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

ZOOCLOGICAL SURVEY OF INDIA
Limnological and Faunistic Studies of Pocharam Lake, Nizamabad-Medak District, Andhra Pradesh

Edited by the Director, Zoological Survey of India, Kolkata

Zoological Survey of India
Kolkata
CITATION

Editor-Director. 2010 Limnological and Faunistic Studies of Pocharam Lake, Nizamabad-Medak District, Andhra Pradesh, Wetland Ecosystem Series, 13, 1-181, (Published by the Director, Zool. Surv. India, Kolkata)

Published: March, 2010

ISBN 978-81-8171-256-1

© Govt. of India, 2010

ALL RIGHTS RESERVED

• No Part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.

• This book is sold subject to the condition that it shall not, by way of trade, be lent, resold, hired out or otherwise disposed off without the publisher's consent, in a form of binding or cover other than that in which, it is published.

• The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

PRICE

Indian Rs. 400.00
Foreign $ 30 £ 25

Published at the Publication Division, by the Director, Zoological Survey of India, 234/4 A.J.C. Bose Road, 2nd MSO Building, Nizam Palace (13th floor), Kolkata 700 020 and printed at Typographia, Kolkata 700 012.
# CONTENTS

1. **INTRODUCTION & LIMNOLOGY** ................................................................. 1  
   S.V.A. CHANDRASEKHAR AND C.A. NAGESWARA RAO

2. **ZOOPLANKTON** ................................................................................... 29  
   S.V.A. CHANDRASEKHAR

3. **AQUATIC INSECTS (HEMIPTERA & COLEOPTERA)** ......................... 37  
   J. DEEPA & C.A.N. RAO

4. **CRUSTACEA** ....................................................................................... 51  
   S.S. GHATAK, S.K. GHOSH & M.K. DEV ROY

5. **MOLLUSCA** ......................................................................................... 57  
   K.V. SURYA RAO

6. **ICHTHYOFAUNA** ................................................................................. 75  
   C.A.N. RAO, MOHD. HAKEEL & J. DEEPA

7. **HERPETOFAUNA** ............................................................................... 99  
   C. SRINIVASULU AND BHARGAVI SRINIVASULU

8. **AVES** .................................................................................................. 113  
   C. SRINIVASULU AND BHARGAVI SRINIVASULU

9. **MAMMALIA** ....................................................................................... 169  
   C. SRINIVASULU & BHARGAVI SRINIVASULU

10. **PLATES** .............................................................................................. I-VIII
INTRODUCTION AND LIMNOLOGY: POCHARAM LAKE

S.V.A. CHANDRASEKHAR AND C.A. NAGESWARA RAO
Freshwater Biological Regional Centre, Zoological Survey of India
Plot 366/1, Attapur (V), Hyderguda P.O. Hyderabad - 500 048

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 masonry 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 (Wadalparty in January 2005). The higher pH may be due to increased carbonates, bicarbonates and higher photosynthetic activities resulting from phytoplankton production. At Wadalparty 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
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 autochthonous 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 (Wadalparty 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 time (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 Pochammaramalu). 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 CO₂.

**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 evapotranspiration. But in first year summer, these values were found between 13 to 28 whereas 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.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Parameter</th>
<th>Range (s) found in Pocharam lake waters</th>
<th>Tolerance Limits for Drinking waters IS: 2296-1982</th>
<th>Tolerance Limits for Irrigational waters IS: 2296-1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Temp. (Air/Water)</td>
<td>21-37 / 18-35</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>pH</td>
<td>7.05-9.4</td>
<td>6.5-8.5</td>
<td>6.0-8.5</td>
</tr>
<tr>
<td>3.</td>
<td>Elec. Conductivity</td>
<td>210-500 (expl. 770 &amp; 810)</td>
<td>-</td>
<td>2250</td>
</tr>
<tr>
<td>4.</td>
<td>Turbidity</td>
<td>5-160 (expl. 300 &amp; 950)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>TDS</td>
<td>155-365 (expl. 530)</td>
<td>500</td>
<td>2100</td>
</tr>
<tr>
<td>6.</td>
<td>Dissolved Oxygen</td>
<td>0.9-8.0 (expl. 8.2 &amp; 8.5)</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Carbonates</td>
<td>10-105</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Bicarbonates</td>
<td>30-180</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Free CO2</td>
<td>8.6-25 (expl. 42)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>Chloride</td>
<td>15-31</td>
<td>250</td>
<td>600</td>
</tr>
<tr>
<td>11.</td>
<td>Total Hardness</td>
<td>70-390</td>
<td>300</td>
<td>-</td>
</tr>
<tr>
<td>12.</td>
<td>Calcium</td>
<td>15-59</td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>13.</td>
<td>Magnesium</td>
<td>11-46 (expl. 79)</td>
<td>75</td>
<td>-</td>
</tr>
<tr>
<td>14.</td>
<td>Phosphates</td>
<td>0.01 to 0.62</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15.</td>
<td>Nitrates</td>
<td>1-9 (expl. 12 &amp; 15)</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>16.</td>
<td>Silicates</td>
<td>5-14 (expl. 21 &amp; 24)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>17.</td>
<td>Sulphates</td>
<td>6-48</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>18.</td>
<td>Sodium</td>
<td>7-52</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19.</td>
<td>Potassium</td>
<td>1-6 (expl. 9)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

[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.

\[
SAR = \frac{\text{Na}}{\sqrt{\frac{(\text{Ca} + \text{Mg})}{2}}}
\]

\[
RSC = (\text{CO}_3 + \text{HCO}_3) - (\text{Ca} + \text{Mg})
\]

\[
PS = \frac{100 \times \text{Na}}{\text{Na} + \text{Ca} + \text{Mg} + \text{K}}
\]

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
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.
ACKNOWLEDGEMENTS

The authors are thankful to the Director, Zoological Survey of India, Kolkata for extending facilities in writing this paper and the Chief Engineer, Irrigation Department, Government of Andhra Pradesh, Hyderabad for permitting us to carry out the study on Pocharam lake.

