distribution and key to species).

**Common name** : Indian glassy fish.

**Measurements** : 20.5-60 cm.

**Material examined** : 16 exs(ZSI/FBS/N/1252), Pocharam village, SS Kamble & Party, 4-11-03; 2 exs(ZSI/FBS/N/1290), Rajpet, SS Kamble, 5-11-03; 2 exs(ZSI/FBS/N/1204), Pocharam village, SS Kamble, 16-7-03; 26 exs. (ZSI/FBS/N/1200), Pocharam village, SVAC, 13-2-04; 9 exs(ZSI/FBS/N/5198), Polkampet, SVAC Sekhar, 13-2-04; 2 exs(ZSI/FBS/N/1272), Kottapalle, SVAC Sekhar & Hakeel Md, 28-3-04; 17 exs. (ZSI/FBS/N/1283), Pocharam village, SVAC Sekhar & Hakeel Md., 28-3-04; 2 exs. (ZSI/FBS/N/1274), Wadalaparthy, SVAC Sekhar & Hakeel Md, 28-3-04; 8 exs. (ZSI/FBS/N/1244), Pochammaralu, CAN Rao, 10-10-04; 6-1-05; 2 exs (ZSI/FBS/N/1249), Pochammaralu, SVAC Sekhar & Hakeel Md, 12-4-05.

**Diagnosis** : Body stout, deep and compressed. Preopercular hind edge smooth with one or two serrations at angle. Lateral line with 47-63 scales. A dorsal shoulder spot present.

**Distribution** : Widely distributed in India, Pakistan, Bangladesh, Nepal and Myanmar.

**Habitat** : It is a good aquarium fish. It makes nests and guards its young. It attains a maximum length of 7 cm. It is a monsoon breeder.

## (ix) Family CICHLIDAE

### Genus ***Etroplus*** Cuvier 1830

### 21. ***Etroplus maculatus*** (Bloch)

1785. *Chaetodon maculatus* Bloch, Syst., Ichth., Pl. 427, fig. 2 (Type locality : India).

1889. *Etroplus maculatus,* Day, *Faun. Brit. India, Fish.,* **2** : 429.

1991. *Pseudambassis ranga,* Talwar & Jhingran, *Inland fisheries,* **2** : 883.

1999. *Catla catla* Jayaram, *The Freshwater fishes of the Indian Region :* 400 (Distribution and key to species).

**Common name** : Pearl spot.

**Measurements** : 30.5-70 cm.

**Material examined** : 2 exs(ZSI/FBS/N/1217), Kottapalle, SS Kamble & party, 5-11-03; 1 ex(ZSI/FBS/N/1218), Wadalparthy, SVAC Sekhar & party, 13-2-04; 1 ex(ZSI/FBS/N/1244), Kottapalle, SVAC Sekhar & Party, 13-2-04; 2 exs(ZSI/FBS/N/1245), Pochammaralu, SS Kamble, 14-2-04; 5 exs(ZSI/FBS/N/1287), Pocharam village, SVAC Sekhar & Hakeel Md., 28-3-04; 1 ex(ZSI/FBS/N/1288), Rajpet, SVAC Sekhar & Hakeel Md., 22-7-04; 2 exs(ZSI/FBS/N/1316), Pocharam village, SS Kamble & Pty, 16-7-03; 1 ex(ZSI/FBS/N/1239), Kottapalle, SVAC Sekhar & Hakeel Md., 21-7-04; 1 ex(ZSI/FBS/N/1228), Pocharam village, CAN Rao, 9-10-04; 1 ex(ZSI/FBS/N/1223), Pocharam village, CAN Rao, 9-10-04; 7 exs(ZSI/FBS/N/1235), Pocharam village, 10-10-04; 1 ex(ZSI/FBS/N/1236), Pochammaralu, SVAC Sekhar & Hakeel Md., 7-1-05; 6 exs(ZSI/FBS/N/1250), Pochammaralu, SVAC Sekhar & Hakeel Md, 6-1-05; 1 ex(ZSI/FBS/N/1269), Pocharam village, SVAC, 6-1-05; 2 exs(ZSI/FBS/N/1270), Pochammaralu, SVAC Sekhar & Hakeel Md., 7-1-05.

**Diagnosis** : Body with 1-3 dark blotches along side (on body). A single nostril on each side. Body very deep and compressed. Eyes large. Mouth small. Caudal fin lunate. Dorsal fin single with spinous and soft part. Pelvic fins deep black, anal and caudal fins yellowish. Anal fin with reddish edge in live conditions.

**Distribution** : India : Tamil Nadu, Kerala, Dakshina Kannada and Andhra Pradesh. Also in Sri Lanka.

**Habitat** : Rivers, reservoirs and tanks.

## (x) Family GOBIIDAE

### Genus ***Glossogobnius*** Gill 1859

### 22. ***Glossogobius giuris*** (Hamilton)

1822. *Gobius giuris* Hamilton, *Fish Ganges* : 51, 306.

1991. *Glossogobius giuris,* Talwar & Jhingran, *Inland fisheries,* **2** : 935.

1999. *Glossogobius giuris,* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** : 366.

**Common name** : Tank goby.

**Measurements** : 60-130 cm.

**Material examined** : 11 exs(ZSI/FBS/N/1209), Pocharam Village, SS Kamble, 4-11-03; 1 ex(ZSI/FBS/N/1224), Polkampet, SVAC Sekhar & Hakeel Md., 13-2-04; 2 exs, Kottapalle, SVAC Sekhar & Hakeel Md., 28-3-04; 2 exs(ZSI/FBS/N/5139), Rajpet, SVAC Sekhar & Hakeel Md., 13-2-04; 1 ex, (ZSI/FBS/N/5139) Polkampet, SVAC Sekhar & Hakeel Md., 21-7-04; 1 ex(ZSI/FBS/N/1253), Burugupalle, SVAC Sekhar & Hakeel Md., 21-7-04.

**Diagnosis** : Body elongate and somewhat compressed. A long tapering fish with vertically compressed head, lower jaw prominent. Two dorsals placed closely, pelvics united forming a disk, olive to lighter green above lighter below; 4 to 6 black blotches on body along the lateral line. Dorsal, pectoral and caudal fins mottled with dark spots. Spots darkest along spine of second dorsal fin.

**Distribution** : Widely distributed in India. Also Bangladesh, Pakistan, Nepal, Sri Lanka, Malaysia, Thailand, China, Japan, Philippines, Australia.

**Habitat** : Rivers, tanks and ponds. Commercially not important. It is tasteless, but it is a beautiful aquarium fish. It attains a length of about 30 cm.

(xii) Family BELONTIDAE

Genus ***Colisa*** Cuvier & Vallenciennes 1831

23. ***Polyacanthus fasciatus*** (Schneider)

1801. *Trichogaster fasciatus* Shneider, *Syst. Ichth.* : 164, pl. 36 (Type locality : Tranquebar).

1881. *Trichogaster fasciatus,* Day, *Fauna Bri. India,* Fish, **2** : 372, fig. 123.

1999. *Polyacanthus fasciatus,* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** : 366.

**Common name** : Giant gourami.

**Measurements** : 30.5-70.2 cm.

**Material examined** : 2 exs(ZSI/FBS/N/), Pochamaralu, SS Kamble & SVAC Sekhar, 16-7-03; 2 exs(ZSI/FBS/N/), Polkampet, SVAC Sekhar & Hakeel Md., 21-7-07; 2 exs(ZSI/FBS/N/), Rajpet, SVAC Sekhar & Hakeel Md., 21-7-04; 2 exs(ZSI/FBS/N/), Pocharam village, CAN Rao, 9-10-04; 2 exs(ZSI/FBS/N/), Burugupalle, CAN Rao, 10-10-04; 1 ex(ZSI/FBS/N/), Rajpet, CAN Rao, 10-10-04; 3 exs(ZSI/FBS/N/), Pocharam village, SVAC Sekhar & Hakeel Md., 12-4-05.

**Diagnosis** : Body strongly compressed. Pelvic fins thread like. Dorsal and anal fins long-based. Caudal fin slightly cut square. Fish red coloured with many bands and a rudimentary adnate spine present. Dorsal fin with more than seven spines (between 15-18). Dorsal fin with spines and rays.

**Distribution** : North India, Coromondal coast as far as the river Krishna, Pakistan, Bangladesh, Nepal, Myanmar.

**Habitat** : Abundantly found in beds, mostly areas than lakes, rivers and ponds. Popular food and aquarium fish; carnivorous.

Suborder CHANNOIDEI

(xii) Family CHANNIDAE

Genus ***Channa*** Scopoli 1777

24. ***Channa punctatus*** (Bloch)

1793. *Ophiocephalus punctatus* Bloch. *Natur Aus. Fische,* 7 : 139, pl. 358. (Type locality : Coromandal coast).

1991. *Channa punctatus,* Talwar & Jhingran, *Inland fisheries,* **2** : 1020.

1999. *Channa punctatus,* Menon, *Rec. zool. Surv. India, Occ. Paper No.,* **175** ; 366.

**Common name :** Spotted snakehead.

**Measurements :** 30.5-140 cm.

**Material examined :** 4 exs(ZSI/FBS/N/1256), Kottapalle, SVAC Sekhar & Hakeel Md., 6-1-05.

**Diagnosis :** Body elongate. Pectoral fin extends to anal fin. Pelvic fin is about 75% of pectoral fin length. Caudal fin rounded. Pre-dorsal scales 12. Scales 37-40 in lateral series. Several short cross bands descending from back.

**Distribution :** Widely distributed in India. This fish is the most common species found throughout Andhra Pradesh.

**Habitat :** It is a medium to large sized fish, inhabiting ponds, irrigation canal, paddy fields (during monsoon seasons), tanks etc., prolific breeder, and breeds in ponds through out the year by forming nest. Peak breeding is before and during monsoon.

## DISCUSSION

The present work has recorded 24 species under 22 genera, 12 families and 6 orders from the Pocharam Lake. It has been noted that among the highly priced commercially important fishes of this reservoir are the (species of) *Labeo rohita* and some other economically important species are *Catla catla, Ompok bimaculatus, Wallago attu, Channa punctatus, Glossogobius giuris.*

## CONSERVATION MEASURES

Pocharam Lake may be treated as one of the wetlands of India, and its faunal resources, particularly the fish fauna should be monitored and a proper management of its faunal content as a whole is very much needed. It may be mentioned here that wetlands are the breeding grounds of many commercially important riverine fishes, therefore, their proper maintenance and are very essential for supplying animal protein to the local people residing near the area of this water body in particular. Two important riverine edible fishes of India, *viz.,* freshwater shark, *Wallago attu* and *Catla catla* are found in this lake. The connection of this lake with different water bodies should be monitored and properly maintained; otherwise, migration of these two commercially important fishes will be disturbed, which may lead to decline of their population in tha habitats near future. Considering the above facts, alteration of these habitats due to expanding agricultural practices, removal of mud *etc* should be carefully monitored. Since fishes are very sensitive to pollution, discharge of effluents to this water body should be prevented and prohibited. At the same time, over fishing especially during breeding season should be monitored and controlled to protect the commercially important fishes. Because of all these reasons, conservation measures should be implemented to maintain fish population in an adequate number.

## CONCLUSION

As per the results it is observed that fish species of Pocharam has been much depleted during the past, as in spite of the best efforts only 24 species could be found. The occurrence of fish species in this lake were compared with the earlier records of Rahimullah (1943 & 1944) to find out any changes in faunal profile during the intervening period due to altered environmental conditions. Rahimullah (1944) reported the occurrence of 35 species of fishes in Pocharam lake, which is high as compared to present record of 24 species, however, a thorough analysis revealed a replacement of several species *i.e., Notopterus osmani* (Das & Rahimullah), *Chela clupeoides* (Blosch), *Chela phulo* (Ham.), *Apidaparia morar* (Ham.), *Berilius bakeri* (Day), *Barbus* (*Puntius*) *kolus* (Sykes), *Barbus* (*Puntius*) *sarana* (Ham.), *Barbus* (*Puntius*) *stoliczkanus* (Day), *Cirrhina reba* (Ham.), *Labeo boggut* (Sykes), *Labeo fimbriata* (Blosch), *Labeo potail* (Sykes), *Lepidocephalus guntea* (Ham.), *Rohtee belangeri* (Cuv & Val), *Rohtee cotio var.cunma* (Day), *Ophicephalus gachua* (Ham.), *Ophicephalus marulius* (Ham.), *Cailichrous pabda* (Ham.), *Mystus aor* (Ham.), *Mystus armatus* (Day), *Aorichthys seenghala* (Sykes), *Proeutropiichthys taakree* (Sykes), *Silnopangasius childrenii* (Sykes).

New records from the lake are *Parluciosoma daniconius* (Ham.), *Puntius ticto* (Ham.), *Mystus vittatus* (Ham.), *Mystus cavacius* (Ham.), *Wallgo attu* (Schneider), *Xenetodon cancila* (Ham.), *Etroplus maculates* (Blosch), *Polyacanthus fasciatus*

(Schneider), *Salmostoma bacaila* (Ham.), *Macrognathus pancalus* (Blosch), *Catla catla* (Ham.), *Channa punctatus* (Bloch), *Schistura d. denisoni* (Day).

The fishes which are common during 1940s and also in the present collection are, *Notopterus notopterus* (Pallas), *Mastacembelus armatus* (Hamilton), *Parluciosoma d. daniconis* (Hamilton), *Puntius sophore* (Hamilton), *Glossogobius giuris* (Hamilton), *Aorichthys seenghala* (Sykes), *Osteobrama vigorsii* (Hamilton), *Osteobrama vigorsii* (Hamilton), *Chanda nama* (Hamilton), *Parambassis ranga* (Hamilton), *Ompok bimaculatus* (Bloch).

During early 1940's there was predominance of commercially important and sensitive major carps. During present investigations, there was a predominance of catfishes (*Mystus, Wallago, Ompok* species).

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# HERPETOFAUNA

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## INTRODUCTION

Very little is known about the herpetofaunal diversity of Andhra Pradesh, and to date the most comprehensive work in this field for the state remains that of Sarkar *et al.* (1993) and Sanyal *et al.* (1993). Besides these documents, scattered literature (see References) and historic documents, such as that of Boulenger (1882, 1890, 1920), Smith (1931, 1935, 1943), Parker (1934), Stayamurthi (1967), give passing reference to the herpetofaunal diversity of the State. Srinivasulu and Srinivasulu (2004) opined that the herpetofauna of the Protected Area Network of in Andhra Pradesh is poorly documented.

Major collection surveys spanned from 2003 to 2005 and areas in and around the villages of Pocharam, Pochammaralu, Rajpet, Burugupalle, Polkampet, Wadalaparthy and Kottapalle were surveyed. Herpetofauna were collected either manually or using collection nets or snake sticks and preserved in 4% formalin. Specimens collected are deposited with the Freshwater Biology Station of Zoological Survey of India at Hyderabad (abbreviated ZSI/FBS). Notes on other species are based on observations carried out by the authors from 1996 onwards.

## SYSTEMATIC ACCOUNT

Class AMPHIBIA

Family BUFONIDAE

1. ***Bufo melanostictus*** Schneider, 1799

**Common Asian Toad**

1799. *Bufo melanostictus* J. G. Schneider. Hist. Amph. : 216.

**Material examined** : 2 examples, ZSI/FBS/N/1191.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India; Bangladesh, Cambodia, China, Hong Kong, Indonesia, Lao People's Democratic Republic, Macau, Malaysia, Myanmar, Nepal, Papua New Guinea, Pakistan, Singapore, Sri Lanka, Thailand, Taiwan (Province of China), and Viet Nam.

**Remarks** : Common. Inhabits scrub jungles and agriculture fields.

**Status** : LRlc.

### 2. ***Bufo stomaticus*** Lutken, 1862

### Marbled Toad

1862. *Bufo stomaticus* C. F. Lutken. *Vidensk. Meddr. Danske Naturh. Foren.* : 305.

**Material examined** : None.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout most of India; Afghanistan, Iran, Nepal, Bangladesh, and Pakistan.

**Remarks** : Uncommon. Based on sightings in agriculture fields and village groves in the catchment area of the lake between 1999-2003.

**Status** : LRlc.

## Family MICROHYLIDAE

### 3. ***Microhyla ornata*** (Duméril and Bibron, 1841)

### Ornate Narrow-mouthed Frog

1841. *Engystoma ornatum* A.-M.-C. Duméril & G. *Bibron. Erp. Gen.*, **8** : 745.

**Material examined** : None.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India; Bangladesh, Bhutan, Cambodia, China, Hong Kong, Indonesia, Japan, Lao People's Democratic Republic, Macau, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka, Taiwan (Province of China), Thailand and Viet Nam.

**Remarks** : Uncommon. Based on sightings in agriculture fields in the catchment area of the lake and the lakebed area of Pochamralu Deer Breeding Centre between 2000-2002.

**Status** : LRlc.

Family RANIDAE

### 4. ***Euphylyctis cyanophlyctis*** (Schneider, 1799)

### Indian Skipping Frog

1799. *Rana cyanophlyctis* J. G. Schneider. Hist. Amph. : 137.

**Material examined** : Many examples; One example in ZSI, Hyderabad [ZSI/FBS/N/1183] from Pochamralu, Pocharam Lake, Medak District, 16.07.2003, coll. by S.S. Kamble and party; Four examples in ZSI, Hyderabad [ZSI/FBS/N/1187] from Polkampet, Pocharam Lake, Nizamabad District, 13.02.2004, coll. by S.S. Kamble and party; Nine examples in ZSI, Hyderabad [ZSI/FBS/N/1189] from Pochamralu, Pocharam Lake, Medak District, 22.07.2004, coll. by Hakeel Mohammed and party; One example in ZSI, Hyderabad [ZSI/FBS/N/1194] from Pocharam, Pocharam Lake, Medak District, 7.01.2005, coll. by C. Srinivasulu and party.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India; Afghanistan, Bangladesh, Iran, Nepal, Pakistan and Sri Lanka.

**Remarks** : Common. Inhabits agriculture fields in the catchment area of the lake and lake edge and other small puddles all around the Lake.

**Status** : LRlc.

### 5. ***Euphylyctis hexadactylus*** (Lesson, 1834)

### Indian Green Frog

1834. *Rana hexadactyla* R. P. Lesson. Voyage Indes : 331.

**Material examined** : None.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India, except north and northwest; Bangladesh and Sri Lanka.

**Remarks** : Uncommon. Based on sightings in agriculture fields in the catchment area of the lake and the lakebed area of Pochamralu Deer Breeding Centre between 1998-2003.

**Status** : LRlc.

### 6. ***Fejervarya cf. limnocharis*** (Gravenhorst, 1829)

### Cricket Frog

1829. *Rana limnocharis* J. L. C. Gravenhorst. *Rept. Mus. Zool. Vratis. Delic. Mus. Zool.*, : 42.

**Material examined** : Many examples; Two examples in ZSI, Hyderabad [ZSI/FBS/N/1184] from Wadalaparthy, Pocharam Lake, Nizamabad District, 4.11.2003, coll. by S.S. Kamble and party; Three examples in ZSI, Hyderabad [ZSI/FBS/N/1186] from Polkampet, Pocharam Lake, Nizamabad District, 5.11.2003, coll. by S.S. Kamble and party; One example in ZSI, Hyderabad [ZSI/FBS/N/1188] from Kothapalle, Pocharam Lake, Nizamabad District, 13.02.2004, coll. by S. S. Kamble and party; Three examples in ZSI, Hyderabad [ZSI/FBS/N/1190] from Pochamralu, Pocharam Lake, Medak District, 10.10.2004, coll. by C. A. N. Rao and party; Five examples in ZSI, Hyderabad [ZSI/FBS/N/1185] from Rajpet, Pocharam Lake, Medak District, 10.10.2004, coll. by C. A. N. Rao and party; Three examples in ZSI, Hyderabad [ZSI/FBS/N/1193] from Pocharam, Pocharam Lake, Medak District, 24.11.2004, coll. by C. A. N. Rao and party; Nine examples in ZSI, Hyderabad [ZSI/FBS/N/1195] from Pocharam, Pocharam Lake, Medak District, 7.01.2005, coll. by C. Srinivasulu and party; One example in ZSI, Hyderabad [ZSI/FBS/N/1194] from Pocharam, Pocharam Lake, Medak District, 7.01.2005, coll. by C. Srinivasulu and party.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India; Bangladesh, Brunei Darussalam, Cambodia, China, Hong Kong, India, Indonesia, Japan, Lao People's Democratic Republic, Macau, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan (Province of China), Thailand and Viet Nam.

