

DEPARTMENT OF ZOOLOGY

PROSPECTUS 2009



University of the Punjab



Supervised By: **PROF DR. SYED SHAHID ALI &
ABDUL MAJID KHAN**

Designed By: **ABDUL REHMAN**

Message from the ...



Vice-Chancellor

IT is indeed a matter of immense pleasure for me to welcome you in the Zoological sciences in particular and life sciences in general in the University of the Punjab. It shows your enthusiasm and interest in this Department. This department is playing a key role in imparting knowledge and disseminating scientific information in different basic and modern disciplines of animal sciences.

Animal proteins (meat and milk) are an important part of our daily diet. The deficiency of these food items can cause illness and bad health. At the same time some animals are carriers of many human diseases and some are hosts for fatal parasitic diseases. This department provides solution to various problems by imparting training in Biochemistry, Biotechnology, Cell and Molecular Biology, Ecology Entomology, Genetics, Paleontology, Parasitology, Physiology/ Endocrinology, Fisheries, Molecular genetics, Immunology, Bioinformatics, Toxicology and several other. The Department has very elaborate Ph.D, MS, M.Sc., and BS., Programs. So, the department encourages the students to undergo practical training along with theoretical knowledge.

A handwritten signature in blue ink, which appears to read 'Mujahid'.

Professor Dr. Mujahid Kamran



Chairman

IT gives me great pleasure to welcome you as an aspirant to be students of Department of Zoology. The main emphasis of the department is to prepare manpower for leadership positions in government organizations (universities, colleges, schools, wildlife and fisheries, forestry and agriculture, pharmaceutical industries and diagnostic laboratories). There is no doubt that the Department of Zoology since its inception has played a pivotal role in the national development by producing trained manpower. Five zoologists have been retired as Vice-Chancellors of various universities of Pakistan and three are working Vice-Chancellor of public and private sectors Universities.

The department also takes keen interest in academic and scientific activities and provides high quality and quality and career oriented education from B.Sc. (Hons.) to Ph.D With specialization in Cell and Molecular Biology, Entomology, Parasitology, Paleontology, Microbiology, Endocrinology, Developmental Biology, Biochemistry, Toxicology and Fisheries etc. I expect, you to be regular in studies, hardworking, and also to abide by the rules and regulations which is the basic requirement to seek knowledge and to maintain healthy and clean atmosphere of the institution. The faculty of the department is highly qualified, competent and co-operative. May God bless you the wisdom and intelligence to accomplish your objectives in life.

Prof. Dr. Muhammad Akhtar



Himalayan Monal pheasant
(*Lophophorus impejanus*)

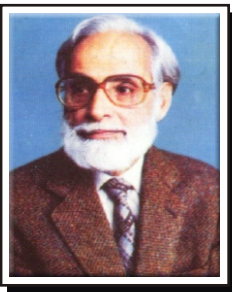
Department of Zoology



THE Department of Zoology, University of the Punjab was established in 1921 and housed in the laboratories of the Government College, Lahore during these times. The teaching was being done jointly by the University and the College faculties. The Head of the Department of Zoology, Government College, was also Head of the Department of Zoology, University of the Punjab. This administrative arrangement continued till 1942 when Head of the Department of Zoology, Government College retired and University appointed its own Head of the Department, but the teaching continued to be conducted jointly as before till 1963.

In 1963, the University of the Punjab shifted Department of Zoology to its New Campus, now called Quaid-e-Azam Campus. Since then, the University of the Punjab is carrying out teaching and research in Zoology independently.

ACADEMIC FACULTY MEMBERS



Dr. Muzaffer Ahmed

Professor Emeritus

Ph.D. (Chicago)

Specialization/Study Area

Entomology; Termite Biology

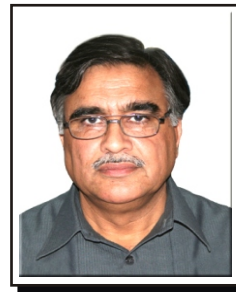


Prof. Dr. Tanveer Akhtar

Ph.D. (PU)

Specialization/Study Area

Parasitology & Wildlife



Prof. Dr. S. Shahid Ali

Ph.D. (PU)

Specialization/ Study Area

Toxicology, Bio-Chemistry & Biotechnology



Prof. Dr. Muhammad Akhtar

Chairman

Ph.D. (PU)

Specialization/Study Area

Mammalian Palaeontology



Prof. Dr. Javed Iqbal Qazi

Ph.D. (PU)

Specialization/Study Area

Environmental Microbiology & Muscle
Transplantation



Prof. Dr. M. Naeem Khan

Registrar

Ph.D. (Canada)

Specialization/Study Area

Fisheries



Dr. Asmatullah

Associate Professor

Ph.D. (PU)

Specialization/Study Area

Developmental Biology & Teratology



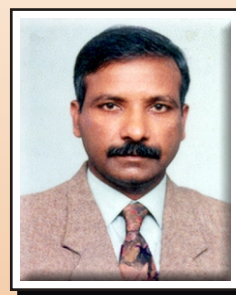
Dr. M. Shafiq Ahmad

Associate Professor

D.Sc. (Leuven)