REFERENCES


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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Month/year →</th>
<th>Loc.↓</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7/03</td>
<td>8/03</td>
</tr>
<tr>
<td>I Temp (Air/Water) (°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₁</td>
<td>25.5/28</td>
<td>35/32</td>
</tr>
<tr>
<td>S₂</td>
<td>28/26</td>
<td>35/32</td>
</tr>
<tr>
<td>S₃</td>
<td>26/26</td>
<td>33/30</td>
</tr>
<tr>
<td>S₄</td>
<td>24/27</td>
<td>33/30</td>
</tr>
<tr>
<td>S₅</td>
<td>32/30</td>
<td>23/26</td>
</tr>
<tr>
<td>S₆</td>
<td>28/26</td>
<td>32/29</td>
</tr>
<tr>
<td>S₇</td>
<td>32/30</td>
<td>22/20</td>
</tr>
<tr>
<td>II pH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₁</td>
<td>7.29</td>
<td>7.4</td>
</tr>
<tr>
<td>S₂</td>
<td>7.81</td>
<td>8.06</td>
</tr>
<tr>
<td>S₃</td>
<td>7.1</td>
<td>7.05</td>
</tr>
<tr>
<td>S₄</td>
<td>8.5</td>
<td>7.54</td>
</tr>
<tr>
<td>S₅</td>
<td>7.57</td>
<td>7.48</td>
</tr>
<tr>
<td>S₆</td>
<td>7.39</td>
<td>7.64</td>
</tr>
<tr>
<td>S₇</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>III EC [microsiemens/cm]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₁</td>
<td>290</td>
<td>400</td>
</tr>
<tr>
<td>S₂</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td>S₃</td>
<td>350</td>
<td>300</td>
</tr>
<tr>
<td>S₄</td>
<td>770</td>
<td>240</td>
</tr>
<tr>
<td>S₅</td>
<td>330</td>
<td>290</td>
</tr>
<tr>
<td>S₆</td>
<td>240</td>
<td>270</td>
</tr>
<tr>
<td>S₇</td>
<td>380</td>
<td>340</td>
</tr>
<tr>
<td>IV Turbidity (NTU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S₁</td>
<td>44</td>
<td>13</td>
</tr>
<tr>
<td>S₂</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>S₃</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>S₄</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>S₅</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>S₆</td>
<td>950</td>
<td>73</td>
</tr>
<tr>
<td>S₇</td>
<td>68</td>
<td>110</td>
</tr>
<tr>
<td>Parameter</td>
<td>Month/year</td>
<td>7/03</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>V Total Dissolved Solids (mg/Lit)</td>
<td>Loc.↓</td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>$S_2$</td>
<td></td>
<td>210</td>
</tr>
<tr>
<td>$S_3$</td>
<td></td>
<td>280</td>
</tr>
<tr>
<td>$S_4$</td>
<td></td>
<td>260</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td>215</td>
</tr>
<tr>
<td>$S_6$</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td>250</td>
</tr>
<tr>
<td>VI Dis. Oxygen (mg/lit.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td>$S_2$</td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>$S_3$</td>
<td></td>
<td>3.9</td>
</tr>
<tr>
<td>$S_4$</td>
<td></td>
<td>0.9</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td>7.5</td>
</tr>
<tr>
<td>$S_6$</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td>8.2</td>
</tr>
<tr>
<td>VII Carbonates (mg/lit.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>$S_2$</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>$S_3$</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>$S_4$</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>$S_6$</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>VIII Bicarbonates (mg/lit.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>$S_2$</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>$S_3$</td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>$S_4$</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>$S_6$</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>Parameter</td>
<td>Month/year</td>
<td>7/03</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Loc. ↓</td>
<td></td>
</tr>
<tr>
<td>IX</td>
<td>S₁</td>
<td>12.6</td>
</tr>
<tr>
<td>Free CO₂</td>
<td>S₂</td>
<td>16.8</td>
</tr>
<tr>
<td>(mg/lit.)</td>
<td>S₃</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>S₄</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td>S₅</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S₆</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S₇</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>S₁</td>
<td>140</td>
</tr>
<tr>
<td>Total Hardness</td>
<td>S₂</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>S₃</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>S₄</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>S₅</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>S₆</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>S₇</td>
<td>165</td>
</tr>
<tr>
<td>XI</td>
<td>S₁</td>
<td>29</td>
</tr>
<tr>
<td>Calcium</td>
<td>S₂</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>S₃</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>S₄</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>S₅</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>S₆</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>S₇</td>
<td>33</td>
</tr>
<tr>
<td>XII</td>
<td>S₁</td>
<td>17</td>
</tr>
<tr>
<td>Magnesium</td>
<td>S₂</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>S₃</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>S₄</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>S₅</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>S₆</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>S₇</td>
<td>21</td>
</tr>
<tr>
<td>Parameter</td>
<td>Month/year</td>
<td>7/03</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Loc.↓</td>
<td></td>
</tr>
<tr>
<td>XIII Chloride</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>$S_2$</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>$S_3$</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>$S_4$</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_6$</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XIV Phosphates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(mg/Lit.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>$S_2$</td>
<td>0.09</td>
<td>0.06</td>
</tr>
<tr>
<td>$S_3$</td>
<td>0.44</td>
<td>0.32</td>
</tr>
<tr>
<td>$S_4$</td>
<td>0.62</td>
<td>0.1</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_6$</td>
<td>0.32</td>
<td>0.06</td>
</tr>
<tr>
<td>$S_7$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XV Nitrates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Mg/lit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>$S_2$</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>$S_3$</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>$S_4$</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>$S_5$</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>$S_6$</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>$S_7$</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>XVI Silicates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(mg/lit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_1$</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>$S_2$</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>$S_3$</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>$S_4$</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>$S_5$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$S_6$</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>$S_7$</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Parameter</td>
<td>Month/year</td>
<td>7/03</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Loc.↓</td>
<td>S1</td>
</tr>
<tr>
<td>XVII</td>
<td>Sulphates</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>XVIII</td>
<td>Sodium</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>XIX</td>
<td>Potassium</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Table 3: Showing the Physico-chemical Parameters of Pocharam Lake [required for Irrigation purpose] during 2003-04