**Remarks** : Common. Inhabits agriculture fields in the catchment area of the lake and lake edge and other small puddles all around the Lake.

**Status** : LRlc.

### 7. ***Hoplobatrachus tigerinus*** (Daudin, 1803)

### Indian Bull Frog

1803. *Rana tigerina* F.-M. *Daudin. Hist. Nat.*, : 64; Pl. XX.

**Material examined** : None.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India; Afghanistan, Bangladesh, India, Madagascar, Myanmar, Nepal, and Pakistan.

**Remarks** : Uncommon. Based on sightings in agriculture fields in the catchment area of the lake and the lakebed area of Pochamralu Deer Breeding Centre between 1998-2003.

**Status** : LRlc.

Family RHACOPHORIDAE

8. ***Polypedates maculatus*** (Gray & Hardwicke, 1834)

**Indian Tree Frog**

1834. *Hyla maculata* J. E. Gray & R. Hardwicke. III. *Indian Zool.*, : Pl. LXXXII; Fig. 1.

**Material examined** : None.

**Distribution** : Many locations in the catchment area of Pocharam Lake.

**Elsewhere** : Found distributed throughout India, except northwest; Bangladesh, Bhutan, India, Nepal and Sri Lanka.

**Remarks** : Uncommon. Based on sightings in agriculture fields in the catchment area of the lake and near wells of and man-made structures near villages between 2000-2002.

**Status** : LRlc.

Class REPTILIA

Order CHELONIA

Family BATAGURIDAE

1. ***Melanochelys trijuga*** (Schweigger, 1812)

**Indian Black Turtle**

1812. *Emys trijuga* A. F. Schweigger. *Prod. Monogr. Chel.*, : 310.

**Material examined** : None.

**Distribution** : Burgupalle, Pocharam Lake.

**Elsewhere** : Found distributed throughout northeastern and peninsular India; Sri Lanka, Nepal, Bangladesh, Maldives, Myanmar, and Thailand.

**Remarks** : Rare. Two individuals caught in fishing net in March 1999. No collections made.

**Status** : LRnT.

Family TRIONYCHIDAE

2. ***Lissemys punctata*** (Bonnaterre, 1789)

**Indian Flapshell Turtle**

1789. *Testudo punctata* M. Bonnaterre. *Tableau Encycl. Method. Nat.*, : 30.

**Material examined** : None.

**Distribution** : Pocharam, Pocharam Lake.

**Elsewhere** : Throughout India; Bangladesh, Nepal, Sri Lanka, Pakistan and northern Myanmar.

**Remarks** : Uncommon. One juvenile specimen dropped by Jungle Crow near Pocharam Guest House in June 2002 was photographed and released in the Lake.

**Status** : LRnT.

Order SQUAMATA

Family AGAMIDAE

3. ***Calotes rouxii*** (Duméril & Bibron, 1837)

**Roux's Forest Lizard**

1837. *Calotes Rouxii* A.-M.-C. Duméril & G. *Bibron. Erp. Gén.* **4** : 407.

**Material examined** : None.

**Distribution** : In the lakebed within Pochamralu Deer Breeding Centre, Pocharam Lake.

**Elsewhere** : Endemic to India.

**Remarks** : Uncommon. A few individuals infrequently sighted along the rocky outcrops in the lakebed of Pochamrallu Deer Breeding Centre in 2001.

**Status** : LRnT.

4. ***Calotes versicolor*** (Daudin, 1802)

**Indian Garden Lizard**

1802. *Agama versicolor* F.-M. Daudin. *Hist. nat. Rept.*, **3** : 395; Pl. XLIV.

**Material examined** : One example in ZSI, Hyderabad [ZSI/FBS/N/1199] from Pochamralu, Pocharam Lake, Medak District, 6.01.2005, coll. by C. Srinivasulu and party.

**Distribution** : Many localities around the Pocharam Lake.

**Elsewhere** : Throughout India; Nepal, Bangladesh, Sri Lanka and Pakistan.

**Remarks** : Common. Found on rocky outcrops in open and scrub forests, and agricultural fields around the Lake and its catchment area.

**Status** : LRnT.

### 5. ***Psammophilus blanfordanus*** (Stoliczka, 1871)

### Blanford's Rock Agama

1871. *Charasia blanfordana* F. Stoliczka. Proc. Asiatic Soc. Bengal 1871(9) : 194.

**Material examined** : None.

**Distribution** : Wadalaparthy and lakebed of Pochamralu Deer Breeding Centre, Pocharam Lake.

**Elsewhere** : Endemic to India in peninsular region.

**Remarks** : Uncommon. Infrequently sighted on rocky outcrops in open and scrub forests in 2001.

**Status** : Not Assessed.

### 6. ***Sitana ponticeriana*** Cuvier, 1829

### Fan-throated Lizard

1829. *Sit.* (= *Sitana*) *ponticeriana* G. J.-L.-N.-F. D. Cuvier. Reg. Nat. **2** : 43.

**Material examined** : None.

**Distribution** : In the lakebed within Pochamralu Deer Breeding Centre, Pocharam Lake.

**Elsewhere** : Throughout India; Nepal, Pakistan and Sri Lanka.

**Remarks** : Uncommon. Based on sightings in the rocky outcrops in open and scrub forests along the lakebed of Pochamralu Deer Breeding Centre between 1999-2001.

**Status** : LRLc.

## Family CHAMAELEONIDAE

### 7. ***Chamaeleo zeylanicus*** Laurenti, 1768

### Indian Chamaeleon

1768. *Chamaeleo zeylanicus* J. N. Laurenti. *Syn. Rept.*, : 46.

**Material examined** : None.

**Distribution** : In the lakebed within Pochamralu Deer Breeding Centre, Pocharam Lake.

**Elsewhere** : Throughout India; Sri Lanka and eastern Pakistan.

**Remarks** : Uncommon. Based on sightings in the scrub forests on the lake bed of the Pochamralu deer Breeding Centre.

**Status** : Vu (A1ac).

Family GEKKONIDAE

### 8. ***Hemidactylus brookii*** (Gray, 1845)

### Brooke's House Gecko

1845. *Hemidactylus Brookii* J. E. Gray. *Cat. Lizards British Mus.*, : 153.

**Material examined** : None.

**Distribution** : In the dilapidated Guest House near Pochamralu village.

**Elsewhere** : Throughout India, and Pakistan.

**Remarks** : Common. Based on sightings in the dilapidated Guest House and other dilapidated man-made structures along the canal don the dam in 2002.

**Status** : LRLc.

### 9. ***Hemidactylus flaviviridis*** Rüppell, 1835

### Yellow-green House Gecko

1835. *Hemidactylus flaviviridis* E. Rüppell. Neue Wirbelth.-*Fauna Abyss., Amph.*, 18 : Pl. 6; Fig. 2.

**Material examined** : None.

**Distribution** : In the dilapidated Guest House and other man-made structures near Pochamralu village.

**Elsewhere** : Found distributed in northern and eastern India; and southern Asia, Middle East and northern Africa.

**Remarks** : Uncommon. Human commensal, often found in houses and other man-made structures. Based on sightings in 2002.

**Status** : LRLc.

### 10. ***Hemidactylus giganteus*** Stoliczka, 1871

### Giant South Indian Tree Gecko

1871. *Hemidactylus giganteus* F. Stoliczka. *Proc. Asiatic Soc. Bengal.* 1871(9) : 193.

**Material examined** : One example [Reg. No. ZSI/FBS/N/1196] from Wadalaparthy, Nizamabad District, 13.07.2005, coll. by C. Srinivasulu and party.

**Distribution** : In the dilapidated Guest House and other man-made structures near Pochamralu village, and on rocky outcrops near Wadalaparthy village.

**Elsewhere** : Endemic to India.

**Remarks** : Common. Inhabits rocky outcrops and other dilapidated man-made structures all around the Pocharam Lake.

**Status** : LRnT.

Family SCINCIDAE

11. ***Mabuya carinata*** (Schneider, 1801)

**Keeled Grass Skink**

1801. *Scincus Carinatus* J. G. Schneider. *Hist. Amphib.*, : 183.

**Material examined** : None.

**Distribution** : Rocky outcrops and near the Guest Houses.

**Elsewhere** : Bangladesh, India, Maldives and Nepal.

**Remarks** : Uncommon. Based on infrequent sightings in the scrub, open forests and near agricultural fields in the catchment area of the Pocharam Lake.

**Status** : LRnt.

Family VARANIDAE

12. ***Varanus bengalensis*** (Daudin, 1802)

**Bengal Monitor Lizard**

1802. *Tupinambis bengalensis* F.-M. Daudin. *Hist. nat. Rept.*, **3** : 67.

**Material examined** : None.

**Distribution** : Near Pochamralu village, Medak district.

**Elsewhere** : Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka.

**Remarks** : Uncommon. Based on single sighting near agricultural fields along the canal down the dam in March 2004.

**Status** : Vu (A1, a,c,d).

Order SERPENTES

Family BOIDAE

13. ***Python molurus*** (Linnaeus, 1758)

**Indian Rock Python**

1758. *Coluber Molurus* C. Linnaeus. 1758. *Syst. Nat. 10th ed.*, **1** : 225.

**Material examined** : None.

**Distribution** : Scrub forest downstream the dam along the canal.

**Elsewhere** : Peninsular India, Pakistan and Sri Lanka.

**Remarks** : Uncommon. Based on drag mark and its resting place seen in January 2005.

**Status** : LRnt.

Family COLUBRIDAE

14. ***Amphiesma stolatum*** (Linnaeus, 1758)

**Buff-striped Keelback**

1758. *Coluber stolatus* C. Linnaeus. *Syst. Zool. 10th ed.*, : 219.

**Material examined** : One example [Reg. No. ZSI/FBS/N/1197] from Polkampet, Nizambad District, 5.11.03, by S.S. Kamble and party.

**Distribution** : Many locations in the agriculture fields and scrub jungles in the catchment area of the Pocharam Lake.

**Elsewhere** : Throughout India, Sri Lanka, Pakistan.

**Remarks** : Uncommon. Inhabits scrub, open forests and near agricultural fields.

**Status** : LRnt.

15. ***Atretium schistosum*** (Daudin, 1803)

**Olive Keelback Water Snake**

1803. *Coluber schistosus* F.-M. Daudin. *Hist. Nat. Rept.*, **6** : 132.

**Material examined** : None.

**Distribution** : Small waterbodies downstream along the canal down the dam.

**Elsewhere** : Most of India and Sri Lanka.

**Remarks** : Common. Inhabits near waterbodies and paddy fields. Based on sighting in January 2005.

**Status** : LRnt.

### 16. ***Coelognathus helena*** (Daudin, 1803)

### Indian Trinket Snake

1803. *Coluber helena* F.-M. Daudin. *Hist. nat. Rept.*, **6** : 277; Pl. LXXVI.

**Material examined** : None.

**Distribution** : In the lakebed area of the Pochamralu Deer Breeding Centre.

**Elsewhere** : Throughout India, Sri Lanka and Pakistan.

**Remarks** : Uncommon. Based on sighting in the scrub jungle of the lakebed area of Pochamralu Deer Breeding Centre in March 2003.

**Status** : LRnt.

### 17. ***Dendrelaphis tristis*** (Daudin, 1803)

### Common Bronzeback Tree Snake

1803. *Coluber tristis* F.-M. Daudin. *Hist. nat. Rept.*, **6** : 430.

**Material examined** : One example [Reg. No. ZSI/FBS/N/1198] from Pochamralu, Medak district, 22.07.04, Hakeel Mohammed and party.

**Distribution** : Village groves along agriculture fields in the lakebed area.

**Elsewhere** : Most of India and Sri Lanka.

**Remarks** : Common. Inhabits scrub, open forests and near agricultural fields.

**Status** : LRlc.

### 18. ***Lycodon aulicus*** (Linnaeus, 1758)

### Common Wolf Snake

1758. *Coluber aulicus* C. Linnaeus. *Syst. Nat. 10th ed.* **1** : 220.

**Material examined** : None.

**Distribution** : In the lakebed area of the Pochamralu Deer Breeding Centre.

**Elsewhere** : Throughout India, Sri Lanka, Hong Kong, Lao PDR, Malaysia, Nepal, Vietnam, Pakistan, Bangladesh, Philippines, Myanmar, Indonesia, S. China.

**Remarks** : Uncommon. Based on sighting in the scrub jungle of the lakebed area of Pochamralu Deer Breeding Centre in March 2003.

**Status** : LRlc.

### 19. ***Ptyas mucosa*** (Linnaeus, 1758)

### Indian Rat Snake

1758. *Coluber mucosus* C. Linnaeus. *Syst. Nat. 10th ed.* 1 : 216.

**Material examined** : None.

**Distribution** : Many localities in the catchment area of the Pocharam Lake.

**Elsewhere** : Throughout India, Sri Lanka, Bangladesh and Myanmar.

**Remarks** : Common. Based on numerous sightings in the scrub jungle of the lakebed area of Pochamralu Deer Breeding Centre and agriculture fields in the catchment area of the Pocharam Lake between 1999 and 2003.

**Status** : LRnt.

### 20. ***Xenochropis piscator*** (Schneidėr, 1799)

### Checkered Keelback Water Snake

1799. *Hydrus Piscator* J.G. Schneider. Hist. Amphib. 1 : 247.

**Material examined** : None.

**Distribution** : Near agricultural fields downstream along the canal down the dam.

**Elsewhere** : Throughout India, and Indo-Malayan region.

**Remarks** : Uncommon. Based on infrequent sightings near agricultural fields in the catchment area of the Pocharam Lake in 2003.

**Status** : LRlc.

## Family ELAPIDAE

### 21. ***Naja naja*** (Linnaeus, 1758)

### Spectacled Cobra

1758. *Coluber naja* C. Linnaeus. *Syst. Nat. 10th ed.* 1 : 221.

**Material examined** : None.

**Distribution** : In agriculture fields in the catchment area and open scrub forest in the Pochamralu Deer Breeding Centre.

**Elsewhere** : Throughout India and Sri Lanka.

**Remarks** : Common. Based on a few sightings in scrub, open forests and near agricultural fields in the catchment area of the Pocharam Lake between 1999-2003.

**Status** : LRnt.

## SUMMARY

A total of 30 species of herpetofauna belonging to 4 orders, 14 families and 25 genera was recorded during the present study (Table 1). Among the amphibians, the species richness was dominated by ranids, followed by bufonids. Among the reptilians, lizards were more diverse than snakes (11 vs 9 species). One species of snake, namely *Python molurus* (Linnaeus, 1758) is based indirect evidence.

**Table 1 : Herpetofauna of Pocharam Lake, Andhra Pradesh**

| S. No. | Class/Order | Family | Genus | Species |
|---|---|---|---|---|
| | AMPHIBIA | | | |
| 1. | ANURA | BUFONIDAE | 1 | 2 |
| 2. | | MICROHYLIDAE | 1 | 1 |
| 3. | | RANIDAE | 3 | 4 |
| 4. | | RHACOPHORIDAE | 1 | 1 |
| | ***Subtotal*** | 4 | 6 | 8 |
| | REPTILIA | | | |
| 1. | CHELONIA | BATAGURIDAE | 1 | 1 |
| 2. | | TRIOCHYNIDAE | 1 | 1 |
| 3. | SQUAMATA | AGAMIDAE | 4 | 5 |
| 4. | | CHAMAELEONIDAE | 1 | 1 |
| 5. | | GEKKONIDAE | 1 | 3 |
| 6. | | SCINCIDAE | 1 | 1 |
| 7. | | VARANIDAE | 1 | 1 |
| 8. | SERPENTES | BOIDAE | 1 | 1 |
| 9. | | COLUBRIDAE | 7 | 7 |
| 10. | | ELAPIDAE | 1 | 1 |
| | ***Subtotal*** | 10 | 19 | 22 |
| | ***Total*** | **14** | **25** | **30** |

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# AVES

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## INTRODUCTION

The birds of Pocharam reservoir has received attention from a long time with stray historic reports scattered in unpublished bird survey reports from the erstwhile Hyderabad sate. The first published report was that of Spillet (1968). Since the early 1980's, intermittent bird surveys by members of Birdwaytchers' Society of Andhra Pradesh has added up to the list of bird diversity (Kumar, 1981; Mathew, 1983, 1990; Kulkarni, 1997; Moorty, 1999; Pittie, 1999; Pittie *et al.*, 1998: Taher and Taher 2001). A comprehensive list of bird observed at Pocharam Lake and its vicinity is lacking and this contribution aims at filling up this lacuna.

The senior author has intermittently studied the wildlife fauna of Pocharam Wildlife Sanctuary, including Pocharam Lake and its catchment area, since late 1995. Under the aegis of the project regular surveys were carried out from 2003 to 2005 to study the bird diversity. The following list includes species that have been observed during that period with those recorded by the senior author since 1995 and also the historic records.

The following systematic account follows recent classification and the common names are following Manakadan and Pittie (2001). The status of threatened category birds is provided.

## SYSTEMATIC ACCOUNT

Order PODICIPITIFORMES

Family PODICIPEDIDAE

Genus ***Tachybaptus*** Reichenbach, 1849

1. 5. ***Tachybaptus ruficollis*** (Pallas 1764)

1764. *Colymbus ruficollis* Pallas, in Vroeg, *Cat. D'Ois., Adumbr.*, : 1-7.

**Common name** : Little Grebe.

**Type locality** : Holland.

**Remarks** : Uncommon, resident breeder; numbers vary from season to season, sometimes absent totally.

Order PELICANIFORMES

Family PELECANIDAE

Genus ***Pelecanus*** Linnaeus, 1758

2. 21. ***Pelecanus philippensis*** Gmelin, 1789

1789. *Pelecanus philippensis* Gmelin, *Syst. Nat.*, 1(2) : 571.

**Common name** : Spot-billed Pelecan.

**Type locality** : Philippines (reassigned to Manila).

**Remarks** : Vagrant, a flock of 23 sighted once August 2002. A few more unconfirmed sightings had also been reported in 2003 and 2004.

**Status** : Threatened and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Family PHALACROCORACIDAE

Genus ***Phalacrocorax*** Brisson, 1760

3. 26. ***Phalacrocorax carbo sinensis*** (Shaw, 1801)

1801. *Pelecanus sinensis* Shaw, *Nat. Misc.*, **13** : pl. 529, Text.

**Common name** : Large Cormorant.

**Type locality** : China.

**Remarks** : Uncommon, locally migrating species, breeding not recorded.

4. 27. ***Phalacrocorax fuscicollis*** Stephens, 1826

1826. *Phalacrocorax fuscicollis* Stephens, in Shaw's Gen. Zool. 13(1)91.

**Common name** : Indian Shag.

**Type locality** : China.

**Remarks** : Uncommon, locally migrating species, breeding not recorded.

### 5. 28. ***Phalacrocorax niger*** (Vieillot, 1817)

1817. *Hydrocorax niger* Vieillot, *Nouv. Dict. Hist. Nat.*, **8** : 88.

**Type locality** : Bengal (East Indies).

**Common name** : Little cormorant.

**Remarks** : Common, has been recorded breeding on *Ficus religiosa* in a school compound in Rajpet.

## Family ANHINGIDAE

### Genus ***Anhinga*** Brisson, 1760

### 6. 29. ***Anhinga melanogaster*** Pennant, 1769

1769. *Anhinga melanogaster* Pennant, *Indian Zool.*, : 13, pl. 12.

**Type locality** : Ceylon and Java.

**Common name** : Darter.

**Remarks** : Uncommon, locally migrating species, breeding not recorded.

**Status** : Near Threatened and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

## Order CICONIIFORMES

## Family ARDEIDAE

### Genus ***Ardea*** Linnaeus, 1758

### 7. 36. ***Ardea cinerea*** Linnaeus, 1758

1758. *Ardea cinerea* Linnaeus, *Syst. Nat. ed.* 10, **1** : 143.

**Type locality** : Europe (restricted to Sweden).

**Common name** : Grey Heron.

**Remarks** : Uncommon, locally migrating species, breeding not recorded.

### 8. 37. ***Ardea purpurea*** Linnaeus, 1766

1766. *Ardea purpurea* Linnaeus, *Syst. Nat. ed.* 12, **1** : 236.