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

M = Monsoon, W = Winter, S = Summer
Fig. 1. Map of Pocharam Lake depicting sampling sites

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

![pH Graph](image)

Fig. 3.
Fig. 4.

![Graph showing Turbidity over time for different locations.](image)

Fig. 5.

![Graph showing TDS over time for different locations.](image)
Fig. 6.

![Dissolved Oxygen Graph](image)

Fig. 7.

![Carbonate Graph](image)
Fig. 8.

![Bicarbonate Values](image)

Fig. 9.

![Chloride Values](image)
Fig. 10.

![Graph of Total Hardness](image)

Fig. 11.

![Graph of Calcium](image)
Fig. 12.

![Magneesium levels over time across different locations.](image)

Fig. 13.

![Phosphates levels over time across different locations.](image)
Fig. 14.

Fig. 15.
Fig. 16.

![Sulphates](image)

Fig. 17.

![Sodium](image)
Fig. 18.

Potassium

Values

Months


Pocharam (V) Pochammaluru Burugapalle Rajpet Wadalpalli Kottapalli Pdampet
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), Pochammamaralu, 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)
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. *Platias quadricornis* Ehrenberg, 1832
Family MYTILINIDAE

*Mytilina ventralis* (Ehrenberg, 1832)

Family TRICHTTRIDAE

*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

*Flinia opoliensis* (Zucharias, 1898)

*Flinia terminalis* (Plate, 1886)

Class CRUSTacea

Subclass BRANCHIPODA

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 *Platias*. Out of the three brachionid genera, *Brachionus* was constituted by eight species with three varieties / forms, the genera *Keratella* and *Platias* 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.
REFERENCES


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

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Species</th>
<th>Poch. (V)</th>
<th>P'ralu</th>
<th>B'Palle</th>
<th>R'pet</th>
<th>K'palle</th>
<th>P'pet</th>
<th>W'parti</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>ROTIFERA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td><em>Brachionus angularis</em></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td><em>B. calyciflorus f. anuereformis</em></td>
<td>+</td>
<td>-</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td><em>B. calyciflorus f. borgerti</em></td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><em>B. calyciflorus var. dorcas</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td><em>B. caudatus</em></td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><em>B. diversicornis</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td><em>B. falcatus</em></td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td><em>B. forficula</em></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><em>B. plicatilis</em></td>
<td></td>
<td>+</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td><em>B. quadridentatus</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td><em>Keratella tropica</em></td>
<td>-</td>
<td>-</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12.</td>
<td><em>Platyiya quadricornis</em></td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td><em>Mytilina ventralis</em></td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td><em>Trichocerca pusilla</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td><em>Lecane (Lecane) curvicornis</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td><em>Lecane (L.) lauterborni</em></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td><em>Lecane (L) leotina</em></td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td><em>Lecane (L) papuana</em></td>
<td>-</td>
<td>+</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td><em>Lecane (L) ungulata</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td><em>Lecane (Monostyla) bulla</em></td>
<td>+</td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td><em>Asplanchnopus bhimavaranensis</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td><em>Testudinella mucronata</em></td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td><em>Filinia opoliensis</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td><em>Filina terminalis</em></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Species</td>
<td>Poch. (V)</td>
<td>P'ralu</td>
<td>B'Palle</td>
<td>R'pet</td>
<td>K'palle</td>
<td>P'pet</td>
<td>W'parti</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------</td>
<td>-----------</td>
<td>--------</td>
<td>---------</td>
<td>-------</td>
<td>---------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td><strong>CLADOCERA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td><em>Moina micrura</em></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td><em>Ilyocryptus spinifer</em></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>27.</td>
<td><em>Chydorus parvus</em></td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>V</td>
<td>VI</td>
<td>VII</td>
<td>VIII</td>
<td>IX</td>
</tr>
<tr>
<td>28.</td>
<td><em>C. barroisi</em></td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td><em>C. reticulatus</em></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>30.</td>
<td><em>C. ventricosus</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td><em>Alona rectangular rectangula</em></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td><em>A. rectangula richardi</em></td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td><em>A. davidi davidii</em></td>
<td>+</td>
<td>+</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>34.</td>
<td><em>A. coastata</em></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>35.</td>
<td><em>Kurzia longirostris</em></td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>COPEPODA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td><em>Heliodiaptomus sp.</em></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>37.</td>
<td><em>Phyllodiaptomus sp.</em></td>
<td>-</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>38.</td>
<td><em>Cyclops sp.</em></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>OSTRACODA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td><em>Strandesia sp.</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>40.</td>
<td><em>Cypris sp.</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>41.</td>
<td><em>Stenocypris sp.</em></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
AQUATIC INSECTS
(HEMIPTERA AND COLEOPTERA)

J. DEEPA AND C.A.N. RAO
Freshwater Biological Regional Centre, Zoological Survey of India
Plot 366/1, Attapur (V), Hyderguda P.O. Hyderabad - 500 048

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 200μ. 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 BELOSTOMATINAЕ
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 HYDR0PHILIDAE
Subfamily HYDR0PHILINAE
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)


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.


2. Ranatra filiformis (Fabricius)


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.


Subfamily NEPINAE

Tribe NEPINI

Genus Laccotrephus (Stal)

3. Laccotrephus griseus (Guerin-Meneville)


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: 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.

4. Laccotrephus ruber (Linnaeus)

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


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 spp. of Belostomatids are so far known from the world.

Subfamily BELOSTOMATINAE

Genus *Diplonychus* (Laporte)

5. *Diplonychus rusticus* (Fabricius)


**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 coxae. Dorsum of the abdomen with alternative dark and transverse band.
Subfamily MICRONECTINAE
Genus *Micronecta* (Kirkaldy)

6. *Micronecta scutellaris scutellaris* (Stal)


**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)


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.


8. Limnometra fluviorum (Fabricius)

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


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.


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 cirri. The pupae are with appendages and do not 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 from 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)


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, punctuation 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)


**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)


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.

ACKNOWLEDGEMENTS

The authors are thankful to the Director, Zoological Survey of India (ZSI), Kolkata and the Officer-in-Charge, Freshwater Biological Station, ZSI, Hyderabad, for providing facilities and encouragement to carry out this work. Our sincere thanks are also due to Dr. G. Thirumalai, Scientist ‘E’ & Officer-In-Charge, SRS/ZSI, and Dr. Animesh Bal, Scientist-E, Kolkata, for their fervent & frequently given encouragement, scientific assistance and lucid suggestions. We also acknowledge the assistance of Dr. S.V.A. Chandrasekhar, Asst. Zoologist, FBS/ZSI, and Mohd. Hakeel, SRF, FBS/ZSI.

REFERENCES


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 DECAPODA Latreille, 1803

Suborder PLEOCYEMA T. A. Burkenroad, 1963

Infraorder CARIDEA Dana, 1852

Superfamily PALAEMONIDAE A. M. Rafinesque, 1815

Family PALAEMONIDAE A. M. Rafinesque, 1815
1. *Macrobrachium banjare* (Tiwari, 1958)
2. *Macrobrachium dayanum* (Henderson, 1893)

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. malcomsonii*

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)


**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,

**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 antennal scale. Appendix masculina of males short and hairy. Telson 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)


**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 antennal scale. Upper and lower edges of rostrum bearing 7 and 6 teeth respectively. First pereiopod equal and slender. Second pereiopod 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; Uttarakhand; Madhya Pradesh; Punjab; Kerala.
Elsewhere : Pakistan.

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

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


112 : 2.


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 pereopod 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; Chhattisgarh; 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)


1950. _Macrobrachium malcomsonii_, Holthuis, _Siboga-Expedit Monogr._, Leiden, 1 39a(9) : 121.


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


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.

**Acknowledgements**

Authors are grateful to the Director, Zoological Survey of India, Kolkata for the facilities to carry out this work. They are also thankful to Dr. C.A.N. Rao, Scientist 'E' and Officer-in-Charge, Freshwater Biological Station, Zoological Survey of India, Hyderabad for sending the crustacean specimens for study. Thanks are also due to Shri A.K. Singh, Scientist 'E' and officer-in-Charge, Fire Proof Spirit Building, Zoological Survey of India, Kolkata for his constant encouragement and inspiration throughout this work.

**References**


MOLLUSCA : POCHARAM LAKE

K.V. SURYA RAO
Zoological Survey of India, M Block, New Alipore, Kolkata - 700 053

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.
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**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.</td>
<td>Collector</td>
</tr>
<tr>
<td>D.</td>
<td>Diameter</td>
</tr>
<tr>
<td>e./exs.</td>
<td>Example, Examples</td>
</tr>
<tr>
<td>f.</td>
<td>form</td>
</tr>
<tr>
<td>Ht.</td>
<td>Height</td>
</tr>
<tr>
<td>L.</td>
<td>Length</td>
</tr>
<tr>
<td>Loc.</td>
<td>Locality</td>
</tr>
<tr>
<td>L.A.</td>
<td>Length of aperture</td>
</tr>
<tr>
<td>L.S.</td>
<td>Length of spire</td>
</tr>
<tr>
<td>mm.</td>
<td>Millimeters</td>
</tr>
<tr>
<td>S.str.</td>
<td>Sensu strict</td>
</tr>
<tr>
<td>T.</td>
<td>Thickness</td>
</tr>
<tr>
<td>Vill.</td>
<td>Village</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Phylum</th>
<th>MOLLUSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>GASTROPODA</td>
</tr>
<tr>
<td>Subclass</td>
<td>PROSOBRANCHIA</td>
</tr>
<tr>
<td>Order</td>
<td>MESOGASTROPODA</td>
</tr>
</tbody>
</table>
1. **Family** VIVIPARIDAE
   **Subfamily** BELLAMYINAE
   **Genus 1.** *Bellamya* Jousseaume, 1886
   1. *Bellamya bengalensis* f. *typica* (Lamarck, 1822)
   2. *Bellamya bengalensis* f. *annandalei* (Kobelt, 1909)
   3. *Bellamya bengalensis* f. *doliaris* (Gould, 1843)
   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
      **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 I 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


**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)


**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)


**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)


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)


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 extension of its distribution to Telangana region.