**Type locality** : 'Oriente' (restricted to France).

**Common name** : Purple Heron.

**Remarks** : Uncommon, locally migrating species, breeding not recorded.

Genus ***Ardeola*** Boie, 1822

9. 42. ***Ardeola grayii*** (Sykes, 1832)

1832. *Ardea grayii* Sykes, *Proc. Zool. Soc. London,* : 158.

**Type locality** : Dukhun.

**Common name** : Indian Pond Heron.

**Remarks** : Common, resident breeder. Breeding recorded in Pochamrallu, Pocharam, Rajpet, Burgupally, Wadlaparthy and other villages in the catchment area.

Genus ***Bubulcus*** Bonaparte, 1855

10. 44. ***Bubulcus ibis coromandus*** (Boddaert, 1783)

1783. *Cancroma coromanda* Boddaert, *Table Pl. enlum.,* : 54.

**Type locality** : Coromandel.

**Common name** : Cattle Egret.

**Remarks** : Common, resident breeder. Breeding recorded in Pochamrallu, Pocharam, Rajpet, Burgupally, Wadlaparthy and other villages in the catchment area.

Genus ***Casmerodius*** Gloger, 1842

11. 45. Large Egret ***Casmerodius albus*** (Linnaeus, 1758)

1758. *Ardea alba* Linnaeus, *Syst. Nat., ed.* 10, 1 : 144.

**Type locality** : in *Europa* (restricted to Sweden).

**Common name** : Large Egret.

**Remarks** : Uncommon, locally migrating species, numbers increase in rainy and winter seasons, breeding not recorded.

Genus ***Mesophoyx*** Sharpe, 1894

12. 47,48. ***Mesophoyx intermedia*** (Wagler, 1829)

1829 *Ardea intermedia* Wagler, *Isis von Oken, col.,* 659.

**Type locality** : Java.

**Common name** : Median Egret.

**Remarks** : Uncommon, locally migrating species, numbers increase in rainy and winter seasons, breeding not recorded.

Genus ***Egretta*** Forster, 1817

13. 49. ***Egretta garzetta*** (Linnaeus, 1766)

1766. *Ardea garzetta* Linnaeus, *Syst. Nat., ed.* 12, 1 : 237.

**Type locality** : '*Oriente*' (restricted to northeast Italy).

**Common name** : Little Egret.

**Remarks** : Common, resident breeder. Breeding recorded in Pochamrallu, Pocharam, Rajpet, Burgupally, Wadlaparthy and other villages in the catchment area.

Genus ***Nycticorax*** Forster, 1817

14. 52. ***Nycticorax nycticorax*** (Linnaeus, 1758)

1758. *Ardea nycticorax* Linnaeus, *Syst. Nat., ed.* 10, 1 : 142.

**Type locality** : Southern Europe.

**Common name** : Night Heron.

**Remarks** : Uncommon, resident breeder. Breeding recorded in Pochamrallu, Pocharam and Rajpet.

Genus ***Ixobrychus*** Billberg, 1828

15. 56. ***Ixobrychus cinnamomeus*** (Gmelin, 1789)

1789. *Ardea cinnamomea* Gmelin, *Syst. Nat.*, 1(2) : 643.

**Type locality** : China.

**Common name** : Chestnut Bittern.

**Remarks** : Uncommon, locally migrating species, possibly breeding in the vicinity of the Pocharam Lake.

16. 57. ***Ixobrychus sinensis*** (Gmelin, 1789)

1789. *Ardea Sinensis* Gmelin, *Syst. Nat.*, 1(2) : 642.

**Type locality** : China.

**Common name** : Yellow Bittern.

**Remarks** : Uncommon, locally migrating species, possibly breeding in the vicinity of the Pocharam Lake.

Family CICONIIDAE

Genus ***Mycteria*** Linnaeus, 1758

17. 60. ***Mycteria leucocephala*** (Pennant, 1769)

1769. *Tantalus leucocephalus* Pennant, *Indian Zool.*, : 11, pl. 10.

**Type locality** : Ceylon.

**Common name** : Painted Stork.

**Remarks** : Common, locally migrating species, breeding not recorded.

**Status** : Near Threatened and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Genus ***Anastomus*** Bonnaterre, 1791

18. 61. ***Anastomus oscitans*** (Boddaert, 1783)

1783. *Ardea oscitans* Boddaert, *Table Pl. enlum.*, : 55.

**Type locality** : Pondicherry.

**Common name** : Openbill Stork.

**Remarks** : Common, locally migrating species, breeding not recorded.

**Status** : Vulnerable (Collar *et al.*, 1994).

Genus ***Ciconia*** Brisson, 1760

19. 62. ***Ciconia episcopus*** (Boddaert, 1783)

1783. *Ardea episcopus* Boddaert, *Table Pl. enlum.*, : 54.

**Type locality** : Coromandel Coast.

**Common name** : White-necked Stork.

**Remarks** : Common, locally migrating species, numbers increase in winter season.

Genus ***Leptotilos*** Lesson, 1831

20. 68. ***Leptotilos javanicus*** (Horsfield, 1821)

1821. *Ciconia Javanica* Horsfield, *Trans. Linn. Soc. London,* **13**(1) : 188.

**Type locality** : Java.

**Common name** : Lesser Adjutant.

**Remarks** : Rare. One individual sighted in winter of 2001.

**Status** : Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Family THRESKIORNITHIDAE

Genus ***Threskiornis*** Gray, G. R., 1842

21. 69. ***Threskiornis melanocephalus*** (Latham, 1790)

1790. *Tantalus leucocephalus* Latham, *Index Orn.*, **2** : 709.

**Type locality** : India.

**Common name** : Oriental White Ibis.

**Remarks** : Common, locally migrating species, numbers increase in winter season.

**Status** : Near Threatened and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Genus ***Pseudibis*** Hodgson, 1844

22. 70. ***Pseudibis papillosa*** (Temminck, 1824)

1824. *Ibis papillosa* Temminck, *Pl. Col., livr.* 51, pl. 304.

**Type locality** : India.

**Common name** : Black Ibis.

**Remarks** : Common, locally migrating species, numbers increase in winter season.

**Status** : Vulnerable (Collar *et al.*, 1994).

Genus ***Plegadis*** Kaup, 1829

23. 71. ***Plegadis falcinellus*** (Linnaeus, 1766)

1766. *Tantalus Falcinellus* Linnaeus, *Syst. Nat., ed.* 12, : 241.

**Type locality** : Austria and Italy.

**Common name** : Glossy Ibis.

**Remarks** : Uncommon, winter migrant, numbers increase in winter season.

Genus ***Platalea*** Linnaeus, 1758

24. 72. ***Platalea leucorodia*** Linnaeus, 1758

1758. *Platalea leucorodia* Linnaeus, *Syst. Nat. ed.* 10, **1** : 139.

**Type locality** : Japan.

**Common name** : Eurasian Spoonbill.

**Remarks** : Common, winter migrant.

Family PHOENICOPTERIDAE

Genus ***Phoenicopterus*** Linnaeus, 1758

25. 73. ***Phoenicopterus ruber*** Linnaeus, 1758

1811. *Phoenicopterus ruber* Linnaeus, *Syst. Nat. ed.* 10, **1** : 139.

**Type locality** : Galapagos Archipelago, Ecuador.

**Common name** : Greater Flamingo.

**Remarks** : Common, winter migrant.

Order ANSERIFORMES

Family DENDROCYGNIDAE

Genus ***Dendrocygna*** Swainson, 1837

26. 88. ***Dendrocygna javanica*** (Horsfield, 1821)

1821. *Anas javanica* Horsfield, *Trans. Linn. Soc. London,* **13** : 199, pl. 1.

**Type locality** : Java.

**Common name** : Lesser Whistling Duck.

**Remarks** : Uncommon, local migrant. Seen in small flocks of 20-50 individuals.

Family ANATIDAE

Genus ***Anser*** Brisson, 1760

27. 81. ***Anser anser rubirostris*** Swinhoe, 1871

1871. *Anser anser* var. *rubirostris* Swinehoe, *Proc. Zool. Soc.*, 416.

**Type locality** : Shanghai.

**Common name** : Greylag Goose.

**Remarks** : Uncommon, winter migrant. Often seen in small flocks keeping in company with Bar-headed goose.

28. 82. ***Anser indicus*** (Latham, 1790)

1790. *Anas indicus* Latham, *Index Orn.*, **2** : 839.

**Type locality** : Taimyr (reassigned to India).

**Common name** : Bar-headed Goose.

**Remarks** : Common, winter migrant. Large flocks of 100-250 individuals.

Genus ***Tadorna*** von Oken, 1817

29. 90. ***Tadorna ferruginea*** (Pallas, 1764)

1764. *Anas (ferruginea)* Pallas, in *Vroeg, Cat. D'Ois., Adumbr.* : 5.

**Type locality** : Tartary.

**Common name** : Brahminy Shelduck.

**Remarks** : Uncommon, winter migrant. Seen in small flocks of 20-30 individuals.

30. 91. ***Tadorna tadorna*** (Linnaeus, 1758)

1758. *Anas Tadorna* Linnaeus, *Syst. Nat. ed.* 10, 1 : 122.

**Type locality** : Sweden.

**Common name** : Common Shelduck.

**Remarks** : Rare, winter migrant. Seen in pairs or in small flocks of less than 8 individuals in winter of 2002-2003 and 2003-2004.

Genus ***Anas*** Linnaeus, 1758

31. 93. ***Anas acuta*** Linnaeus, 1758

1758. *Anas acuta* Linnaeus, *Syst. Nat., ed.* 10, 1 : 126.

**Type locality** : Sweden.

**Common name** : Northern Pintail.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

32. 94. ***Anas crecca*** Linnaeus, 1758

1758. *Anas Crecca* Linnaeus, *Syst. Nat., ed.* 10, 1 : 126.

**Type locality** : Sweden.

**Common name** : Common Teal.

**Remarks** : Uncommon, winter migrant. Seen in small flocks of less than 1000 individuals on the edges of the Pocharam Lake.

### 33. 97. ***Anas poecilorhyncha*** J. R. Forester, 1781

1781. *Anas poecilorhyncha* J. R. Forester, *Indian Zool.*, : 23, pl. 13, f. 1.

**Type locality** : Ceylon.

**Common name** : Spot-billed Duck.

**Remarks** : Common, resident breeder. Frequently seen in the shallower areas of the Pocharam Lake.

### 34. 100. ***Anas platyrhynchos*** Linnaeus, 1758

1758. *Anas platyrhynchos* Linnaeus, *Syst. Nat., ed.* 10, 1 : 125.

**Type locality** : Sweden.

**Common name** : Mallard.

**Remarks** : Rare, winter migrant. A few pairs sighted in winter of 2000-2001 and 2001-2002.

### 35. 101. ***Anas strepera*** Linnaeus, 1758

1758. *Anas strepera* Linnaeus, *Syst. Nat., ed.* 10, 1 : 125.

**Type locality** : Sweden.

**Common name** : Gadwall.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

### 36. 103. ***Anas penelope*** Linnaeus, 1758

1758. *Anas penelope* Linnaeus, *Syst. Nat., ed.* 10, 1 : 126.

**Type locality** : Sweden.

**Common name** : Eurasian Wigeon.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

### 37. 104. ***Anas querquedula*** Linnaeus, 1758

1758. *Anas querquedula* Linnaeus, *Syst. Nat., ed.* 10, 1 : 126.

**Type locality** : Sweden.

**Common name** : Garganey.

**Remarks** : Uncommon, winter migrant. Seen in small flocks of 200-500 individuals.

### 38. 105. ***Anas clypeata*** Linnaeus, 1758

1758. *Anas clypeata* Linnaeus, *Syst. Nat., ed.* 10, **1** : 124.

**Type locality** : Sweden.

**Common name** : Shoveller.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

## Genus ***Rhodonessa*** Reichenbach, 1853

### 39. 107. ***Rhodonessa rufina*** (Pallas, 1773)

1773. *Anas rufina* Pallas, *Reise Russ. Reichs,* **2** : 713.

**Type locality** : Caspain Sea.

**Common name** : Red-crested Pochard.

**Remarks** : Common, winter migrant. Seen in small flocks of 500-1500 individuals.

## Genus ***Aythya*** Boie, 1822

### 40. 108. ***Aythya ferina*** (Linnaeus, 1758)

1758. *Anas ferina* Linnaeus, *Syst. Nat., ed.* 10, **1** : 126.

**Type locality** : Sweden.

**Common name** : Common Pochard.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

### 41. 109. ***Aythya nyroca*** (Guldenstadt, 1770)

1770. *Anas nyroca* Guldenstadt, *Novi Comm. Sci. Petropol.,* **14** : 403.

**Type locality** : ('...regionibus Tanaicensibus inter gradum 54°-55°...') = South Russia.

**Common name** : Ferruginous Pochard.

**Remarks** : Common, winter migrant. Seen in small flocks of 20-50 individuals.

**Status** : Near Threatened and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

### 42. 111. ***Aythya fuligula*** (Linnaeus, 1758)

1758. *Anas fuligula* Linnaeus, *Syst. Nat., ed.* 10, **1** : 128.

**Type locality** : Sweden.

**Common name** : Tufted Pochard.

**Remarks** : Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

Genus ***Nettapus*** Brandt, 1836

43. 114. ***Nettapus coromandelianus*** (Gmelin, 1789)

1789. *Anas coromandelianus* Gmelin, *Syst. Nat.*, 1(2) : 522.

**Type locality** : Coromandel, India.

**Common name** : Cotton Teal.

**Remarks** : Common, local migrant. Seen in small flocks of up to 100 individuals.

Genus ***Sarkidiornis*** Eyton, 1838

44. 115. ***Sarkidiornis melanotos*** (Pennant, 1769)

1769. *Anser melanotos* Pennant, *Ind. Zool.* : 12, pl. 11.

**Type locality** : Ceylon.

**Common name** : Comb Duck.

**Remarks** : Common, local migrant. Seen in small flocks of up to 50 individuals.

Order FALCONIIFORMES

Family ACCIPITRIDAE

Genus ***Elanus*** Savigny, 1809

45. 124. ***Elanus caeruleus vociferus*** (Latham, 1790)

1790. *Falco vociferus* Latham, *Index Orn.*, 1 : 46.

**Type locality** : Coromandel coast, India.

**Common name** : Black-shouldered Kite.

**Remarks** : Common, resident breeder.

Genus ***Milvus*** Lacépède, 1809

46. 133. ***Milvus migrans govinda*** (Sykes, 1832)

1832. *Milvus Govinda* Sykes, *Proc. Zool. Soc. London* : 81.

**Type locality** : Dukhun, India.

**Common name** : Pariah Kite.

**Remarks** : Common, resident breeder.

Genus ***Haliastur*** Selby, 1840

47. 135. ***Haliastur indus*** (Boddaert, 1783)

1783. *Falco Indus* Boddaert, *Table Pl. enlum.* : 25.

**Type locality** : Pondicherry.

**Common name** : Brahminy Kite.

**Remarks** : Uncommon, local migrant.

Genus ***Accipiter*** Brisson, 1760

48. 138. ***Accipiter badius dussumieri*** (Temminck, 1824)

1824. *Falco dussumeri* Temminck, *Pl. Col. Livr.* 52, text to pl. 308 (adult), pl. 336 (immature).

**Type locality** : India, type from Bengal.

**Common name** : Shikra.

**Remarks** : Uncommon, local migrant.

Genus ***Butastur*** Hodgson, 1843

49. 157. ***Butastus teesa*** (Franklin, 1831)

1831. *Circus Teesa* Franklin, *Proc. Zool. Soc. London*, pt 1 : 115.

**Type locality** : Farther India (= Ganges-Nerbudda).

**Common name** : White-eyed Buzzard.

**Remarks** : Uncommon, local migrant. Seen infrequently along the cultivation in catchment area.

Genus ***Spizaetus*** Vieillot, 1816

50. 161. ***Spizaetus cirrahtus*** (Gmelin, 1788)

1788. *Falco cirrhatus* Gmelin, *Syst. Nat.*, 1(1) : 275.

**Type locality** : Ceylon.

**Common name** : Changeable Hawk-Eagle.

**Remarks** : Uncommon, local migrant. Seen infrequently along the cultivation in catchment area.

Genus ***Aquila*** Brisson, 1760

51. 168. ***Aquila rapax vindhiana*** (Franklin, 1831)

1831. *Aquila Vindhiana* Franklin, *Proc. Zool. Soc. London*, pt 1 : 114.

**Type locality** : Farther India (= Ganges-Nerbudda).

**Common name** : Tawny Eagle.

**Remarks** : Uncommon, local migrant. Seen infrequently along the cultivation in catchment area.

52. 171. ***Aquila pomarina hastata*** (Lesson, 1834)

1834. *Morphnus hastata* Lesson, in Belanger, *Voy. Ind-Orient, Zool.* : 217.

**Type locality** : Bengal.

**Common name** : Lesser Spotted Eagle.

**Remarks** : Rare, local migrant. Twice sighted in winters of 1999 and 2002.

Genus ***Gyps*** Savingy, 1809

53. 185. ***Gyps bengalensis*** (Gmelin, 1788)

1788. *Vulture bengalensis* Gmelin, *Syst. Nat.*, 1(1) : 245.

**Type locality** : Bengal.

**Common name** : Indian White-back Vulture.

**Remarks** : Uncommon. Resident breeder, now possibly locally extinct. From 1995 to 1998 this species was frequently sighted in the catchment area of the Pocharam Lake. It has been recorded breeding in the forest near Komatpally in Pocharam Wildlife Sanctuary till 2001, since then there sightings have become rare and the nests are deserted. Not sighted in catchment of Pocharam Lake since 2002.

**Status** : Critically Endangered and Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Genus ***Neophron*** Savingy, 1809

54. 187. ***Neophron percnopterus ginginianus*** (Latham, 1790)

1790. *Vulture ginginianus* Latham, *Index Orn.*, 1 : 7.

**Type locality** : Gingee, Coromandel.

**Common name** : Egyptian Vulture.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the catchment area of Pocharam Lake.

Genus ***Circus*** Lacepede, 1799

55. 190. ***Circus macrourus*** (S.G. Gmelin, 1770)

1770. *Falco macrourus* S.G. Gemlin, *Reise d. Russl.* Th. 1 : 48.

**Type locality** : Voronezh, southern Russia.

**Common name** : Pallid Harrier.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the catchment area of Pocharam Lake.

**Status** : Vulnerable (Collar *et al.*, 1994).

56. 193. ***Circus aeruginosus*** (Linnaeus, 1758)

1758. *Falco aeruginosus* Linnaeus, *Syst. Nat. ed.* 10, 1 : 91.

**Type locality** : Sweden.

**Common name** : Marsh Harrier.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the catchment area of Pocharam Lake.

Family PANDIONIDAE

Genus ***Pandion*** Savingy, 1809

57. 203. ***Pandion haliaetus*** Linnaeus, 1758

1758. *Falco tinnunculus* Linnaeus, *Syst. Nat., ed.* 10, 1 : 91.

**Type locality** : Sweden.

**Common name** : Osprey.

**Remarks** : Rare, winter migrant. Once sighted in December 2001 on Pocharam Lake.

Family FALCONIDAE

Genus ***Falco*** Linnaeus, 1758

58. 222. ***Falco tinnunculus* Linnaeus,** 1758

1758. *Falco tinnunculus* Linnaeus, *Syst. Nat., ed.* 10, **1** : 90.

**Type locality** : Sweden.

**Common name** : Kestrel.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the catchment area of Pocharam Lake.

Order GALLIFORMES

Family PHASIANIDAE

Genus ***Francolinus*** Stephens, 1819

59. 246. ***Francolinus pondcerianus*** (Gmelin, 1789)

1789. *Tetrao pondicerianus* Gmelin, *Syst. Nat.* **1**(2) : 760.

**Type locality** : Pondicherry, India.

**Common name** : Grey Francolin.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

Genus ***Coturnix*** Bonnaterre, 1791

60. 252. ***Coturnix coromandelica*** (Gmelin, 1789)

1789. *Tetrao coromandelicus* Gmelin, *Syst. Nat.* **1**(2) : 764.

**Type locality** : Coromandel Coast.

**Common name** : Rain Quail.

**Remarks** : Uncommon, local migrant. Infrequently sighted along the fringe and in agriculture fields in the catchment area of Pocharam Lake.

Genus ***Perdicula*** Hodgson, 1837

61. 255. ***Perdicula asiatica*** (Latham, 1790)

1790. *Perdix asiatica* Latham, *Index Orn.* **2** : 649.