Bellamya bengalensis f. eburnea (Annandale)


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)


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 inhabitants 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


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


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.


**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)


**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 in having its body whorl shorter than spire; umbilicus not deep, without oblique channel, aperture oval.

Family THIARIDAE

Subfamily THIARINAE

Genus *Tarebia* H. & A. Adams


**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.


**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 LYMNNAEIDAE**

**Genus Lymnaea** Lamarck, 1799


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


**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


**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


**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 *Indoplanorbis* in India.
Indoplanorbis exustus (Deshayes)


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


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 convexiusculus (Hutton)


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)


**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


**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)


**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)


**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 perosstracum; cardinals heavy, rugged, lamellar teeth short, umbonal cavity deep.

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

**Parreysia (Parreysia) corrugata nagpoornensis** (Lea)


**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 *Jevidens* in having less than three numbers of central teeth.

*Parreysia (Parreysia) favidens* (Benson)


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 al. 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


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 convexiusculus 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 nagpoorenis 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.

ACKNOWLEDGEMENTS

The author is thankful to the Director, Zoological Survey of India (ZSI), Kolkata and Dr. C.A.N. Rao, Officer-in-Charge, Freshwater Biological Station, ZSI, Hyderabad, for giving opportunity to study the malacofauna by providing the collections at my disposal and the authorities of Andhra University, Visakhapatnam for providing facilities to undertake the present work. The author is grateful to the Ministry of Environment and Forests, New Delhi.

REFERENCES


ICHTHYOF AUNA OF POCHARAM LAKE, ANDHRA PRADESH, HYDERABAD

C.A. NAGESWARA RAO, HAKEEL MOHD. AND J. DEEPA
Zoological Survey of India, Freshwater Biological Station,
1-1-300/B, Ashoknagar, Hyderabad - 500 020

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

**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**

<table>
<thead>
<tr>
<th>ORDER</th>
<th>FAMILY</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>ORDER</td>
<td>FAMILY</td>
</tr>
<tr>
<td>II</td>
<td>(i)</td>
</tr>
</tbody>
</table>

1. *Notopterus notopterus* (Pallas)

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

1. 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).


**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).


**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).


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).


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,

**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)


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

**Measurements**: 40.5-60.5 cm.


**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)


**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, pl. 19, fig. 86. (Type-locality: Ponds and rivers in Gangetic provinces).


**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).


**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).


**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.


**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)

RAO et al.: Ichthyofauna of Pocharam Lake


**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)


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


**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).


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.


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)


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

**Measurements**: 40 cm.

**Diagnosis**: Body elongate, compressed. Snout broad, mouth sub terminal, barbels 4 pairs, extend posteriorly to pelvic fins or beyond to anal fin. Dorsal spine weakly serrated 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).


**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.


**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)


**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).


**Common name**: Freshwater garfish.

**Measurements**: 50-180 cm.

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

**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).  

**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)  

**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)


**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).


**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).


**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 M., 28-3-04; 1 ex(ZSI/FBS/N/1288), Rajpet, SVAC Sekhar & Hakeel M., 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 M., 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 M., 7-1-05; 6 exs(ZSI/FBS/N/1250), Pochammaralu, SVAC Sekhar & Hakeel M, 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 M., 7-1-05.


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

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

(x) Family GOBIIDAE

Genus *Glossogobius* Gill 1859

22. *Glossogobius giuris* (Hamilton)


**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* Schneider, *Syst. Ichth.* : 164, pl. 36 (Type locality: Tranquebar).


**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.

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)


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.


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 throughout 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 the 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 cotoio var.cunma* (Day), *Ophicephalus gachua* (Ham.), *Ophicephalus marulius* (Ham.), *Cailichrous pabda* (Ham.), *Mystus aor* (Ham.), *Mystus armatus* (Day), *Aorichthyseenghala* (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), Paraluciosoma 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).

ACKNOWLEDGEMENTS

The authors are thankful to the Director, Zoological Survey of India (ZSI), Kolkata for providing facilities and encouragement to carry out this work. Our sincere thanks are also due to Dr. Mrs. Rema Devi, Scientist ‘D’, SRS/ZSI, for her fervent & scientific assistance and lucid suggestions.

REFERENCES


HERPETOFAUNA

C. SRINIVASULU AND BHARGAVI SRINIVASULU
Wildlife Biology Section, Department of Zoology,
Osmania University, Hyderabad - 500 007, Andhra Pradesh, India
email : hyd2_masawa@sancharnet.in

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*


**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


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.


Status: LRlc.

Family MICROHYLIDAE

3. *Microhyla ornata* (Dumeril and Bibron, 1841)

Ornate Narrow-mouthed Frog


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**


**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**: LR lc.

5. *Euphylyctis hexadactylus* (Lesson, 1834)

**Indian Green Frog**


**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**: LR lc.

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

**Cricket Frog**


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.


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.


**Status**: LRlc.

Class REPTILIA

Order CHELONIA

Family BATAGURIDAE

1. *Melanochelys trijuga* (Schweigger, 1812)

**Indian Black Turtle**


**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**


**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*


**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*


**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**


**Material examined**: None.

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

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


**Status**: Not Assessed.

6. *Sitana ponticeriana* Cuvier, 1829

**Fan-throated Lizard**


**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**


**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


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.


Status: LRLc.

10. Hemidactylus giganteus Stoliczka, 1871

Giant South Indian Tree Gecko


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. \textit{Mabuya carinata} (Schneider, 1801)

\textbf{Keeled Grass Skink}


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. \textit{Varanus bengalensis} (Daudin, 1802)

\textbf{Bengal Monitor Lizard}


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**


**Material examined**: None.

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

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


**Status**: LRnt.

Family COLUBRIDAE

14. *Amphiesma stolatum* (Linnaeus, 1758)

**Buff-striped Keelback**


**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**


**Material examined**: None.

**Distribution**: Small waterbodies downstream along the canal down the dam.

**Elsewhere**: Most of India and Sri Lanka.

**Status**: LRnt.

---

16. *Coelognathus helena* (Daudin, 1803)

**Indian Trinket Snake**


**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**


**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**


**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**


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* (Schneider, 1799)

**Checkered Keelback Water Snake**


Material examined: None.

Distribution: Near agricultural fields downstream along the canal down the dam.

Elsewhere: Throughout India, and Indo-Malayan region.


Status: LRlc.

Family ELAPIDAE

21. *Naja naja* (Linnaeus, 1758)

**Spectacled Cobra**


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.


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

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Class/Order</th>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMPHIBIA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>ANURA</td>
<td>BUFONIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>MICROHYLIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>RANIDAE</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>RHACOPHORIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>6</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td></td>
<td>REPTILIA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>CHELONIA</td>
<td>BATAGURIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>TRIOCHYNIIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>SQUAMATA</td>
<td>AGAMIDAE</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>CHAMAELEONIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>GEKKONIDAE</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>SCINCIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>VARANIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>SERPENTES</td>
<td>BOIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>COLUBRIDAE</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>ELAPIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>10</strong></td>
<td><strong>19</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

We thank the Director, Zoological Survey of India, Kolkata for sanction of the Fauna of Pocharam Lake Project to Freshwater Biological Station, Zoological Survey of India, Hyderabad and for the facilities. We also thank Dr. C.A.N. Rao, Officer-in-Charge, Freshwater Biological Station, ZSI, Hyderabad for giving us opportunity to study and inviting us to author this Chapter; the Head, Department of Zoology, Osmania University, Hyderabad for facilities and encouragement. CS acknowledges study permit granted by the Andhra Pradesh Forest Department. We also acknowledge the individual Research Associateship grants from CSIR, New Delhi.

REFERENCES


AVES

C. SRINIVASULU AND BHARGAVI SRINIVASULU
Wildlife Biology Section, Department of Zoology,
Osmania University, Hyderabad - 500 007, Andhra Pradesh, India
email: hyd2_masawa@sancharnet.in

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 state. The first published report was that of Spillet (1968). Since the early 1980’s, intermittent bird surveys by members of Birdwaychters’ 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)

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


Common name: Spot-billed Pelican.

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.


Family PHALACROCORACIDAE

Genus *Phalacrocorax* Brisson, 1760

3. 26. *Phalacrocorax carbo sinensis* (Shaw, 1801)


Common name: Large Cormorant.

Type locality: China.

Remarks: Uncommon, locally migrating species, breeding not recorded.

4. 27. *Phalacrocorax fuscicollis* Stephens, 1826


Common name: Indian Shag.

Type locality: China.

Remarks: Uncommon, locally migrating species, breeding not recorded.
5. 28. *Phalacrocorax niger* (Vieillot, 1817)


**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


**Type locality**: Ceylon and Java.

**Common name**: Darter.

**Remarks**: Uncommon, locally migrating species, breeding not recorded.


---

Order **CICONIIFORMES**

Family **ARDEIDAE**

Genus *Ardea* Linnaeus, 1758

7. 36. *Ardea cinerea* Linnaeus, 1758


**Type locality**: Europe (restricted to Sweden).

**Common name**: Grey Heron.

**Remarks**: Uncommon, locally migrating species, breeding not recorded.

---

8. 37. *Ardea purpurea* Linnaeus, 1766


**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)


**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)


**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


**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)


**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)


**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)


**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)


**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)


**Type locality**: Ceylon.

**Common name**: Painted Stork.

**Remarks**: Common, locally migrating species, breeding not recorded.


Genus *Anastomus* Bonnaterre, 1791

18. 61. *Anastomus oscitans* (Boddaert, 1783)


**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)


**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)


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)


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)


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

Type locality: Japan.

Common name: Eurasian Spoonbill.

Remarks: Common, winter migrant.

Family PHOENICOPTERIDAE
Genus *Phoenicopterus* Linnaeus, 1758

25. 73. *Phoenicopterus ruber* Linnaeus, 1758

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)

Type locality: Java.

Common name: Lesser Whistling Duck.


Family ANATIDAE
Genus *Anser* Brisson, 1760

27. 81. *Anser anser rubirostris* Swinhoe, 1871

Type locality: Shanghai.

Common name: Greylag Goose.


28. 82. *Anser indicus* (Latham, 1790)

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)

Type locality: Tartary.

Common name: Brahminy Shelduck.


30. 91. *Tadorna tadorna* (Linnaeus, 1758)

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

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

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


**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


**Type locality**: Sweden.

**Common name**: Mallard.


35. 101. *Anas strepera* Linnaeus, 1758


**Type locality**: Sweden.

**Common name**: Gadwall.

**Remarks**: Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

36. 103. *Anas penelope* Linnaeus, 1758


**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


**Type locality**: Sweden.

**Common name**: Garganey.

**Remarks**: Uncommon, winter migrant. Seen in small flocks of 200-500 individuals.
38. 105. *Anas clypeata* Linnaeus, 1758


**Type locality**: Sweden.

**Common name**: Shoveller.

**Remarks**: Common, winter migrant. Seen in large flocks of 1000-3000 individuals.

**Genus Rhodonessa** Reichenbach, 1853


**Type locality**: Caspian 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)


**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)


**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.


42. 111. *Aythya fuligula* (Linnaeus, 1758)

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)


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)


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)


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)


Type locality: Dukhun, India.
**Common name**: Pariah Kite.