**Type locality** : Mahratta region, India.

**Common name** : Jungle Bush Quail.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

### 62. 260. ***Perdicula argoondah*** (Sykes, 1832)

1832. *Coturnix Argoondah* Sykes, *Proc. Comm. Zool. Soc. Lond.* : 153.

**Type locality** : Dukhun, India.

**Common name** : Rock Bush Quail.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

## Genus ***Pavo*** Linnaeus, 1758

### 63. 311. ***Pavo cristatus*** Linnaeus, 1758

1758. *Pavo cristatus* Linnaeus, *Syst. Nat., ed.* 10, **1** : 156.

**Type locality** : India orientali, Zeylona (= India).

**Common name** : Indian Peafowl.

**Remarks** : Common, resident breeder. Common in Pochamrallu Deer Breeding Centre where it has been noted to breed.

## Order GRUIFORMES

## Family TURNICIDAE

## Genus ***Turnix*** Bonnaterre, 1791

### 64. 314. ***Turnix tanki*** Blyth, 1843

1843. *Turnix tanki* Blyth, *Jour. Asiat. Soc. Bengal,* **12** : 180.

**Type locality** : No Locality = Bengal, based on drawing by Buchanan Hamilton.

**Common name** : Yellow-legged Button Quail.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

### 65. 318. ***Turnix suscitator taigoor*** (Sykes, 1832)

1832. *Hemipodius taigoor* Sykes, *Proc. Comm. Zool. Soc. London* : 155.

**Type locality** : Dukhun, India.

**Common name** : Common Bustard-Quail.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

Family RALLIDAE

Genus ***Amaurornis*** Reichenbach, 1853

66. 343, 344. ***Amaurornis phoenicurus*** (Pennant, 1769)

1769. *Gallinula phoenicurus* Pennant, *Indian Zool.*, : 10, pl. 9.

**Type locality** : Ceylon.

**Common name** : Whitebreasted Waterhen.

**Remarks** : Uncommon, resident breeder. Common along the canal downstream the dam.

Genus ***Gallinula*** Brisson, 1760

67. 347. ***Gallinula chloropus*** Blyth, 1842

1842. *Gallinula choloropus* Blyth, *Jour. Asiat. Soc. Bengal,* **11** : 887.

**Type locality** : Calcutta.

**Common name** : Common Moorhen.

**Remarks** : Uncommon, local migrant. Infrequently sighted along the canal downstream the dam and adjacent paddy fields.

Genus ***Porphyrio*** Brisson, 1760

68. 349. ***Porphyrio porphyrio*** (Latham, 1801)

1801. *Gallinula poliocephala* Latham, *Index Orn., Suppl.* : 68.

**Type locality** : India.

**Common name** : Purple Moorhen.

**Remarks** : Uncommon, local migrant. Infrequently sighted along the canal downstream the dam and adjacent paddy fields.

Genus ***Fulica*** Linnaeus, 1758

69. 350. ***Fulica atra*** Linnaeus, 1758

1758. *Fulica atra* Linnaeus, *Syst. Nat., ed.* 10, **1** : 152.

**Type locality** : Europe, restricted to Sweden.

**Common name** : Coot.

**Remarks** : Uncommon, local migrant. Numbers augmented in winter due to winter migrating individuals.

Order CHARADRIIFORMES

Family JACANIDAE

Genus ***Hydrophasianus*** Wagler, 1832

70. 358. ***Hydrophasianus chirurgus*** (Scopoli, 1786)

1786. *Tringa chirurgus* Scopoli, *Del. Flor. et Faun. Insubr., fasc.*, **2** : 92.

**Type locality** : 'In nova Guiana' (= Luzon).

**Common name** : Pheasant-tailed Jacana.

**Remarks** : Uncommon, local migrant. Infrequently sighted along the canal downstream the dam and shallow weed-infested edges of the Pocharam Lake.

Genus ***Metopidius*** Wagler, 1832

71. 359. ***Metopidius indicus*** (Latham, 1790)

1790. *Perra indica* Latham, *Index Orn.*, **2** : 765.

**Type locality** : India.

**Common name** : Bronze-winged Jacana.

**Remarks** : Uncommon, local migrant. Infrequently sighted along the canal downstream the dam and shallow weed-infested edges of the Pocharam Lake.

Family ROSTRATULIDAE

Genus ***Rostratula*** Vieillot, 1816

72. 429. ***Rostratula benghalensis*** (Linnaeus, 1758)

1758. *Rallus benghalensis* Linnaeus, *Syst. Nat. ed.* 10, **1** : 153.

**Type locality** : Asia.

**Common name** : Painted Snipe.

**Remarks** : Uncommon, local migrant. Infrequently sighted along shallow weed-infested edges of the Pocharam Lake.

Family CHARADRIIDAE

Genus ***Vanellus*** Brisson, 1760

73. 366. ***Vanellus indicus*** (Boddaert, 1783)

1783. *Tringa indica* Boddaert, *Table Pl. enlum.*, : 50.

**Type locality** : Goa.

**Common name** : Red-wattled Lapwing.

**Remarks** : Common, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

74. 370. ***Vanellus malabaricus*** (Boddaert, 1783)

1783. *Charadrius malabaricus* Boddaert, *Table Pl. enlum.*, : 53.

**Type locality** : Malabar Coast.

**Common name** : Yellow-wattled Lapwing.

**Remarks** : Uncommon, resident breeder. Common in the fringe of agriculture fields in the catchment area of Pocharam Lake.

Genus ***Charadrius*** Linnaeus, 1758

75. 380. ***Charadrius dubius jerdoni*** Legge, 1880

1880. *Aegialitis jerdoni* Legge, *Proc. Zool. Soc. London* : 39.

**Type locality** : Ceylon and middle India.

**Common name** : Little Ringed Plover.

**Remarks** : Common, local migrant. Common in winters along the shallow fringes of Pocharam Lake.

76. 381. ***Charadrius alexandrinus*** Linnaeus, 1758

1758. *Charadrius alexandrinus* Linnaeus, *Syst. Nat., ed.* 10, **1** : 150.

**Type locality** : Egypt.

**Common name** : Kentish Plover.

**Remarks** : Common, winter migrant. Common along the shallow fringes of Pocharam Lake.

Genus ***Numenius*** Brisson, 1760

77. 387. ***Numenius arquata orientalis*** (C.L. Brehm, 1831)

1831. *Numenius orientalis* C.L. Brehm, *Handb. Naturg. Vog. Deutschl.*, : 610.

**Type locality** : East Indies.

**Common name** : Curlew.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in winters along the shallow fringes of Pocharam Lake.

Genus ***Limosa*** Brisson, 1760

78. 389. ***Limosa limosa*** (Linnaeus, 1758)

1758. *Scolopax limosa* Linnaeus, *Syst. Nat., ed.*, 10, 1 : 147.

**Type locality** : In Europa (= Sweden).

**Common name** : Black-tailed Godwit.

**Remarks** : Common, winter migrant. Frequently sighted in paddy fields and shallow fringes of Pocharam Lake.

Genus ***Tringa*** Linnaeus, 1758

79. 393, 394. ***Tringa totanus*** (Linnaeus, 1758)

1758. *Scolopax totanus* Linnaeus, *Syst. Nat., ed.*, 10, 1 : 145.

**Type locality** : In Europa (= Sweden).

**Common name** : Common Redshank.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in winters along the shallow fringes of Pocharam Lake.

80. 395. ***Tringa stagnatilis*** (Bechstein, 1803)

1803. *Totanus stagnatilis* Bechstein, *Orn. Taschenb. Deutschl.*, **2** : 292, pl. 29.

**Type locality** : Germany.

**Common name** : Marsh Sandpiper.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in winters along the shallow fringes of Pocharam Lake and inundated paddy fields in the cachment area.

81. 396. ***Tringa nebularia*** (Gunnerus, 1767)

1767. *Scolopax nebularia* Gunnerus, *in Leem, Beskr. Finm. Lapper*, : 251.

**Type locality** : District of Trondhjem, Norway.

**Common name** : Greenshank.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in winters along the shallow fringes of Pocharam Lake.

### 82. 397. ***Tringa ochropus*** Linnaeus, 1758

1758. *Tringa ocrophus* Linnaeus, *Syst. Nat., ed.,* 10, 1 : 149 9.

**Type locality** : In Europa (= Sweden).

**Common name** : Green Sandpiper.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in winters along the shallow fringes of Pocharam Lake.

### 83. 398. ***Tringa glareola*** Linnaeus, 1758

1758. *Tringa glareola* Linnaeus, *Syst. Nat., ed.,* 10, 1 : 149.

**Type locality** : In Europa (= Sweden).

**Common name** : Wood Sandpiper.

**Remarks** : Rare, winter migrant. Sighted on two occasions in 2002 winter near Burgupally side of Pocharam Lake.

## Genus ***Actitis*** Illiger, 1811

### 84. 401. ***Actitis hypoleucos*** (Linnaeus, 1758)

1758. *Tringa hypoleucos* Linnaeus, *Syst. Nat., ed.* 10, 1 : 149.

**Type locality** : In Europa (= Sweden).

**Common name** : Common Sandpiper.

**Remarks** : Common, winter migrant. Frequently sighted in winters along the shallow fringes of Pocharam Lake.

## Genus ***Calidris*** Merrem, 1804

### 85. 416. ***Calidris minuta*** (Leisler, 1812)

1812. *Tringa minuta* Leisler, *Nachträge zu Bechstein's Naturg. Deutschl.,* : 74.

**Type locality** : Hanau am Main, Germany.

**Common name** : Little Stint.

**Remarks** : Common, local migrant. Frequently sighted along the shallow fringes of Pocharam Lake, numbers augmented in winter.

86. 417. ***Calidris temminckii*** (Leisler, 1812)

1812. *Tringa temminckii* Leisler, *Nachträge zu Bechstein's Naturg. Deutschl.*, : 64.

**Type locality** : Hanau am Main, Germany.

**Common name** : Temminck's Stint.

**Remarks** : Common, winter migrant. Frequently sighted along the shallow fringes of Pocharam Lake.

Genus ***Philomachus*** Merrem, 1804

87. 426. ***Philomachus pugnax*** (Linnaeus, 1758)

1758. *Tringa Pugnax* Linnaeus, *Syst. Nat. ed.* 10, **1** : 148.

**Type locality** : In Europa minus boreali (= southern Sweden).

**Common name** : Ruff.

**Remarks** : Uncommon, winter migrant. Infrequently sighted along the shallow fringes of Pocharam Lake and inundated paddies in the catchment area.

Family RECURVIROSTRIDAE

Genus ***Himantopus*** Brisson, 1760

88. 430. ***Himantopus himantopus*** (Linnaeus, 1758)

1758. *Charadrius himantopus* Linnaeus, *Syst. Nat., ed.* 10, **1** : 151.

**Type locality** : Southern Europe.

**Common name** : Black-winged Stilt.

**Remarks** : Common, local migrant. Frequently sighted along the shallow fringes of Pocharam Lake and inundated paddies in the catchment area, numbers augmented in winters.

Family GLAREOLIDAE

Genus ***Glareola*** Brisson, 1760

89. 444. ***Glareola lactea*** Temminck, 1820

1820. *Glareola lactea* Temminck, *Man. D'Orn., ed.* 2, **2** : 503.

**Type locality** : Bengal.

**Common name** : Small Indian Pratincole.

**Remarks** : Common, winter migrant. Frequently sighted along the shallow fringes and lakebed of Pocharam Lake.

Family LARIDAE

Genus ***Larus*** Linnaeus, 1758

90. 454. ***Larus brunnicephalus*** Jerdon, 1840

1840. *Larus brunnicephalus* Jerdon, *Madrs Jour. Lit. and Sci.*, **12** : 225.

**Type locality** : West Coast of Indian Peninsula.

**Common name** : Brown-headed Gull.

**Remarks** : Rare, winter migrant. Sighted on a few occasions in 2002 and 2004.

Genus ***Chlidonias*** Rafinesque, 1822

91. 458. ***Chlidonias hybrida*** (Stephens, 1826)

1826. *Viralva indica* Stephens, *in Shaw's Gen. Zool.* **13**(1) : 169.

**Type locality** : Cawnpore, India.

**Common name** : Whiskered Tern.

**Remarks** : Rare, winter migrant. Sighted on a few occasions in 2001, 2003 and 2004.

Genus ***Sterna*** Linnaeus, 1758

92. 463. ***Sterna aurantia*** J.E. Gray, 1831

1831. *Sterna aurantia* J.E. Gray, *in* Hardwikce's Ill. *Ind. Zool.*, **1**(5), pl. 69, f. 2.

**Type locality** : India.

**Common name** : River Tern.

**Remarks** : Common, local migrant. Frequently sighted.

Family RYNCHOPIDAE

Genus ***Rynchops*** Linnaeus, 1758

93. 484. ***Rynchops albicollis*** Swainson, 1838

1838. *Rynchops albicollis* Swainson, *Anim., in Menag.*, : 360.

**Type locality** : India.

**Common name** : Indian Skimmer.

**Remarks** : Rare, single record (Scott, 1989).

**Status** : Vulnerable (Collar *et al.*, 1994; Birdlife International, 2001).

Order COLUMBIFORMES

Family PTEROCLIDIDAE

Genus ***Pterocles*** Temminck, 1815

94. 487. ***Pterocles exustus erlangeri*** Neumann, 1909

1909. *Pteroclurus exustus erlangeri* Neumann, *Orn. Monatsb.*, **17** : 154.

**Type locality** : El Hota, Lahej, southern Arabia.

**Common name** : Chestnut-bellied Sandgrouse.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the lakbed area.

Family COLUMBIDAE

Genus ***Columba*** Linnaeus, 1758

95. 517. ***Columba livia intermedia*** (Strickland, 1844)

1844. *Columba intermedia* Strickland, *Ann. and Mag. Nat. Hist.*, **13** : 39.

**Type locality** : Calcutta, India.

**Common name** : Blue Rock Pigeon.

**Remarks** : Common, resident breeder. Frequently sighted feeding in small flocks in the lakebed area.

Genus ***Streptopelia*** Bonaparte, 1855

96. 531. ***Streptopelia orientalis meena*** (Sykes, 1833)

1833. *Columba meena* Sykes, *Proc. Comm. Zool. Soc. London*, pt. **2** : 149.

**Type locality** : Dukhun, India.

**Common name** : Rufous Turtle Dove.

**Remarks** : Uncommon, local migrant. Infrequently sighted feeding in the lakebed area and agriculture fields in catchment area.

97. 534. ***Streptopelia decaocto*** (Frivaldszky, 1838)

1838. *Columba risoria* L. var decaocto Frivaldszky, 1834-36 *K. Magyar Tudos Târsaság Evkönyvi*, **3** : 183, pl. 8.

**Type locality** : Turkey.

**Common name** : Eurasian Collared Dove.

**Remarks** : Common, local migrant. Infrequently sighted feeding in the lakebed area and agriculture fields in catchment area.

### 98. 535. ***Streptopelia tranquebarica*** (Hermann, 1804)

1804. *Columba tranquebarica* Hermann, *Obs. Zool.*, : 200.

**Type locality** : Tranquebar, India.

**Common name** : Red Collared Dove.

**Remarks** : Uncommon, local migrant. Infrequently sighted feeding in the lakebed area and agriculture fields in catchment area.

### 99. 537. ***Streptopelia chinensis suratensis*** (Gmelin, 1789)

1789. *Columba suratensis* Gmelin, *Syst. Nat.*, I(2) : 778.

**Type locality** : Surat, Gulf of Cambay, India.

**Common name** : Spotted Dove.

**Remarks** : Common, resident breeder. Frequently sighted feeding in the lakebed area and agriculture fields in catchment area.

### 100. 541. ***Streptopelia senegalensis cambayensis*** (Gmelin, 1789)

1789. *Columba cambayensis* Gmelin, *Syst. Nat.*, I(2) : 779.

**Type locality** : 'Cambaya', i. e., Gulf of Cambay, northwestern India.

**Common name** : Little Brown Dove.

**Remarks** : Uncommon, local migrant. Infrequently sighted feeding in the lakebed area and agriculture fields in catchment area.

## Order PSITTACIFORMES

## Family PSITTACIDAE

## Genus ***Psittacula*** Cuvier, 1800

### 101. 550. ***Psittacula krameri manillensis*** (Bechstein, 1800)

1800. *Psittacus manillensis* Bechstein, *Stubenvögel, 2nd Gotha ed.*, 612.

**Type locality** : Ceylon.

**Common name** : Rose-ringed Parakeet.

**Remarks** : Common, resident breeder. Frequently sighted feeding in the lakebed area and agriculture fields in catchment area.

Order CUCULIFORMES

Family CUCULIDAE

Genus ***Clamator*** Kaup, 1829

102. 571. ***Clamator jacobinus*** (Boddaert, 1783)

1783. *Cuculus jacobinus* Boddaert, *Table Pl. enlum* : 53.

**Type locality** : Coromandel Coast.

**Common name** : Pied Crested Cuckoo.

**Remarks** : Uncommon, local migrant. Infrequently sighted in village groves and scrub in catchment area.

Genus ***Hierococcyx*** Muller, 1842

103. 573. ***Hierococcyx varius*** (Vahl, 1797)

1797. *Cuculus varius* Vahl, *Skriv. Naturhist. -Selsk., Kjobenhavn,* 4(1) : 60.

**Type locality** : Tranquebar.

**Common name** : Brainfever Bird.

**Remarks** : Common, local migrant. Frequently sighted and heard in village groves and agriculture fields in catchment area.

Genus ***Eudynamis*** Vigors & Horsfield, 1826

104. 590. ***Eudynamys scolopacea*** (Linnaeus, 1758)

1758. *Cuculus scolopaceus* Linnaeus, *Syst. Nat., ed.* 10,1 : 111.

**Type locality** : Malabar.

**Common name** : Koel.

**Remarks** : Common, resident breeder. Frequently sighted and heard in village groves and agriculture fields in catchment area.

Genus ***Centropus*** Illiger, 1811

105. 600. ***Centropus sinensis*** (Stephens, 1815)

1815. *Polophilus sinensis* Stephens, in *Shaw's Gen. Zool.*, 9(1) : 51.

**Type locality** : 'Said to inhabit China' (= Ning Po, China).

**Common name** : Crow-Pheasant or Coucal.

**Remarks** : Common, resident breeder. Frequently sighted and heard in village groves and agriculture fields in catchment area.

Order STRIGIFORMES

Family TYTONIDAE

Genus ***Tyto*** Billberg, 1828

106. 606. ***Tyto alba stertens*** Hartert, 1929

1929. *Tyto alba stertens* Hartert, *Nov. Zool.*, **35** : 98.

**Type locality** : Cachar.

**Common name** : Barn Owl.

**Remarks** : Uncommon, local migrant. A few individuals frequently sighted near dilapidated Rest House and near the Pocharam dam.

Family STRIGIDAE

Genus ***Otus*** Pennant, 1769

107. 623. ***Otus bakkamoena*** Pennant, 1769

1769. *Otus bakkamoena* Pennant, *Ind. Zool.*, : 3, pl. 3.

**Type locality** : Ceylon.

**Common name** : Collared Scops Owl.

**Remarks** : Uncommon, resident breeder. A few individuals frequently sighted in orchard downstream the Pocharam dam.

Genus ***Bubo*** Duméril, 1806

108. 627. ***Bubo bubo bengalensis*** (Franklin, 1831)

1831. *Otus bengalensis* Franklin, *Proc. Comm. Zool. Soc. London* : 115.

**Type locality** : (The Ganges between Calcutta and Benares and in the Vindhyan Hills between the latter place and Gurra Mundela).

**Common name** : Eurasian Eagle-Owl.

**Remarks** : Rare, local migrant. Sighted on a few occasions in rocky escapment downstream the dam.

Genus ***Athene*** Boie, 1822

109. 652. ***Athene brama*** (Temminck, 1821)

1821. *Strix brama* Temminck, *Pl. col., livr.* 12, pl. 68.

**Type locality** : (Pondicherry and west coast of India).

**Common name** : Spotted Owlet.

**Remarks** : Common, resident breeder. Frequently sighted and heard in orchard downstream the Pocharam dam and in the village groves and agriculture fields in the catchment area.

Order CAPRIMULGIFORMES

Family CAPRIMULGIDAE

Genus ***Caprimulgus*** Linnaeus, 1758

110. 680. ***Caprimulgus asiaticus*** Latham, 1790

1790. *Caprimulgus asiaticus* Latham, *Index Orn.*, **2** : 588.

**Type locality** : Bombay, India.

**Common name** : Common Indian Nightjar.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in Pochamrallu Deer Breeding Centre and in lakebed area.

111. 682. ***Caprimulgus affinis monticolus*** (Franklin, 1831)

1831. *Caprimulgus monticolus* Franklin, *Proc. Comm. Zool. Soc. London* : 116.

**Type locality** : Ganges between Calcutta and Benares.

**Common name** : Franklin's Nightjar.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in Pochamrallu Deer Breeding Centre and in lakebed area.

Order APODIFORMES

Family APODIDAE

Genus ***Apus*** Scopoli, 1777

112. 703. ***Apus affinis*** (J. E. Gray, 1830)

1830. *Cypselus affinis* J. E. Gray, in Gray & Hardwicke's Ill. *Ind. Zool.* 1(2), pl. 35, f. 2.

**Type locality** : No locality (= Ganges).

**Common name** : House Swift.

**Remarks** : Common, resident breeder. Frequently sighted, nests under the bridge downstream the Pocharam dam.

Genus ***Cypsiurus*** Lesson, 1843

113. 707. ***Cypsiurus parvus balasiensis*** (J. E. Gray, 1829)

1829. *Cyp. (selus) Balasiensis* J.E. Gray, in *Griffith's Anim. Kingdom,* 7 : 60.

**Type locality** : India (restricted to Calcutta).

**Common name** : Palm Swift.

**Remarks** : Uncommon, local migrant. Infrequently sighted in Pochamrallu Deer Breeding Centre and in lakebed area.

Family HEMIPROCNIDAE

Genus ***Hemiprocne*** Nitzsch, 1829

114. 709. ***Hemiprocne longipennis coronata*** (Tickell, 1833)

1833. *Hirundo Coronata* Tickell, *Jour. Asiat. Soc. Bengal,* **2** : 580.

**Type locality** : Jungles of Borbhum and Dholbhum.

**Common name** : Crested Tree Swift.

**Remarks** : Common, local migrant. Frequently sighted in the eastern lakebed area near Burgupally.

Order CORACIIFORMES

Family ALCEDINIDE

Genus ***Ceryle*** Boie, 1828

115. 719. ***Ceryle rudis leucomelanura*** (Reichenbach, 1851)

1851. *Ceryle leucomalanura* Reichenbach, *Handb. Spec. Orn.* : 21, pl. CCIX b, f. 3488.

**Type locality** : Ceylon.

**Common name** : Lesser Pied Kingfisher.

**Remarks** : Common, resident breeder. Frequently sighted near Pocharam dam.

Genus ***Alcedo*** Linnaeus, 1758

116. 723. ***Alcedo atthis bengalensis*** Gmelin, 1788

1788. *Alcedo bengalensis* Gmelin, *Syst. Nat.* 1(1) : 450.

**Type locality** : Bengala.

**Common name** : Common Kingfisher.

**Remarks** : Uncommon, resident breeder. Frequently sighted near and downstream the Pocharam Dam.

Genus ***Halcyon*** Swainson, 1821

117. 736. ***Halcyon smyrnensis fusca*** (Boddaert, 1783)

1783. *Alcedo fusca* Boddaert, *Table Pl. enlum.* : 54.

**Type locality** : Malabar Coast.

**Common name** : White-breasted Kingfisher.

**Remarks** : Common, resident breeder. Frequently sighted on the fringe of the lake, in the lakebed area, village groves and agriculture fields in the catchment area.

Family MEROPIDAE

Genus ***Merops*** Linnaeus, 1758

118. 748. ***Merops philippinus*** Linne, 1766

1766. *Merops philippinus* Linne, *Syst. Nat. ed.* 12, 1 : 183 errata at the end of volume; name for Merops 5th sp.

**Type locality** : Philippine Islands.

**Common name** : Blue-tailed Bee-eater.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the lakebed area and also in agriculture fields and scrub forests in the catchment area.

119. 750. ***Merops orientalis*** Latham, 1801

1801. *Merops orientalis* Latham, Index *Orn. Suppl.*, : xxxiii.

**Type locality** : India (= Pondichéry).

**Common name** : Small Bee-eater.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area and also in agriculture fields and scrub forests in the catchment area.

Family CORACIIDAE

Genus ***Coracias*** Linnaeus, 1758

120. 756. ***Coracias bengalensis indica*** (Linnaeus, 1766)

1766. *Coracias indica* Linnaeus, *Syst. Nat., ed.* 12, **1** : 159.

**Type locality** : East Indies (= Ceylon).

**Common name** : Indian Roller.

**Remarks** : Common, resident breeder. Frequently sighted in agriculture fields and scrub forests in the catchment area and occasionally in the lakebed area.

Family UPUPIDAE

Genus ***Upupa*** Linnaeus, 1758

121. 763. ***Upupa epops ceylonensis*** Reichenbach, 1853

1853. *Upupa ceylonensis* Reichenbach, *Handb. spec. Orn., Scansoriae:* 320, pl. DXCV, f. 4036.

**Type locality** : Ceylon.

**Common name** : Common Hoopoe.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area, agriculture fields and scrub forests in the catchment area.

Family BUCEROTIDAE

Genus ***Ocyceros*** Hume, 1873

122. 767. ***Ocyceros birostris*** (Scopoli, 1786)

1786. *Buceros birostris* Scopoli, Del. *Flor. et Faun. Insubr., fasc.* **2** : 87.

**Type locality** : Coromandel, India.

**Common name** : Indian Grey Hornbill.

**Remarks** : Common, resident breeder. Frequently sighted in the village groves in the catchment area.

Order PICIFORMES

Family CAPITONIDAE

Genus ***Megalaima*** G.R. Gray, 1842

123. 785. ***Megalaima zeylanica inornata*** (Walden, 1870)

1870. *Megaliama inornata* Walden, *Ann. Mag. Nat. Hist.*, 5(4) : 219.

**Type locality** : Malabar.

**Common name** : Brown-headed Barbet.

**Remarks** : Uncommon, resident breeder. Infrequently sighted or heard in the village groves and orchards in the catchment area.

124. 792. ***Megalaima haemacephala indica*** (Latham, 1788)

1788. *Bucco indicus* Latham, *Index Orn.*, 1(1) : 408.

**Type locality** : Ceylon.

**Common name** : Coppersmith Barbet.

**Remarks** : Common, resident breeder. Frequently heard and sighted in the village groves and orchards in the catchment area.

Family PICIDAE

Genus ***Dinopium*** Rafinesque, 1814

125. 819. ***Dinopium benghalense*** (Linnaeus, 1758)

1758. *Picus benghalensis* Linnaeus, *Syst. Nat., ed.* 10, 1 : 113.

**Type locality** : Chandernagor.

**Common name** : Lesser Golden-backed Woodpecker.

**Remarks** : Uncommon, resident breeder. Infrequently heard and sighted in the village groves and orchards in the catchment area.

Family ALAUDIDAE

Genus ***Mirafra*** Horsfield, 1821

126. 872. ***Mirafra cantillans*** Blyth, 1845

1845. *Mirafra cantillans* Blyth, *Jour. Asiat. Soc. Bengal,* **13** : 960.

**Type locality** : Bengal.

**Common name** : Singing Bush-Lark.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 127. 874. ***Mirafra affinis*** Jerdon, 1845

1845. *Mirafra affinis* Jerdon, *Madras Jour. Lit. and Sci.*, **13**(2) : 136.

**Type locality** : Goomsoor.

**Common name** : Jerdon's Bush-Lark.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 128. 877. ***Mirafra erythroptera*** Blyth, 1845

1845. *Mirafra erythroptera* Blyth, *Jour. Asiat. Soc. Bengal,* **13** : 958.

**Type locality** : Northern portion of the peninsula of India (= northern Deccan).

**Common name** : Red-winged Bush-Lark.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

## Genus ***Eremopterix*** Kaup, 1836

### 129. 878. ***Eremopterix grisea*** (Scopoli, 1786)

1786. *Alauda grisea* Scopoli, *Del. Flor. et Faun. Insubr.*, **2** : 95.

**Type locality** : Gingee, South Arcot District, India.

**Common name** : Ashy-crowned Sparrow-Lark.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

## Genus ***Ammomanes*** Cabanis, 1851

### 130. 882. ***Ammomanes phoenicurus*** (Franklin, 1831)

1831. *Mirafra phoenicurus* Franklin, *Proc. Zool. Soc. London* : 119.

**Type locality** : Between Calcutta and Benares.

**Common name** : Rufous-tailed Finch-Lark.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

Genus ***Calandrella*** Kaup, 1829

131. 886. ***Calandrella brachydactyla dukhunensis*** (Sykes, 1832)

1832. *Alauda dukhunensis* Sykes, *Proc. Zool. Soc. London* : 93.

**Type locality** : Dukhun.

**Common name** : Short-toed Lark.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

Genus ***Galerida*** Boie, 1828

132. 902. ***Galerida deva*** (Sykes, 1832)

1832. *Alauda deva* Sykes, *Proc. Zool. Soc. London* : 92.

**Type locality** : Dukhun.

**Common name** : Sykes's Crested Lark.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

Genus ***Alauda*** Linnaeus, 1758

133. 907. ***Alauda gulgula*** **Franklin**, 1831

1831. *Alauda gulgula* Franklin, *Proc. Zool. Soc. London* : 119.

**Type locality** : The Ganges between Calcutta and Benares.

**Common name** : Eastern Skylark.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

Family HIRUNDINIDAE

Genus ***Hirundo*** Linnaeus, 1758

134. 914. ***Hirundo concolor*** Sykes, 1833

1833. *Hirundo concolor* Sykes, *Proc. Zool. Soc. London* : 83.

**Type locality** : Dukhun.

**Common name** : Dusky Crag-Martin.

**Remarks** : Common, local migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 135. 917. ***Hirundo rustica gutturalis*** (Scopoli, 1786)

1786. *Hirundo (gutturalis)* Scopoli, *Del. Flor. et Faun. Insubr.*, **2** : 96.

**Type locality** : New Guinea (*errore*, Panay = Philippines).

**Common name** : Common Swallow.

**Remarks** : Common, winter migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 136. 921. ***Hirundo smithii filifera*** (Stephens, 1825)

1825. *H.? (irundo) filifera* Stephens, in *Shaw's Gen. Zool.*, **13** : 78.

**Type locality** : India.

**Common name** : Wire-tailed Swallow.

**Remarks** : Common, local migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 137. 927. ***Hirundo daurica erythropygia*** (Sykes, 1832)

1832. *Hirundo erythropygia* Sykes, *Proc. Zool. Soc. London* : 83.

**Type locality** : Poona, Dukhun.

**Common name** : Red-rumped Swallow.

**Remarks** : Common, local migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

## Family MOTACILLIDAE

## Genus ***Anthus*** Bechstein, 1805

### 138. 1854. ***Anthus trivialis*** (Linneaus, 1758)

1758. *Alauda trivialis* Linnaeus, *Syst. Nat.*, *ed.* 10, **1** : 166.

**Type locality** : Sweden.

**Common name** : Eurasian Tree Pipit.

**Remarks** : Uncommon, winter visitor. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 139. 1863. ***Anthus godlewskii*** (Taczanowski, 1876)

1876. *Agrodroma godlewskii* Taczanowski, *Bull. Soc. Zool. France* : 158.

**Type locality** : Argun river, south Dauria.

**Common name** : Blyth's Pipit.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the lakebed area and in agriculture fields in the catchment area.

## Genus ***Motacilla*** Linnaeus, 1758

### 140. 1875. ***Motacilla flava thunbergi*** (Billberg, 1828)

1828. *Motacilla Thunbergi* Billberg, *Syn.Faun. Scand.*, 1(2) : 50.

**Type locality** : Lapland.

**Common name** : Yellow Wagtail.

**Remarks** : Uncommon, winter migrant. Infrequently sighted along the fringes of the lake, canal and adjacent agriculture fields in the catchment area.

### 141. 1881. ***Motacilla citreola*** Pallas, 1776

1776. *Motacilla citreola* Pallas, *Reise Russ. Reichs.*, **3** : 696.

**Type locality** : Siberia.

**Common name** : Citrine Wagtail.

**Remarks** : Uncommon, winter migrant. Infrequently sighted along the fringes of the lake, canal and adjacent agriculture fields in the catchment area.

### 142. 1884. ***Motacilla caspica*** (Gmelin, 1774)

1774. *Parus caspicus* Gmelin, *Reise d. Russ.* 3, pl. 20, fig. **2** : 104.

**Type locality** : Enzeli on the southern shore of the Caspain Sea.

**Common name** : Grey Wagtail.

**Remarks** : Common, winter migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

### 143. 1885. ***Motacilla alba dukhunensis*** (Sykes, 1832)

1832. *Motacilla Dukhunensis* Sykes, *Proc. Zool. Soc. London* : 91.

**Type locality** : Dukhun.

**Common name** : White Wagtail.

**Remarks** : Common, winter migrant. Frequently sighted along the fringes of the lake, canal and adjacent agriculture fields in the catchment area.

### 144. 1886. ***Motacilla alba personata*** (Gould, 1861)

1861. *Motacilla personata* Gould, *Bds. Asia* 4 pl. 63.

**Type locality** : Bengal.

**Common name** : White Wagtail.

**Remarks** : Uncommon, winter migrant. Infrequently sighted along the fringes of the lake, canal and adjacent agriculture fields in the catchment area.

### 145. 1888. ***Motacilla alba leucopsis*** (Gould, 1838)

1838. *Motacilla leucopsis* Gould, *Proc. Zool. Soc. London* : 78.

**Type locality** : India.

**Common name** : White Wagtail.

**Remarks** : Uncommon, winter migrant. Infrequently sighted along the fringes of the lake, canal and adjacent agriculture fields in the catchment area. First seen in winter of 1997-1998, also reported by Pittie (1998).

### 146. 1891. ***Motacilla maderaspatensis*** Gmelin, 1789

1789. *(Motacilla) maderaspatensis* Gmelin, *Syst. Nat.*, **1** : 961.

**Type locality** : India (= Madras).

**Common name** : Large Pied wagtail.

**Remarks** : Common, resident breeder. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

Family CAMPEPHAGIDAE

Genus ***Tephrodornis*** Swainson, 1832

147. 1070. ***Tephrodornis pondicerianus*** (Gmelin, 1789)

1789. *Muscicapa pondiceriana* Gmelin, *Syst. Nat.*, 1 : 939.

**Type locality** : Coromandel.

**Common name** : Common Woodshrike.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, orchards and agriculture fields in the catchment area.

Genus ***Coracina*** Vieillot, 1816

148. 1072. ***Coracina macei*** (Lesson, 1830)

1830. *Graucalus macei* Lesson, *Traité d'Orn.*, : 349.

**Type locality** : Calcutta, Bengal.

**Common name** : Large Cuckoo-Shrike.

**Remarks** : Uncommon, local migrant. Frequently sighted in the scrub, orchards and agriculture fields in the catchment area.

Genus ***Pericrocotus*** Boie, 1826

149. 1081. ***Pericrocotus flammeus*** (Forster, 1781)

1781. *Muscicapa flammea* Forster, *Ind. Zool.*, : 25-26, pl. 15.

**Type locality** : No locality (designated to Ceylon).

**Common name** : Scarlet Minivet.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub, orchards and agriculture fields in the catchment area.

150. 1093. ***Pericrocotus cinnamomeus*** (Linne, 1766)

1799. *Motacilla cinnamomea* Linne, *Syst. Nat. ed.*, 12, 1 : 335.

**Type locality** : Ceylon.

**Common name** : Small Minivet.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub, orchards and agriculture fields in the catchment area.

Family PYCNONOTIDAE

Genus ***Pycnonotus*** Boie, 1826

151. 1128. ***Pycnonotus cafer*** (Linnaeus, 1766)

1766. *Turdus cafer* Linnaeus, *Syst. Nat., ed.* 12, 1 : 295.

**Type locality** : Cape of Good Hope (= Pondichéry).

**Common name** : Red-vented Bulbul.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, orchards, lakebed area and agriculture fields in the catchment area.

152. 1138. ***Pycnonotus luteolus*** (Lesson, 1841)

1841. *Haematornis luteolis* Lesson, *Rev. Zool.* : 354.

**Type locality** : Bombay.

**Common name** : White-browed Bulbul.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub, orchards and agriculture fields in the catchment area.

Family IRENIDAE

Genus ***Aegithina*** Vieillot, 1816

153. 1099. ***Aegithina tiphia humei*** Baker, 1922

1922. *Aegithina tiphia humei* Baker, *Fauna Brit. Ind., Bds.* 1 : 343.

**Type locality** : Raipur, Madhya Pradesh, India.

**Common name** : Common Iora.

**Remarks** : Common, resident breeder. Frequently heard and sighted in the scrub, orchards and agriculture fields in the catchment area.

Family LANIIDAE

Genus ***Lanius*** Linnaeus, 1758

154. 933. ***Lanius meridionalis lahtora*** (Sykes, 1832)

1832. *Collurio lahtora* Sykes, *Proc. Zool. Soc. London* : 86.

**Type locality** : Dukhun.

**Common name** : Southern Grey Shrike.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the scrub, orchards and agriculture fields in the catchment area.

155. 940. ***Lanius vittatus*** Valenciennes, 1826

1826. *Lanius vittatus* Valenciennes, *Dict. Sci. Nat.* (Levrault) **40** : 227.

**Type locality** : Pondichéry.

**Common name** : Bay-backed Shrike.

**Remarks** : Common, local migrant. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

156. 947. ***Lanius schach caniceps*** (Blyth, 1846)

1846. *Lanius canicpes* Blyth, *Jour. Asiat. Soc. Bengal,* **15** : 302.

**Type locality** : India.

**Common name** : Rufous-backed Shrike.

**Remarks** : Common, local migrant. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

Family MUSCICAPIDAE

Subfamily TURDINAE

Genus ***Copsychus*** Wagler, 1827

157. 1661,1663. ***Copsychus saularis*** (Linnaeus, 1758)

1758. *Gracula Saularis* Linnaeus, *Syst. Nat. ed.* 10, **1** : 109.

**Type locality** : Asia (= Bengal).

**Common name** : Oriental Magpie-Robin.

**Remarks** : Common, local migrant. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

Genus ***Saxicoloides*** Lesson, 1832

158. 1719. ***Saxicoloides fulicata intermedia*** Whistler & Kinnear, 1932

1932. *Saxicoloides fulicata intermedia* Whistler & Kinnear, *Jour. Bombay nat. Hist. Soc.*, **36** : 73.

**Type locality** : Rahuri, Ahmednagar.

**Common name** : Indian Robin.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

Genus ***Saxicola*** Bechstein, 1803

159. 1697. ***Saxicola torquata indica*** (Blyth, 1847)

1847. *Pratincola indica* Blyth, *Jour. Asiat. Soc. Bengal,* **16** : 129.

**Type locality** : India (= Calcutta).

**Common name** : Common Stonechat.

**Remarks** : Uncommon, winter migrant. Infrequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

160. 1701. ***Saxicola caprata burmanica*** Baker, 1923

1923. *Saxicola caprata burmanica* Baker, *Bull. Brit. Orn. Cl.,* **43** : 9.

**Type locality** : Pegu.

**Common name** : Pied Bushchat.

Remarks : Uncommon, local migrant. Infrequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

Genus ***Cercomela*** Bonaparte, 1856

161. 1692. ***Cercomela fusca*** (Blyth, 1851)

1851. *Saxicola fusca* Blyth, *Jour. Asiat. Soc. Bengal,* **20** : 523.

**Type locality** : Muttra.

**Common name** : Indian Chat.

**Remarks** : Rare, winter migrant. Twice sighted in the lakebed area near Rajpet in winter of 2000.

Subfamily TIMALIINAE

Genus ***Dumetia*** Blyth, 1849

162. 1222. ***Dumetia hyperythra*** (Franklin, 1831)

1831. *Timalia hyperythra* Franklin, *Proc. Zool. Soc. London* : 118.

**Type locality** : Ganges near Benares.

**Common name** : Rufous-bellied Babbler.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub and agriculture fields in the catchment area.

Genus ***Chrysomma*** Blyth, 1843

163. 1231. ***Chrysomma sinense*** (Gmelin, 1789)

1789. *Parus sinensis* Gmelin, *Syst. Nat.* **1** : 1012.

**Type locality** : China.

**Common name** : Yellow-eyed Babbler.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub and agriculture fields in the catchment area.