**Remarks**: Common, resident breeder.

**Genus** *Haliastur* Selby, 1840

47. 135. *Haliastur indus* (Boddaert, 1783)


**Type locality**: Pondicherry.

**Common name**: Brahminy Kite.

**Remarks**: Uncommon, local migrant.

**Genus** *Accipiter* Brisson, 1760

48. 138. *Accipiter badius dussumieri* (Temminck, 1824)


**Type locality**: India, type from Bengal.

**Common name**: Shikra.

**Remarks**: Uncommon, local migrant.

**Genus** *Butastur* Hodgson, 1843

49. 157. *Butastus teesa* (Franklin, 1831)


**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)


**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)


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)


Type locality: Bengal.

Common name: Lesser Spotted Eagle.


Genus *Gyps* Savingy, 1809

53. 185. *Gyps bengalensis* (Gmelin, 1788)


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.


Genus *Neophron* Savingy, 1809

54. 187. *Neophron percnopterus ginginianus* (Latham, 1790)

**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)


**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)


**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


**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


**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 pondicerianus* (Gmelin, 1789)


**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)


**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)


**Type locality**: Mahrratta region, India.
Common name: Jungle Bush Quail.

62. 260. *Perdicula argoondah* (Sykes, 1832)


Type locality: Dukhun, India.

Common name: Rock Bush Quail.

Genus *Pavo* Linnaeus, 1758

63. 311. *Pavo cristatus* Linnaeus, 1758


Type locality: India orientali, Zeylona (= India).

Common name: Indian Peafowl.
Remarks: Common, resident breeder. Common in Pocharam Lake Deer Breeding Centre where it has been noted to breed.

Order GRUIFORMES
Family TURNICIDAE

Genus *Turnix* Bonnaterre, 1791

64. 314. *Turnix tanki* Blyth, 1843


Type locality: No Locality = Bengal, based on drawing by Buchanan Hamilton.

Common name: Yellow-legged Button Quail.

65. 318. *Turnix suscitator taigoor* (Sykes, 1832)


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)


**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


**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)


**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

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)


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)


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)


Type locality: Asia.

Common name: Painted Snipe.

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


**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


**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)


**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)


**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)


**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)


**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 catchment area.

81. 396. *Tringa nebularia* (Gunnerus, 1767)

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


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


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)


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)


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)


**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)


**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)


**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


**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

Type locality: West Coast of Indian Peninsula.

Common name: Brown-headed Gull.


Genus Chlidonias Rafinesque, 1822
91. 458. Chlidonias hybrida (Stephens, 1826)

Type locality: Cawnpore, India.

Common name: Whiskered Tern.


Genus Sterna Linnaeus, 1758
92. 463. Sterna aurantia J.E. Gray, 1831

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

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

1909. *Pterocles exustus erlangeri* Neumann, 1909

Type locality: El Hota, Lahej, southern Arabia.
Common name: Chestnut-bellied Sandgrouse.

Family COLUMBIDAE
Genus *Columba* Linnaeus, 1758


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

1833. *Streptopelia orientalis meena* (Sykes, 1833)

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.

1838. *Streptopelia decaocto* (Frivaldszky, 1838)

Type locality: Dukhun, India.
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)

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)

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)

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)

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)


**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)


**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)

**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


**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


**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)


**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)


**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


**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)


**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)

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)


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)


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 leucomalanura* (Reichenbach, 1851)


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


**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. enlurn.* : 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


**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


**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)

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

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)

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)


**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)


**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)


**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


**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


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


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)


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)


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

1. 886. *Calandrella brachydactyla dukhunensis* (Sykes, 1832)

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

1. 902. *Galerida deva* (Sykes, 1832)

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

1. 907. *Alauda gulgula Franklin*, 1831

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

1. 914. *Hirundo concolor* Sykes, 1833

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 *Hirundo* Linnaeus, 1758

1. 914. *Hirundo concolor* Sykes, 1833

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.
**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)


**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)


**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)


**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* (Linnaeus, 1758)

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)


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)


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


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)


Type locality: Enzeli on the southern shore of the Caspian 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)


Type locality: Dukhun.

Common name: White Wagtail.

Remarks: Common, winter migrant. Frequently sighted in the lakebed area and in agriculture fields in the catchment area.

144. 1886. **Motacilla alba personata** (Gould, 1861)


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)


Type locality: India.

Common name: White Wagtail.


146. 1891. **Motacilla maderaspatensis** Gmelin, 1789


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)


**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)


**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)


**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)


**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)


**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)


**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


**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)

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

Type locality: Pondichery.

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)

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)

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

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.

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)

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

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)

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)

Type locality: Calcutta.

Common name: Red-chinned Bushchat.

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)

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)

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)

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)

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.

167. 1262. Turdoides striatus orientalis (Jerdon, 1847)

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.
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. *Turdoïdes affinis* (Jerdon, 1847)


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)


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


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


**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


**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)


**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)


**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)


**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)


**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


**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)


**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


**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


**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)


**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

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)

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)

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)

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)

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.
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

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

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.