Genus ***Turdoides*** Cretzschmar, 1826

164. 1254. ***Turdoides caudatus*** (Dumont, 1823)

1823. *Cossyphus caudatus* Dumont, *Dict. sci. nat. (ed. Levrault)* **29** : 268.

**Type locality** : India.

**Common name** : Common Babbler.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

165. 1258. ***Turdoides malcolmi*** (Sykes, 1832)

1832. *Timalia malcolmi* Sykes, *Proc. Zool. Soc. London* : 88.

**Type locality** : Dukhun (= Poona).

**Common name** : Large Grey Babbler.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

166. 1262. ***Turdoides striatus orientalis*** (Jerdon, 1847)

1847. *M. (alacocircus) orientalis* Jerdon, Ill. *Ind. Orn., text to pl.* 19.

**Type locality** : 'Jungles of the Carnatic, and...Eastern Ghauts', restricted to Horselykonda, west of Nellore, by Ripley, 1958).

**Common name** : Jungle Babbler.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

### 167. 1267. ***Turdoides affinis*** (Jerdon, 1847)

1847. *M. (alacocircus) affinis* Jerdon, Ill. *Ind. Orn., text to pl.* 19.

**Type locality** : Travancore.

**Common name** : White-headed Babbler.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, orchards and agriculture fields in the catchment area.

## Subfamily SYLVINAE

## Genus ***Cisticola*** Kaup, 1829

### 168. 1498. ***Cisticola juncidis cursitans*** (Franklin, 1831)

1831. *Prinia cursitans* Franklin, *Proc. Zool. Soc. London* : 118.

**Type locality** : Between Calcutta and Benares.

**Common name** : Streaked-Fantail Warbler.

**Remarks** : Common, resident breeder. Infrequently sighted in the scrub and agriculture fields in the catchment area.

## Genus ***Prinia*** Horsfield, 1821

### 169. 1511. ***Prinia inornata*** Sykes, 1832

1832. *Prinia inornata* Sykes, *Proc. Zool. Soc. London* : 89.

**Type locality** : Dukhun.

**Common name** : Plain Prinia.

**Remarks** : Common, resident breeder. Infrequently sighted in the scrub and agriculture fields in the catchment area.

### 170. 1517. ***Prinia socialis*** Sykes, 1832

1832. *Prinia socialis* Sykes, *Proc. Zool. Soc. London* : 89.

**Type locality** : Dukhun.

**Common name** : Ashy Prinia.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, village groves and agriculture fields in the catchment area.

## Genus ***Acrocephalus*** Naumann, 1811

### 171. 1556. ***Acrocephalus dumetorum*** Blyth, 1849

1849. *Acrocephalus duemtorum* Blyth, *Jour. Asit. Soc. Bengal,* **18** : 815.

**Type locality** : India.

**Common name** : Blyth's Reed Warbler.

**Remarks** : Rare, winter visitor. Twice sighted in winters of 1999 and 2000.

## Genus ***Orthotomus*** Horsfield, 1821

### 172. 1535. ***Orthotomus sutorius guzratus*** (Latham, 1790)

1790. *Sylvia guzurata* Latham, *Index Orn.* : 554.

**Type locality** : Gujarat.

**Common name** : Tailor Bird.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves and agriculture fields in the catchment area.

## Genus ***Phylloscopus*** Boie, 1826

### 173. 1575. ***Phylloscopus collybita tristis*** (Blyth, 1843)

1843. *P. (hylloscopus) tristis* Blyth, *Jour. Asiat. Soc. Bengal,* **12** : 966.

**Type locality** : Calcutta.

**Common name** : Brown Leaf Warbler/ Chiffchaff.

**Remarks** : Common, winter migrant. Frequently sighted in the scrub, village groves and agriculture fields in the catchment area.

Subfamily MUSCICAPINAE

Genus ***Cyornis*** Blyth, 1843

174. 1442. ***Cyornis tickelliae*** (Blyth, 1843)

1843. *C. (yornis) Tickelliae* Blyth, *Jour. Asiat. Soc. Bengal,* **12** : 941.

**Type locality** : Central India (= Borabhum).

**Common name** : Tickell's Blue Flycatcher.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the orchards and village groves in the catchment area.

Subfamily MONARCHINAE

Genus ***Terpsiphone*** Linnaeus, 1758

175. 1461. ***Terpsiphone pardisi*** (Linnaeus, 1758)

1758. *Corvus paradisi* Linnaeus, *Syst. Nat. ed.* 10, 1 : 107.

**Type locality** : Chandernagore.

**Common name** : Asian Paradise-Flycatcher.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the orchards and village groves in the catchment area.

Subfamily RHIPIDURINAE

Genus ***Rhipidura*** Vigors and Horsfield, 1827

176. 1451. ***Rhipidura aureola*** Lesson, 1830

1830. *Rhipidura aureola* Lesson, *Traite de'Orn.* : 290.

**Type locality** : Bengal.

**Common name** : White-browed Fantail-Flycatcher.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the orchards and village groves in the catchment area.

177. 1454. ***Rhipidura albicollis albogularis*** (Lesson, 1832)

1832. *Muscicapa (Muscylva) albogularis* Lesson, in Belanger, *Voy. Ind. - Oreint., Zool.,* : 264.

**Type locality** : Pondicherry (= Salem dist., Madras).

**Common name** : White-throated Fantail-Flycatcher.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the orchards and village groves in the catchment area.

Family DICAEIDAE

Genus ***Dicaeum*** Cuvier, 1817

178. 1892. ***Dicaeum agile*** (Tickell, 1833)

1833. *Fringilla agilis* Tickell, *Jour. Aisat. Soc. Bengal,* **2** : 578.

**Type locality** : Borabhúm and Dholbhúm.

**Common name** : Thick-billed Flowerpecker.

**Remarks** : Common, resident breeder. Frequently sighted in the orchards and village groves in the catchment area.

Family NECTARINIDAE

Genus ***Nectarinia*** Illiger, 1811

179. 1907. ***Nectarinia zeylonica flaviventris*** (Hermann, 1804)

1804. *Certhia flaviventris* Hermann, *Observ. Zool.,* : 136.

**Type locality** : Tranquebarica.

**Common name** : Purple-rumped Sunbird.

**Remarks** : Common, resident breeder. Frequently sighted in scrub, orchards and village groves in the catchment area.

180. 1916. ***Nectarinia asiatica*** (Latham, 1790)

1790. *Certhia asiatica* Latham, *Index Orn.,* **1** : 288.

**Type locality** : India (= Gurgaon).

**Common name** : Purple Sunbird.

**Remarks** : Common, resident breeder. Frequently sighted in the orchards and village groves in the catchment area.

Family ZOSTEROPIDAE

Genus ***Zosterops*** Vigors & Horsfield, 1827

181. 1934. ***Zosterops palpebrosus salimali*** Whistler, 1933

1933. *Zosterops palpebrosus salimali* Whistler, *Jour. Bombay nat. Hist. Soc.,* **36** : 811.

**Type locality** : Farahabad, SE Hyderabad.

**Common name** : Oriental White-eye.

**Remarks** : Common, resident breeder. Frequently sighted in the orchards and village groves in the catchment area.

Family ESTRILDIDAE

Genus ***Amandava*** Blyth, 1836

182. 1964. ***Amandava amandava*** (Linnaeus, 1758)

1758. *Fringilla amandava* Linnaeus, *Syst. Nat., ed.* 10, 1 : 180.

**Type locality** : Calcutta.

**Common name** : Red Munia.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area and agriculture fields in the catchment area.

Genus ***Lonchura*** Sykes, 1832

183. 1966. ***Lonchura malabarica*** (Linnaeus, 1758)

1758. *Loxia malabarica* Linnaeus, *Syst. Nat., ed.* 10, 1 : 175.

**Type locality** : in Indiis (= India).

**Common name** : White-throated Munia.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area, village groves and agriculture fields in the catchment area.

184. 1974. ***Lonchura punctulata*** (Linnaeus, 1758)

1758. *Loxia punctulata* Linnaeus, *Syst. Nat., ed.* 10, 1 : 173.

**Type locality** : Asia (=Calcutta).

**Common name** : Spotted Munia.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, lakebed area and agriculture fields in the catchment area.

185. 1978. ***Lonchura malacca*** (Linnaeus, 1766)

1766. *Loxia malacca* Linnaeus, *Syst. Nat., ed.* 12, 1 : 302.

**Type locality** : China, Java and Malacca (error, restricted to Belgaum by Baker, 1926).

**Common name** : Black-headed Munia.

**Remarks** : Uncommon, resident breeder. Infrequently sighted in the scrub, lakebed area and agriculture fields in the catchment area.

Family PLOCEIDAE

Subfamily PASSERINAE

Genus ***Passer*** Brisson, 1760

186. 1938. ***Passer domesticus indicus*** Jardine & Selby, 1835

1835. *Passer indicus* Jardine & Selby, Ill. *Orn.*, 3, pl. 118.

**Type locality** : India (restricted to Bangalore).

**Common name** : House Sparrow.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village grove, lakebed area and agriculture fields in the catchment area.

Genus ***Petronia*** Kaup, 1829

187. 1949. ***Petronia xanthocollis*** (Burton, 1838)

1838. *Fringilla xanthocollis* Burton, *Cat. Bds. Mus. Fort Pitt, Chatam:* 23 (new name for *Fringilla flavicollis* Gemlin, 1789).

**Type locality** : Ganges between Calcutta and Benares.

**Common name** : Yellow-throated Sparrow.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the scrub, lakebed area and agriculture fields in the catchment area.

Subfamily PLOCEINAE

Genus ***Ploceus*** Cuvier, 1816

188. 1957. ***Ploceus philippinus*** (Linnaeus, 1766)

1766. *Loxia philippina* Linnaeus, *Syst. Nat., ed.* 12, 1 : 305.

**Type locality** : Philippines (*errore*, = Ceylon).

**Common name** : Baya Weaver.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

Family STURNIDAE

Genus ***Sturnus*** Linnaeus, 1758

189. 994. ***Sturnus pagodarum*** (Gmelin, 1789)

1789. *Turdus pagodarum* Gmelin, *Syst. Nat.* **1** : 816.

**Type locality** : Malabar.

**Common name** : Brahminy Starling.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

190. 996. ***Sturnus roseus*** (Linnaeus, 1758)

1758. *Turdus roseus* Linnaeus, *Syst. Nat., ed.* 10, 1 : 171.

**Type locality** : Lapland, Switzerland.

**Common name** : Rosy Starling.

**Remarks** : Uncommon, winter visitor. Infrequently sighted in the orchards and village groves in the catchment area.

Genus ***Acridotheres*** Vieillot, 1816

191. 1006. ***Acridotheres tristis*** (Linnaeus, 1766)

1766. *Paradisea tristis* Linnaeus, *Syst. Nat., ed.* 12, 1 : 167.

**Type locality** : Philippines (*errore* = Calcutta).

**Common name** : Common Myna.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

Family ORIOLIDAE

Genus ***Oriolus*** Linnaeus, 1766

192. 953. ***Oriolus oriolus kundoo*** Sykes, 1832

1832. *Oriolus kundoo* Sykes, *Proc. Zool. Soc. London* : 87.

**Type locality** : Dukhun.

**Common name** : Golden Oriole.

**Remarks** : Common, resident breeder. Frequently sighted in the orchards, village groves, lakebed area, scrub and agriculture fields in the catchment area.

Family DICRURIDAE

Genus ***Dicrurus*** Viellot, 1816

193. 963. ***Dicrurus macrocercus*** Vieillot, 1817

1817. *Dicrurus macrocercus* Vieillot, *Nouv. Dict. D'Hist. Nat., nouv. Ed.,* 9: 588 (based on 'Le Drongolon' of Levaillant, 1805, Ois. d'Afr. 4, pl. **174** : 72).

**Type locality** : India (restricted to Orissa; re-restricted to Madras city).

**Common name** : Black Drongo.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, orchards, lakebed area and agriculture fields in the catchment area.

194. 967. ***Dicrurus caerulescens*** (Linnaeus, 1758)

1758. *Lanius caerulescens* Linnaeus, *Syst. Nat. ed.* 10, 1 : 95.

**Type locality** : Benghala.

**Common name** : White-bellied Drongo.

**Remarks** : Uncommon, local migrant. Infrequently sighted in the village groves, orchards, and agriculture fields in the catchment area.

Family ARTAMIDAE

Genus ***Artamus*** Vieillot, 1816

195. 982. ***Artamus fuscus*** Vieillot, 1817

1817. *Artamus fuscus* Vieillot, *Nouv. Dit. d'Hist. Nat.,* **17** : 297.

**Type locality** : Bengal.

**Common name** : Ashy Woodswallow.

**Remarks** : Common, local migrant. Frequently sighted in the scrub, lakebed area and agriculture fields in the catchment area.

Family CORVIDAE

Genus ***Dendrocitta*** Gould, 1833

196. 1032. ***Dendrocitta vagabunda vernayi*** (Kinnear and Whistler, 1930)

1930. *Dendrocitta ruffa vernayi* Kinnear and Whistler, *Bull. Brit. Orn. Cl.*, **51** : 17.

**Type locality** : Nallamalai Range, 2000 ft, S. Kurnool.

**Common name** : Indian Treepie.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

Genus ***Corvus*** Linnaeus, 1758

197. 1049. ***Corvus splendens*** Vieillot, 1817

1817. *Corvus splendens* Vieillot, *Nouv. Dict. d'Hist. Nat.*, **8** : 44.

**Type locality** : Bengal.

**Common name** : House Crow.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

198. 1057. ***Corvus macrorhynchos culminatus*** Sykes, 1832

1832. *Corvus culminatus* Sykes, *Proc. Zool. Soc. London* : 96.

**Type locality** : Dukhun (= Poona).

**Common name** : Jungle Crow.

**Remarks** : Common, resident breeder. Frequently sighted in the scrub, village groves, lakebed area and agriculture fields in the catchment area.

## SUMMARY

A total of 198 species of birds belonging to 17 orders, 57 families and 137 genera was recorded during the present study (Table 1). The bulk of the species were represented by passeriformes with 73 species and subspecies. Around 56% of birds were migratory. Species such as the Spotbilled pelican *Pelecanus philippinus*, Osprey *Pandion haliaetus* and Indian Skimmer *Rynchops albicollis* are rarities.

**Table 1.** Birds of Pocharam Lake, Andhra Pradesh

| Order | Family | Genus | Species |
|---|---|---|---|
| PODICIPITIFORMES | PODICIPEDIDAE | 1 | 1 |
| PELICANIFORMES | PELECANIDAE | 1 | 1 |
| | PHALACROCAROCIDAE | 1 | 3 |
| | ANHINGIDAE | 1 | 1 |
| CICONIIFORMES | ARDEIDAE | 8 | 10 |
| | CICONIIDAE | 4 | 4 |
| | THRESKIORNIDAE | 4 | 4 |
| | PHOENICOPTERIDAE | 1 | 1 |
| ANSERIFORMES | DENDROCYGNIDAE | 1 | 1 |
| | ANATIDAE | 7 | 18 |
| FALCONIFORMES | ACCIPITIRIDAE | 10 | 12 |
| | PANDIONIDAE | 1 | 1 |
| | FALCONIDAE | 1 | 1 |
| GALLIFORMES | PHASIANIDAE | 4 | 5 |
| GRUIIFORMES | TURNICIDAE | 1 | 2 |
| | RALLIDAE | 4 | 4 |
| CHARADRIIFORMES | JACANIDAE | 2 | 2 |
| | ROSTRATULIDAE | 1 | 1 |
| | CHARADRIIDAE | 8 | 15 |
| | RECURVIROSTRIDAE | 1 | 1 |
| | GLAREOLIDAE | 1 | 1 |
| | LARIDAE | 3 | 3 |
| | RYNCHOPIDAE | 1 | 1 |
| COLUMBIFORMES | PTEROCLIDIDAE | 1 | 1 |
| | COLUMBIDAE | 2 | 6 |
| PSITTACIFORMES | PSITTACIDAE | 1 | 1 |
| CUCULIFORMES | CUCULIDAE | 4 | 4 |
| STRIGIFORMES | TYTONIDAE | 1 | 1 |
| | STRIGIDAE | 3 | 3 |

| Order | Family | Genus | Species |
|---|---|---|---|
| CAPRIMULGIFORMES | CAPRIMULGIDAE | 1 | 2 |
| APODIFORMES | APODIDAE | 2 | 2 |
| | HEMIPROCNIDAE | 1 | 1 |
| CORACIIFORMES | ALCEDINIDAE | 3 | 3 |
| | MEROPIDAE | 1 | 2 |
| | CORACIIDAE | 1 | 1 |
| | UPUPIDAE | 1 | 1 |
| | BUCEROTIDAE | 1 | 1 |
| PICIFORMES | CAPITONIDAE | 1 | 2 |
| | PICIDAE | 1 | 1 |
| PASSERIFORMES | ALAUDIDAE | 6 | 8 |
| | HIRUNDINIDAE | 1 | 4 |
| | MOTACILLIDAE | 2 | 9 |
| | CAMPEPHAGIDAE | 3 | 4 |
| | PYCNONOTIDAE | 1 | 2 |
| | IRENIDAE | 1 | 1 |
| | LANIDAE | 1 | 3 |
| | MUSCICAPIDAE | 15 | 21 |
| | DICAEIDAE | 1 | 1 |
| | NECTARINIDAE | 1 | 2 |
| | ZOSTEROPIDAE | 1 | 1 |
| | ESTRLIDIDAE | 2 | 4 |
| | PLOCEIDAE | 3 | 3 |
| | STURNIDAE | 2 | 3 |
| | ORIOLIDAE | 1 | 1 |
| | DICRURIDAE | 1 | 2 |
| | ARTAMIDAE | 1 | 1 |
| | CORVIDAE | 2 | 3 |

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# MAMMALIA

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## INTRODUCTION

The mammalian diversity of Pocharam Lake and its vicinity has virtually been not studied excepting some passing remarks by Spillet (1968). Although the mammalian fauna of Andhra Pradesh has been documented by Chakraborty *et al.* (2004), there are no remarks pertaining to any locality near Pocharam Reservoir. The senior author has intermittently studied the wildlife of Pocharam Wildlife Sanctuary, including Pocharam Lake and its catchment area, since late 1995. Between 2003 and 2005, under the aegis of Fuanal Diversity of Pocharam Lake Project of Freshwater Biology Station of Zoological Survey of India, Hyderabad observations on mammalian diversity in the catchment area of Pocharam lake were made by us. This report includes species that have been observed during these surveys as well as those recorded by the senior author since 1995.

## SYSTEMATIC ACCOUNT

Order INSECTIVORA

Family SORICIDAE

Genus ***Suncus*** Erhenberg, 1833

1. ***Suncus murinus murinus*** (Linnaeus)

**Grey Musk Shrew**

1766. *Sorex murinus* Linnaeus. *Syst. Nat.* 12th ed., **1** : 74 (Java, Indonesia).

**Distribution** : India: Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu and West Bengal.

**Elsewhere** : Bangladesh, Bhutan (Probably), Nepal, Pakistan and Sri Lanka.

**Remarks** : Fairly common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

Order CHIROPTERA

Suborder MEGACHIROPTERA

Family PTEROPODIDAE

Genus ***Cynopterus*** Cuvier, 1824

2. ***Cynopterus sphinx*** (Vahl, 1797)

**Short-nosed fruit Bat**

1797. *Vespertilio sphinx* Vahl, *Skr. Nat. Selsk. Copenhagen,* 4(1) : 123 (Tranquebar, Madras, India).

**Distribution** : India : Andhra Pradesh, Andaman and Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh and West Bengal.

**Elsewhere** : Pakistan, Nepal, Bangladesh, Sri Lanka and Bhutan.

**Remarks** : Fairly common fruit bat sighted in vaillage groves, orchards and scrub jungles.

**Status** : Least Concern.

Genus ***Pteropus*** Brisson, 1962

3. ***Pteropus giganteus*** (Brünnich, 1782)

**Indian Flying Fox**

1782. *Vespertilio gigantea* Brünnich, *Dyrenes Historie,* 1 : 45 (Bengal, India).

**Distribution** : India : Arunachal Pradesh, Assam, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, Uttaranchal and West Bengal.

**Elsewhere** : Pakistan; Sri Lanka, Bangladesh and Maldives.

**Remarks** : Uncommon fruit bat, occasionally seen feding on the fig or other fruiting trees in the catchment area.

**Status** : Least Concern.

Suborder MICROCHIROPTERA

Family RHINOPOMATIDAE

Genus ***Rhinopoma*** E. Geoffroy, 1818

4. ***Rhinopoma hardwickii*** Gray, 1831

**Lesser Mouse-tailed Bat**

1831. *Rhinopoma hardwickii* Gray, *Zool. Misc.*, **1** : 37 (Bengal, India).

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

**Elsewhere** : Pakistan and Bangladesh.

**Remarks** : Uncommon, sighted occasionally near dilapidated guesthouses and dam.

**Status** : Least Concern.

Family VESPERTILIONIDAE

Genus ***Pipistrellus*** Kaup, 1829

5. ***Pipistrellus ceylonicus*** (Kelaart, 1852)

**Kelaart's Pipistrelle**

1852. *Scotophilus ceylonicus* Kelaart, *Prodr. Faun. Zeylanica,* p. 22 (Trincomalee, Sri Lanka).

**Distribution** : India : Andhra Pradesh, Bihar, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and West Bengal.

**Elsewhere** : Pakistan, Bangladesh and Sri Lanka.

**Remarks** : Fairly common, seen feeding in the lakebed area and also in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

6. ***Pipistrellus tenuis*** (Temminck, 1840)

**Indian Pygmy Pipistrelle**

1840. *Vespertilio tenuis* Temminck, *Monogr. Mamm.*, **2** : 229 (Sumatra, Indonesia).

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala,

Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal.

**Elsewhere** : Pakistan, Nepal, Sri Lanka and Bangladesh.

**Remarks** : Common, seen feeding in lakebed area, surrounding scrub and in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

Order PRIMATES

Family CERCOPITHECIDAE

Genus ***Macaca*** Lacépède, 1799

7. ***Macaca mulatta*** (Zimmermann, 1780)

**Rhesus Macaque**

1780. *Cercopithecus mulatta* Zimmermann, *Geogr. Gesch. Mensch.*, **2** : 195 (India).

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Delhi, Gujarat, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Tripura, Uttar Pradesh and West Bengal.

**Elsewhere** : Afghanistan, Bangladesh, Bhutan, China, Myanmar, Thailand and Vietnam.

**Remarks** : Uncommon, seen occasionally in small troops in village groves, agriculture fields, orchards surrounding the Pocharam Lake.

**Status** : Near Threatened; CITES - Appendix II.

8. ***Macaca radiata*** (Geoffroy, 1812)

**Bonnet Monkey**

1812. *Cercocebus radiatus* E. Geoffroy, *Ann. Mus. Hist. Nat. Paris*, **19** : 98 (India).

**Distribution** : India : Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Maharashtra and Tamil Nadu.

**Elsewhere** : Endemic to India.

**Remarks** : Common, seen in small groups in village groves, agriculture fields, scrub and orchards surrounding the Pocharam Lake.

**Status** : Least Concern; CITES - Appendix II.

Genus ***Semnopithecus*** Desmarest, 1822

9. ***Semnopithecus entellus anchises*** (Blyth, 1844)

**Deccan Langur**

1844. *Presbytis anchises* Blyth, *Jour. Asiat. Soc. Beng.*, Calcutta, **13** : 470 ("Deccan", India).

**Distribution** : India : Andhra Pradesh, Chattisgarh, Madhya Pradesh, Maharashtra.

**Elsewhere** : Nowhere.

**Remarks** : Common, seen in small troops in scrub forest, orchards and agriculture fileds surrounding the Pocharam Lake.

**Status** : Near Threatened.

Order CARNIVORA

Family CANIDAE

Genus ***Canis*** Linnaeus, 1758

10. ***Canis aureus*** Wroughton, 1916

**Asiatic Jackal**

1916. *Canis naria* Wroughton, *J. Bombay nat. Hist. Soc.*, 24 : 651 (Virajpet, Coorg, Karnataka, India).

**Distribution** : India : Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

**Elsewhere** : Bangladesh, Nepal and Pakistan.

**Remarks** : Uncommon, occasionally sighted in the lakebed area in the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Genus ***Vulpes*** Oken, 1816

11. ***Vulpes bengalensis*** (Shaw, 1800)

**Common Indian Fox**

1800. *Canis bengalensis* Shaw, *Gen. Zool.*, **1,2** : 330 (Bengal, India).

**Distribution** : India : Throughout the country.

**Elsewhere** : Bangladesh, Nepal and Pakistan.

**Remarks** : Uncommon, occasionally sighted in the lakebed area in the Pochamrallu Deer Breeding Centre and also in the scrub jungles.

**Status** : Least Concern.

Family FELIDAE

Genus ***Felis*** Linnaeus, 1758

12. ***Felis chaus*** Pearson, 1832

**Jungle Cat**

1832. *Felis kutas* Pearson, *J. Asiat. Soc. Bengal,* **1** : 75 (Midnapur, West Bengal, India).

**Distribution** : India : Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

**Elsewhere** : Widespread from N Africa to SE Asia.

**Remarks** : Uncommon, seen occasionally in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Genus ***Panthera*** Oken, 1816

13. ***Panthera pardus fusca*** (Meyer, 1794)

**Leopard**

1794. *Felis fusca* Meyer, *Zool. Ann.,* **1** : 394 (Bengal, India).

**Distribution** : India : Throughout the country.

**Elsewhere** : Bangladesh, China, Myanmar, Sri Lanka.

**Remarks** : Uncommon, seen occasionally in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Family HERPESTIDAE

Genus ***Herpestes*** Illiger, 1811

14. ***Herpestes edwardsii*** (E. Geoffroy, 1818)

**Indian Grey Mongoose**

1818. *Ichneumon edwardsii* E. Geoffroy, *Descrip. De L'Egypte,* **2** : 139 (East Indies; Madras, according to Pocock, 1933).

**Distribution** : India : Andhra Pradesh, Assam, Bihar, Gujarat, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Uttar Pradesh and West Bengal.

**Elsewhere** : Bangladesh and Nepal.

**Remarks** : Uncommon, seen occasionally in the rocky outcrops in the lakebed area and near dam.

**Status** : Least Concern.

### 15. ***Herpestes auropunctatus*** (Hodgson, 1836)

### Small Indian Mongoose

1836. *Mangusta auropunctata* Hodgson, *J. Asiat. Soc. Bengal*, 5 : 236. (Nepal)

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chattisgarh, Jharkhand, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Uttaranchal, Uttar Pradesh and West Bengal.

**Elsewhere** : Pakistan, Bangladesh and Nepal.

**Remarks** : Uncommon, seen occasionally in villages, agriculture fields and scrub jungle surrounding the Pocharam Lake.

**Status** : Least Concern.

## Family URSIDAE

## Genus ***Melursus*** Meyer, 1793

### 16. ***Melursus ursinus*** (Shaw, 1791)

### Sloth Bear

1791. *Bradypus ursinus* Shaw, *Nat. Miss.*, 2 (unpaged), pl. 58-59 (Patna, Bihar, India).

**Distribution** : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Uttar Pradesh and West Bengal.

**Elsewhere** : Bangladesh.

**Remarks** : Rare, occasionally reported visiting the lakebed area in Pochamrallu Deer Breeding Centre in 1995-1996.

**Status** : Vulnerable.

## Order ARTIODACTYLA

## Family SUIDAE

## Genus ***Sus*** Linnaeus, 1758

### 17. ***Sus scrofa*** Wagner, 1839

### Wild Boar

1839. *Sus scrofa* Wagner, *Munch. Gelehrt. Anz.*, 9 : 435 (probably Malabar Coast, India).

**Distribution** : India : Throughout India in forested and semi-forested areas.

**Elsewhere** : Bangladesh, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka and Vietnam.

**Remarks** : Common, seen frequently grazing in small herds in lakebed area and agriculture fields in the catchment area.

**Status** : Least Concern.

Family CERVIDAE

Genus ***Axis*** H. Smith, 1827

18. ***Axis axis*** (Erxleben, 1777)

**Chital**

1777. *Cervus axis* Erxleben, *Syst. Regn. Anim.*, 312 (Bank of Ganges, India).

**Distribution** : India : Widely distributed in peninsular India, northwards to Kumaon in Uttar Pradesh and Sikkim and eastwards to Assam and Meghalaya.

**Elsewhere** : Bangladesh, Nepal and Sri Lanka.

**Remarks** : Common in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Genus ***Cervus*** Linnaeus, 1758

19. ***Cervus unicolor*** (Blainville, 1816)

**Sambar**

1816. *Cervus niger* Blainville, *Bull. Soc. Philom. Paris*, 76 (probably somewhere in India, Ellerman and Morrison-Scott, 1951).

**Distribution** : India : Andhra Pradesh, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

**Elsewhere** : Bangladesh and Nepal.

**Remarks** : Common in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Family BOVIDAE

Genus ***Boselaphus*** Pallas, 1766

20. ***Boselaphus tragocamelus*** (Pallas, 1766)

**Blue Bull (Nilgai)**

1766. *Antilope tragocamelus* Pallas, Misc. Zool., 5 (Plains of peninsular India).

**Distribution** : India : Widely distributed in India from the base of the Himalayas to Karnataka and Andhra Pradesh.

**Elsewhere** : Pakistan.

**Remarks** : Common in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Order RODENTIA

Family SCIURIDAE

Genus ***Funambulus*** Lesson, 1835

21. ***Funmbulus pennantii*** Wroughton, 1905

**Northern Palm Squirrel**

1905. *Funambulus pennanti* Wroughton, J. Bombay nat. Hist. Soc., **16** : 411 (Mandvi, Surat District, Gujarat, India).

**Distribution** : India : Andaman and Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Sikkim, Uttaranchal, Uttar Pradesh and West Bengal.

**Elsewhere** : Bangladesh, Nepal, Pakistan.

**Remarks** : Fairly common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

Family MURIDAE

Genus ***Bandicota*** Gray, 1873

22. ***Bandicota bengalensis*** (Gray & Hardwicke, 1833)

**Indian Mole-rat**

1833. *Arvicola bengalensis* Gray (in Hardwicke, 1830-35), *Illus. Ind. Zool.*, 2: pl. 21 (Bengal, India).

**Distribution** : India : Throughout India.

**Elsewhere** : Bangladesh, Nepal and Pakistan.

**Remarks** : Fairly common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

### 23. ***Bandicota indica*** (Bechstein, 1800)

### Large Bandicoot Rat

1800. *Mus indicus* Bechstein, *Allgemeine Ueber Vierf. Thiere,* **2** : 497 (Pondicherry, India).

**Distribution** : India : Throughout India.

**Elsewhere** : Bangladesh, Nepal, Pakistan and Sri Lanka.

**Remarks** : Common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

## Genus ***Rattus*** Fischer, 1803

### 24. ***Rattus rattus rufescens*** (Gray, 1837)

### House Rat

1837. *Mus rufescens* Gray, *Ann. Mag. nat. Hist.,* **1** : 35 (Dharwar, Karnataka, India)

**Distribution** : India : Throughout most of India.

**Elsewhere** : Bangladesh, Nepal and Pakistan.

**Remarks** : Fairly common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

## Genus ***Mus*** Linnaeus, 1758

### 25. ***Mus musculus*** Linnaeus, 1758

### House Mouse

1758. *Mus musculus* Linnaeus, *Syst. Nat.,* 10th ed., **1** : 62 (Uppasala, Sweden).

**Distribution** : India : Throughout India.

**Elsewhere** : Bangladesh, Bhutan, Nepal, Pakistan and Sri Lanka.

**Remarks** : Fairly common in villages surrounding the Pocharam Lake.

**Status** : Least Concern.

Family HYSTRICIDAE

Genus ***Hystrix*** Linnaeus, 1758

26. ***Hystrix indica*** (Kerr, 1792)

**Indian Crested Porcupine**

1792. *Hystrix cristata var. indica* Kerr, *Anim. Kingdom,* : 23 (India).

**Distribution** : India : Andhra Pradesh, Bihar, Chattisgarh, Gujarat, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttaranchal, Uttar Pradesh and West Bengal.

**Elsewhere** : Bangladesh, Nepal and Pakistan.

**Remarks** : Uncommon, seen occasionally in the rocky outcrops in the lakebed area and also in the lakebed area of the Pochamrallu Deer Breeding Centre.

**Status** : Least Concern.

Order LAGOMORPH

Family LEPORIDAE

Genus ***Lepus*** Linnaeus, 1758

27. ***Lepus nigricollis*** Cuvier, 1823

**Indian Hare**

1823. *Lepus nigricollis* Cuvier, *Diet. Sci. Nat.*, **26** : 307 (Madras, India).

**Distribution** : India : Throughout India.

**Elsewhere** : Bangladesh, Bhutan (probably), Nepal, Pakistan and Sri Lanka.

**Remarks** : Fairly common in scrub and rocky outcrop areas surrounding the Pocharam Lake.

**Status** : Least Concern.

## SUMMARY

A total of 27 species of mammals belonging to 7 orders, 16 families and 23 genera was recorded during the present study (Table 1). Although, only a few species have been noted near the Pocharam Lake, many have been observed in the catchment area that comprises scrub jungle, agriculture fields, adjoining protected forest areas and rocky scrapments along the canal downstream the Pocharam Dam. Most of the larger mammals were seen Pochamrallu Deer Breeding Centre parts of wich overlap the catchment area of the

Pocharam Lake. The Deer Breeding Centre also has a semi-captive population of Blackbuck *Antilope cervicapra* but it was not included in the present list as they were not sighted to be actually occurring wildly in the adjoining areas. Another of the large mammals, the Four-horned Antelope *Tetraceros quadricornis*, which has been frequently sighted in the forested areas of the Pocharam Wildlife Sanctuary, was never sighted in the catchment area of the Pocharam Lake.

**Table 1 : Mammals of Pocharam Lake, Andhra Pradesh**

| Order | Family | Genus | Species |
|---|---|---|---|
| INSECTIVORA | SORICIDAE | 1 | 1 |
| CHIROPTERA | PTEROPODIDAE | 2 | 2 |
| | RHINOPOMATIDAE | 1 | 1 |
| | VESPERTILIONIDAE | 1 | 2 |
| PRIMATES | CERCOPITHECIDAE | 2 | 3 |
| CARNIVORA | CANIDAE | 2 | 2 |
| | FELIDAE | 2 | 2 |
| | HERSPETIDAE | 1 | 2 |
| | URSIDAE | 1 | 1 |
| ARTIODACTYLA | SUIDAE | 1 | 1 |
| | CERVIDAE | 2 | 2 |
| | BOVIDAE | 1 | 1 |
| RODENTIA | SCIURIDAE | 1 | 1 |
| | MURIDAE | 3 | 4 |
| | HYSTRICIDAE | 1 | 1 |
| LAGOMORPHA | LEPORIDAE | 1 | 1 |
| **Total** | **16** | **23** | **27** |

## ACKNOWLEDGMENTS

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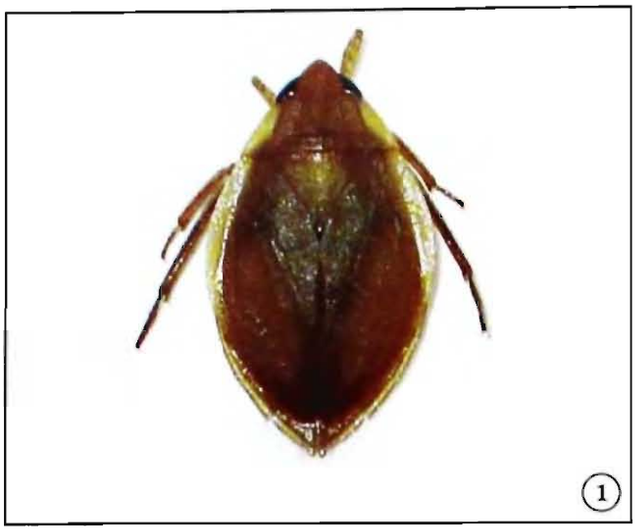
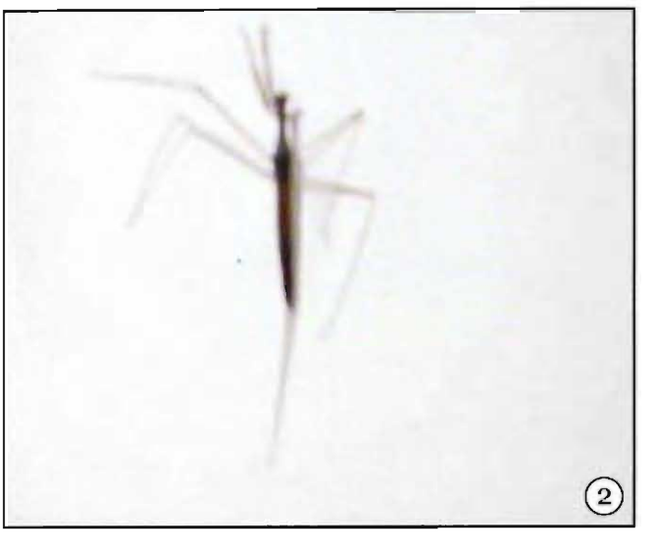
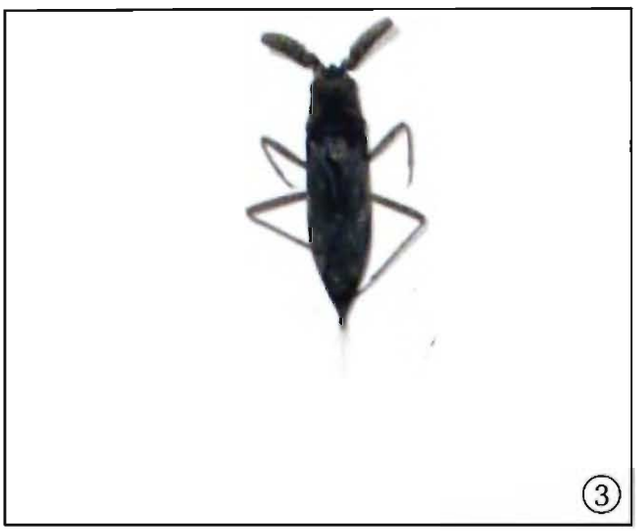
# PLATE 1 : Habitats of Pocharam Lake and its environs

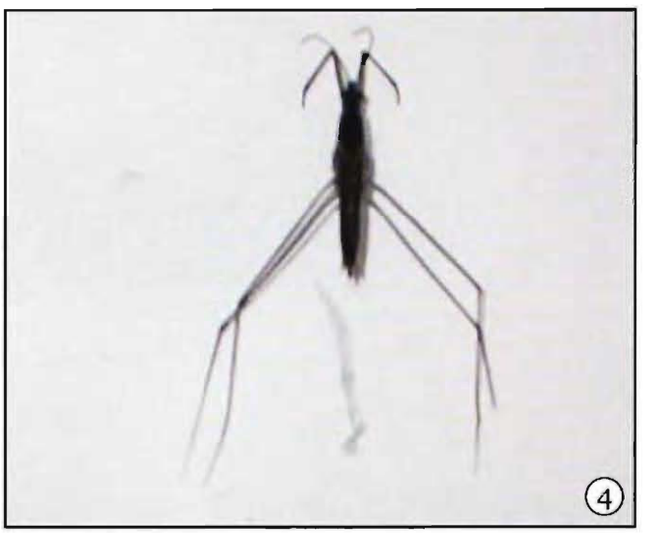

1. View of shallow area near Pocharam village; 2. Outlet canal near Pocharam village;
3. Scrub jungle downstream the canal

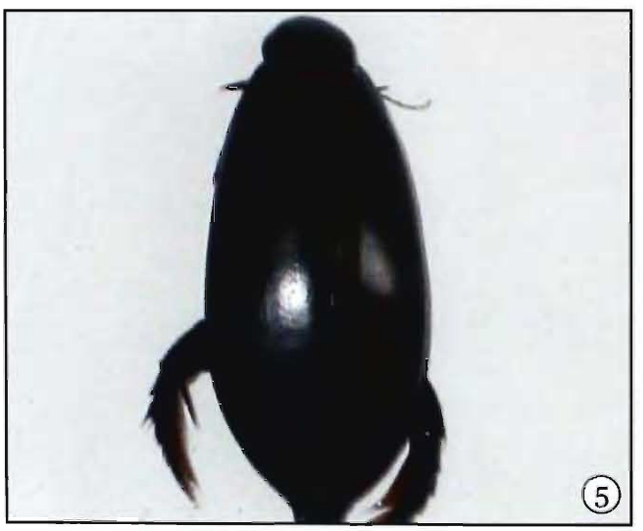
# PLATE 2 : Aquatic insects of Pocharam Lake