Genus *Ploceus* Cuvier, 1816
188. 1957. *Ploceus philippinus* (Linnaeus, 1766)

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)

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)

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)

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

**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* Vieillot, 1816

193. *Dicrurus macrocercus* Vieillot, 1817

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. *Dicrurus caerulescens* (Linnaeus, 1758)

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. *Artamus fuscus* Vieillot, 1817

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)


**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


**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


**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

<table>
<thead>
<tr>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>PODICIPITIFORMES</td>
<td>PODICIPEDIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PELICANIFORMES</td>
<td>PELECANIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>PHALACROCAROCIDAE</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ANHINGIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CICONIIFORMES</td>
<td>ARDEIDAE</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>CICONIIDAE</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>THRESKIORNIDAE</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHOENICOPTERIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ANSERIFORMES</td>
<td>DENDROCYGNIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ANATIDAE</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>FALCONIFORMES</td>
<td>ACcipitiridae</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>PANDIONIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>FALконIDA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>GALLIFORMES</td>
<td>PHASIANIDAE</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>GRUIIFORMES</td>
<td>TURNICIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>RALLIDAE</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CHARADRIIFORMES</td>
<td>JACANIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>RoSTRATULIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CHARADRIIDAE</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>RecurVIROSTRIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>GLAREOLIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>LARIDAE</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>RYNCHOPIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>COLUMBIFORMES</td>
<td>PTEROCLIDIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>COLUMBIDAE</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>PSITTACIFORMES</td>
<td>PSITTACIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CUCULIFORMES</td>
<td>CUCULIDAE</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>STRIGIFORMES</td>
<td>TYTONIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>STRIGIDAE</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Order</td>
<td>Family</td>
<td>Genus</td>
<td>Species</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>CAPRIMULGIFORMES</td>
<td>CAPRIMULGIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>APODIFORMES</td>
<td>APODIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HEMIPROCNIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CORACIIFORMES</td>
<td>ALCEDINIDAE</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MEROPIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CORACIIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>UPUPIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>BUCEROTIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PICIFORMES</td>
<td>CAPITONIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PICIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PASSERIFORMES</td>
<td>ALAUDIDAE</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>HIRUNDINIDAE</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MOTACILLIDAE</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>CAMPEPHAGIDAE</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PYCNONOTIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>IRENIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>LANIDAE</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MUSCICAPIDAE</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>DICAEGIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>NECTARINIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ZOSTEROPIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ESTRILIDIDAE</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PLOCEIDAE</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>STURNIDAE</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ORIOLIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>DICRURIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ARTAMIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CORVIDAE</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

We thank the Director, Zoological Survey of India, Kolkata for sanction of the Fauna of Pocharam Lake Project to Freshwater Biological Station, Zoological Survey of India, Hyderabad and for the facilities. We also thank Dr. C.A.N. Rao, Officer-in-Charge, Freshwater Biological Station, ZSI, Hyderabad for giving us opportunity to study and inviting us to author this Chapter; the Head, Department of Zoology, Osmania University, Hyderabad for facilities and encouragement. CS acknowledges study permit granted by the Andhra Pradesh Forest Department. We also acknowledge the individual Research Associateship grants from CSIR, New Delhi.

REFERENCES


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 Fuunal 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


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*


**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, Uttarakhand, Uttar Pradesh and West Bengal.

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

**Remarks**: Fairly common fruit bat sighted in village 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, Uttarakhand and West Bengal.

**Elsewhere**: Pakistan; Sri Lanka, Bangladesh and Maldives.

**Remarks**: Uncommon fruit bat, occasionally seen feeding 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**


**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**


**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**


**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** Lácepéde, 1799

7. **Macaca mulatta** (Zimmermann, 1780)

**Rhesus Macaque**


**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**


**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**


**Distribution**: India: Andhra Pradesh, Chattisgarh, Madhya Pradesh, Maharashtra.

**Elsewhere**: Nowhere.

**Remarks**: Common, seen in small troops in scrub forest, orchards and agriculture fields surrounding the Pocharam Lake.

**Status**: Near Threatened.

Order CARNIVORA

Family CANIDAE

Genus *Canis* Linnaeus, 1758


**Asiatic Jackal**


**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**


**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**


**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**


**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**


**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


**Distribution**: India: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chattisgarh, Jharkhand, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Uttarakhand, 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


**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

**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**


**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**


**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)


**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. *Funambulus pennantii* Wroughton, 1905

Northern Palm Squirrel


**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


**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

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

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

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**


**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**


**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 which 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**

<table>
<thead>
<tr>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSECTIVORA</td>
<td>SORICIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CHIROPTERA</td>
<td>PTEROPODIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>RHINOPOMATIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>VESPERTILIONIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>PRIMATES</td>
<td>CERCOPITHECIDAE</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>CARNIVORA</td>
<td>CANIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>FELIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HERSPETIDAE</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>URSIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ARTIODACTyla</td>
<td>SUIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CERVIDAE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>BOVIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>RODENTIA</td>
<td>SCIURIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MURIDAE</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HYSTRICIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>LAGOMORPHA</td>
<td>LEPORIDAE</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>23</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

We thank the Director, Zoological Survey of India, Kolkata for sanction of the Fauna of Pocharam Lake Project to Freshwater Biological Station, Zoological Survey of India, Hyderabad and for the facilities. We also thank Dr. C.A.N. Rao, Officer-in-Charge, Freshwater Biological Station, ZSI, Hyderabad for giving us opportunity to study and inviting us to author this Chapter; the Head, Department of Zoology, Osmania University, Hyderabad for facilities and encouragement. CS acknowledges study permit granted by the Andhra Pradesh Forest Department. We also acknowledge the individual Research Associateship grants from CSIR, New Delhi.

REFERENCES


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 3: Molluscs of Pocharam Lake

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

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*