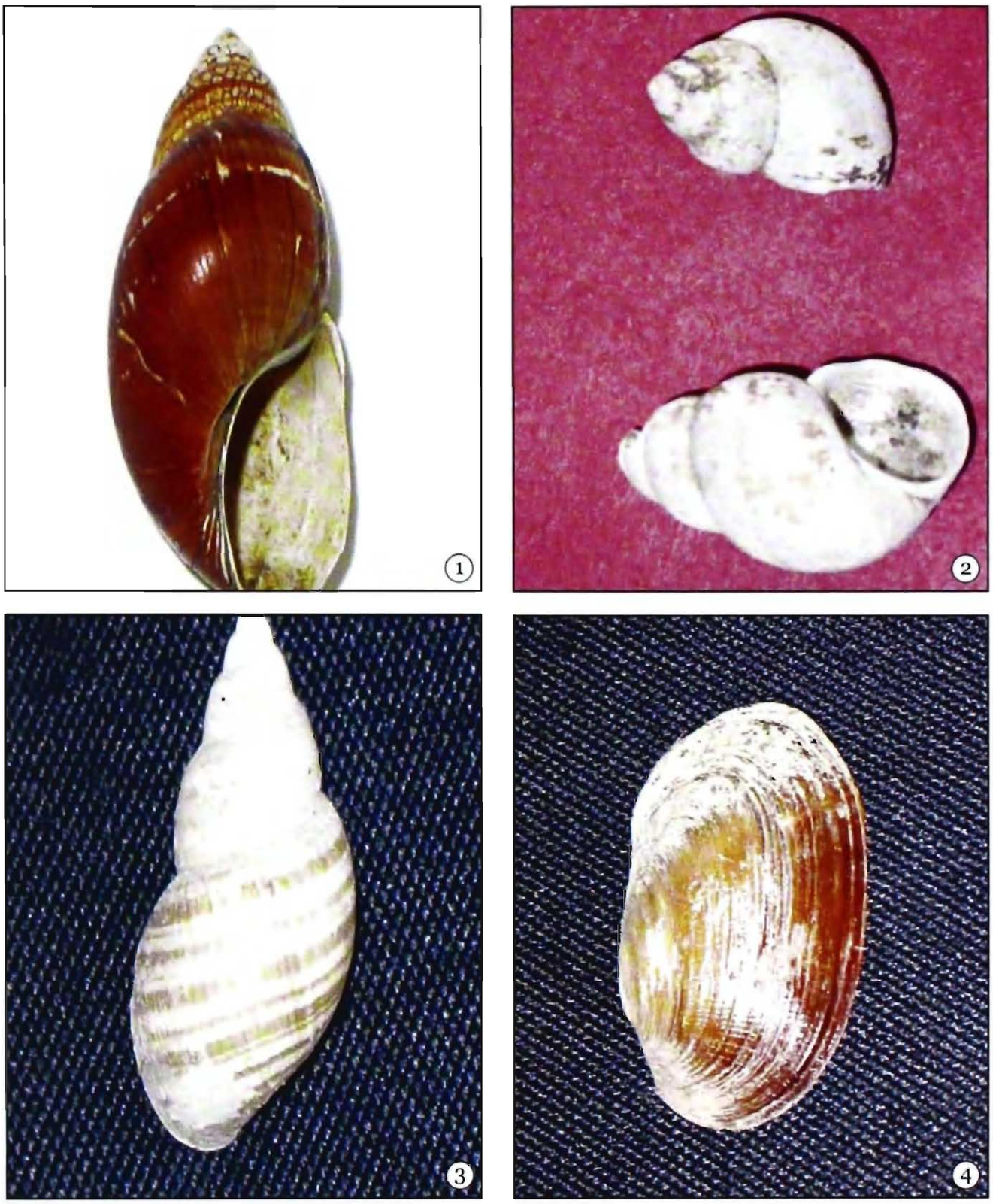





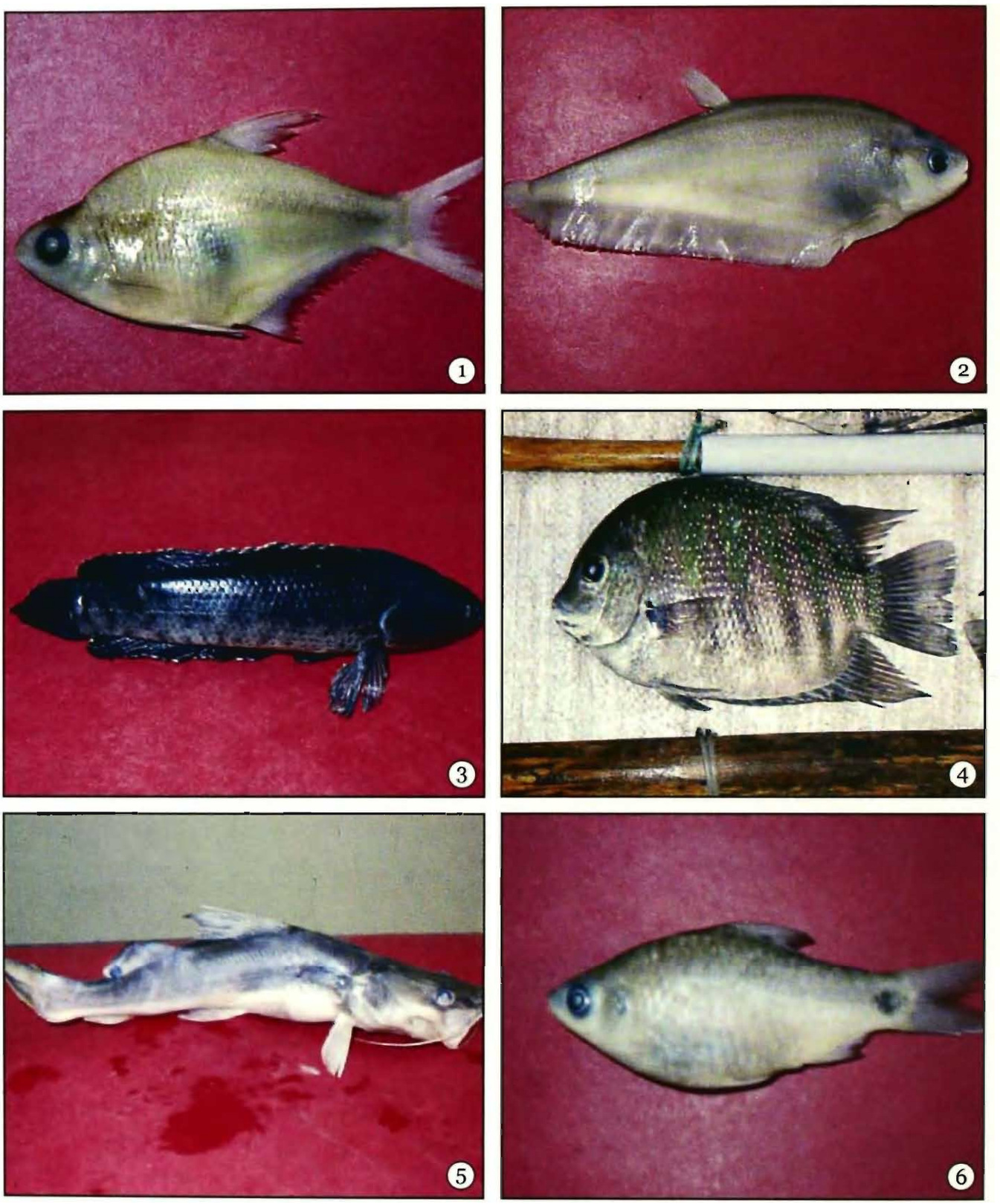
1. *Diplonychus rusticus*; 2. *Ranatra filiformis*; 3. *Limnometra fluviorum*;
4. *Hydrophilus rufocinctus*; 5. *Hydrovatus confertus*; 6. *Laccotrephes griseus*

# PLATE 3 : Molluscs of Pocharam Lake



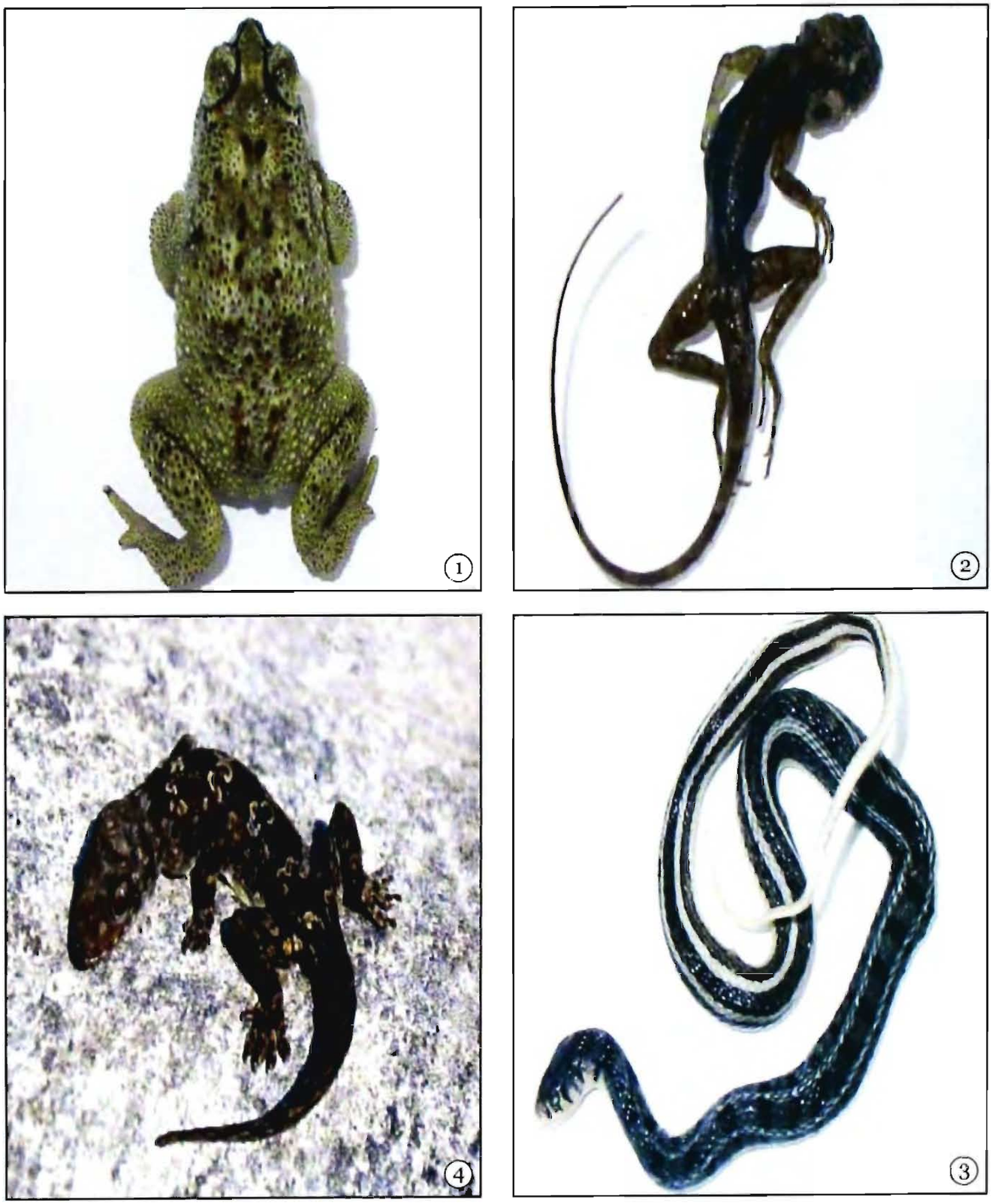

1. *Bellamya bengalensis f. Eburnea*; 2. *Bellamya dessimilis*;
3. *Lamellidens marginalis*; 4. *Bellamya bengalensis f. typica*

# PLATE 4 : Fishes of Pocharam Lake




1. *Osteobrama vigorsii*; 2. *Notopterus notopterus*; 3. *Etroplus suratensis*; 4. *Puntius sophore*; 5. *Mystus seenghala*; 6. *Channa punctatus*

# PLATE 5 : Herpetofauna of Pocharam Lake



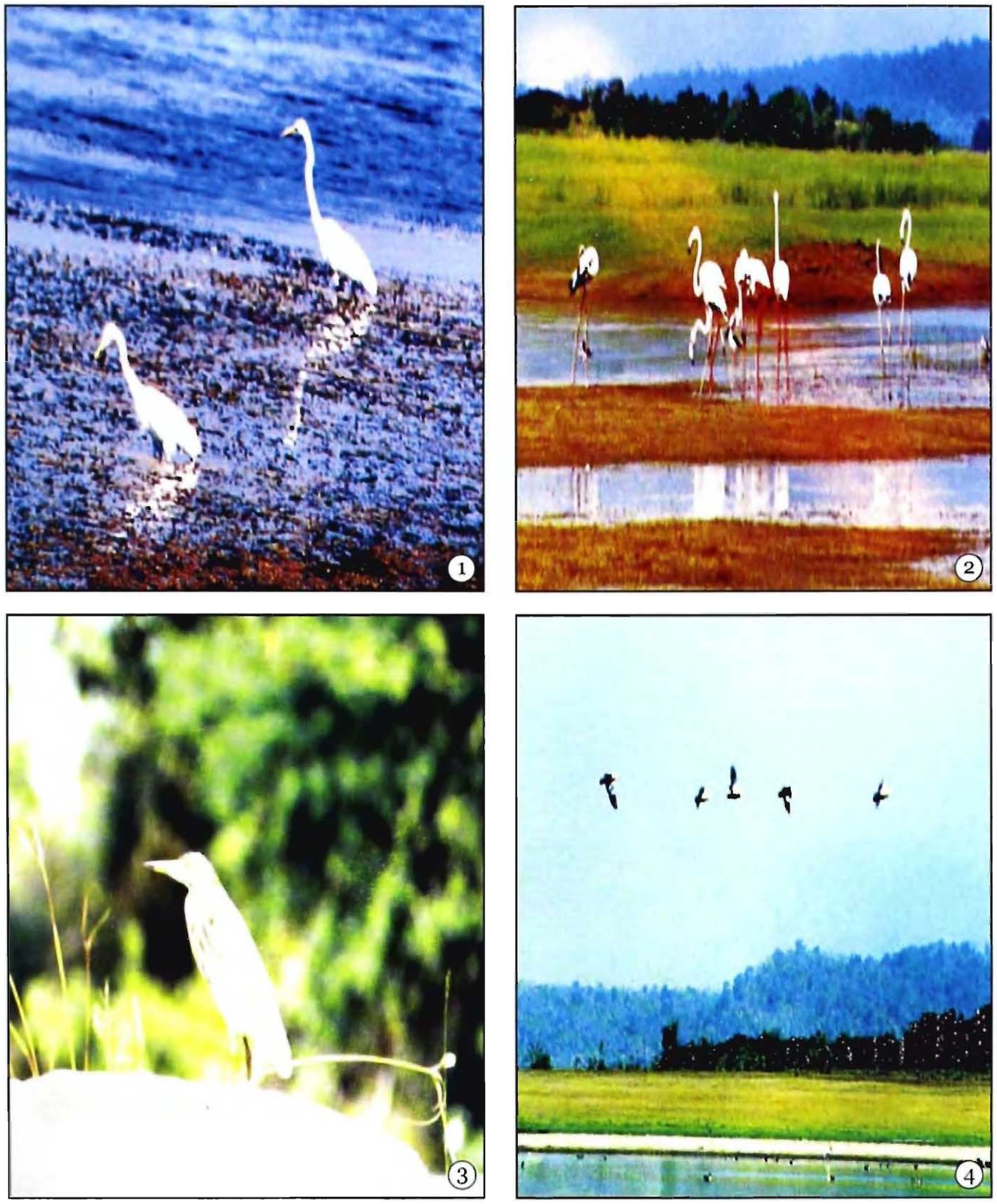

1. *Bufo melanostictus*; 2. *Calotes versicolor*;
3. *Amphiesma stolatum*; 4. *Hemidactylus giganteus*

# PLATE 6 : Birds of Pocharam Lake



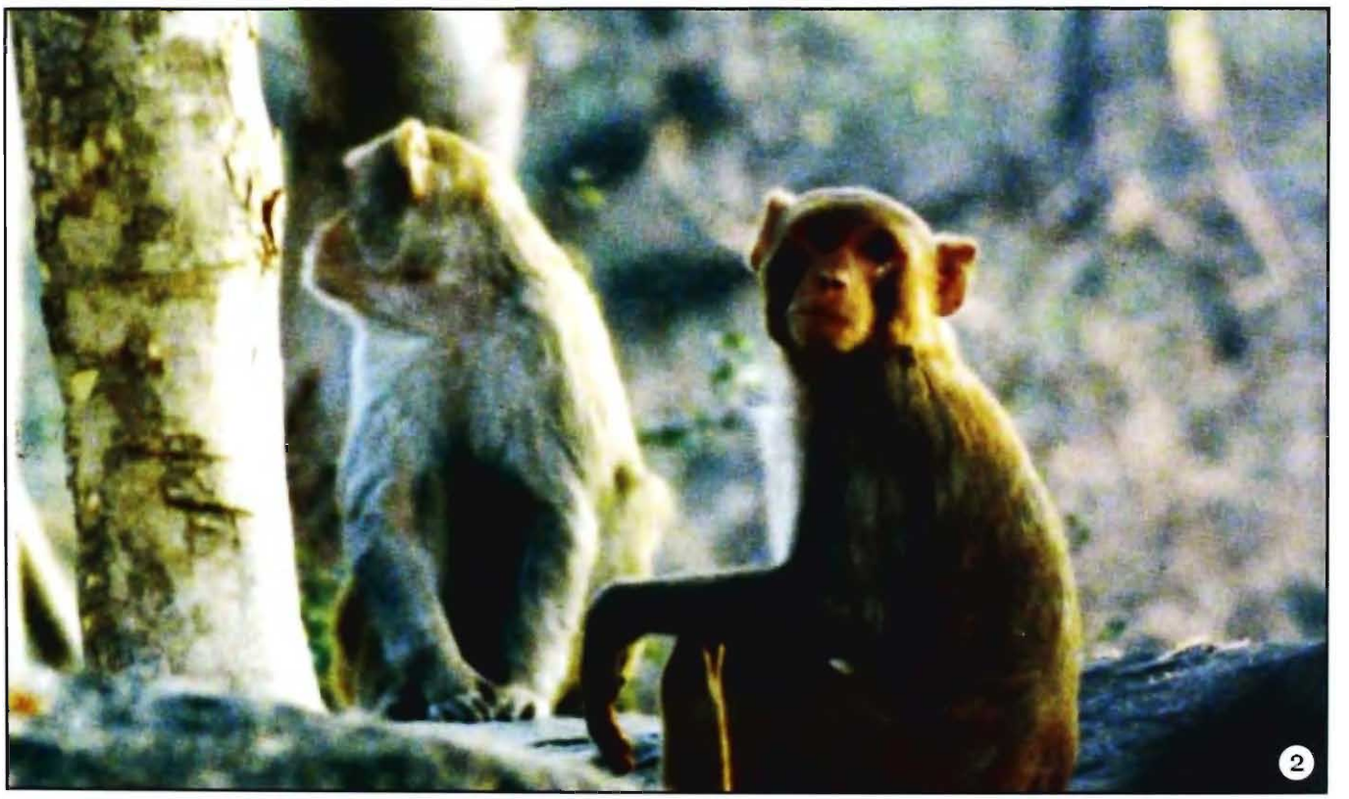

1. Indian Hoopoe *Upupa epops*; 2. Common Sandpiper *Actitis hypoleucos*;
3. Indian Moorhen *Gallinula* chloropus

# PLATE 7 : Birds of Pocharam Lake




1. Large Egret *Casmerodius albus*; 2. Greater Flamingo *Phoenicopterus ruber*;
3. Brahminy Duck *Tadorna ferruginea*; 4. Pond Heron *Ardeola grayii*

# PLATE 8 : Mammals of Pocharam Lake & its environs


1. Deccan Hanuman Langur *Semnopithecus entellus* anchises;
2. Rhesus Macaque *Macaca mulatta*