Specialization/Study Area

Aquatic Toxicology & Environmental Biology



Dr. Zafar Iqbal

Associate Professor

Ph.D. (Stirling)

Specialization/Study Area

Aquaculture & Fish Health Management

ACADEMIC FACULTY MEMBERS



Dr. Najma Shaheen

Assistant Professor

Ph.D. (PU)

Specialization/Study Area

Immunology



Dr. Abida Butt

Assistant Professor

Ph.D. (UAF)

Specialization/Study Area

Entomology



Dr. Nabila Roohi

Assistant Professor

Ph.D. (PU)

Specialization/Study Area

Physiology & Clinical Endocrinology



Dr. Nadeem Sheikh

Assistant Professor

Ph.D. (Göttingen)

Specialization/Study Area

Molecular Biology, Molecular Entomology
and Molecular Taxonomy



Dr. Ayesha Aihetasham

Assistant Professor

Ph.D.(PU)

Specialization/Study Area

Entomology



Dr. Nasreen Muzaffar

Honeybee Consultant

Ph.D. (PU) "

Specialization/Study Area

Apiculture



Dr. Shagufta Andaleeb

Lecturer (Contract)

Ph.D(PU)

Specialization/Study Area

Microbiology



Mr. Abdul Majid Khan

Lecturer (Contract)

M.Sc. (UAAR)

Specialization/Study Area

Palaeontology, Fisheries



**Mr. Khizar Samiullah
Malik**

Lecturer (Contract)

M.Sc. (KU)

Specialization/Study Area

Mammalian Palaeontology



Western horned tragopan
(*Tragopan melanocephalus*)

INTRODUCTION



Some Senior zoologist from the
Department of Zoology, University of
the Punjab, Lahore.



Vice-Chancellor Prof. Dr. Mujahid Kamran at the
inaugural ceremony of annual fish sale at fish
research farm



Visit of the Iranian delegate to the Zoology
Department headed by Vice-Chancellor of Iranian
open University.

THE discipline of zoology, a which is subdivision of natural sciences, meets the need of trained manpower in a vast basic and interdisciplinary framework concerning animal sciences. The department has earned international recognition for academic excellence and prominence in various fields of research like cell biology, molecular biology, physiology, developmental biology, entomology, microbiology, palaeontology, parasitology, environmental biotechnology, toxicology, clinical endocrinology, fisheries etc. A zoology graduate after Master's or BS 4 year degree has diverse experience and competence to serve or learn further in education, health, agriculture, fisheries, biotechnology wildlife, environment and other relevant sectors including various research organizations. The department has one of the most highly trained faculty of zoology in the country. Almost all disciplines of zoological sciences are represented and hence distinguish the department of zoology of this university from other universities in Pakistan.

ADMISSION CRITERIA AND ALLOCATION OF SEATS



Marco Polo sheep
(*Ovis ammon*)



Student working in research lab



A view of the research lab in the department

ALL the admissions will be conducted strictly in accordance with the Rules and Regulations framed by University of the Punjab / Higher Education (HEC) of Pakistan.

NOTE:



According to the direction from the Chief Minister (Punjab) no admission will be made on self finance basis this year.



In the meeting of 29-1-2009, it was also decided that 50% seats in master program of all the department both in (Morning & Evening) shall be reserved for the graduate from the colleges, affiliated with University of the Punjab , and rest 50% Seats shall be filled on open merit.

Programs	Total Available Seats	Seats to be filled on Merit	Number of reserved seats	Qualification required
B.S. (4-Years)	36	30	6	F.Sc. (Premedical)/ Equivalent
M.Sc.	53	46	7	B.Sc. (2-Years) Pass Course
M.S.	15	15	NIL	B.S. (4-Years)
M.Phil.	15	15	NIL	M.Sc. (2-Years)
*Ph.D.	Not Fixed	Not Fixed	NIL	M.S./M.Phil.

*Ph.D. seats will be decided at the time of admission each year keeping in view available expertise, funds and lab facilities.



Himalayan brown bear
(*Ursus arctos*)

RESERVED SEATS

Note: Reserved Seats shall be offered only to students eligible according to the university admission Regulations.

(i) Children / Spouses / Real Brothers / Sisters of the Punjab University Teachers, serving or retired (excluding Teachers on deputation / part-time Teachers), with a service of not less than 5 years. Preference will be given to children.	2.5% (with a minimum of one seat)
(ii) Children / Real Brothers of Sisters of the Punjab University Employees, serving or retired, with a service of not less than 5 years. Preference will be given to children.	2.5% (with a minimum of one seat)
(iii) Foreign students (whose names are recommended by the Ministry of Education, Govt. of Pakistan, according to the prescribed procedure).	1% (with a minimum of one seat) Vice-Chancellor may permit the admission of more than one eligible foreign applicants on the recommendations of the Chairman of the Department.
(iv) Children of martyrs / war disabled personnel of the Defence Forces (in the absence of this category, children of serving or retired personnel of the Armed Forces) to be nominated by the G.H.Q. General Branch.	1% (with a minimum of one seat)
(v) Disabled persons on humanitarian grounds (to be approved by the Vice-Chancellor after a case has been made out by the Chairman of the Department and is supported by the Dean, Faculty of Life-Sciences and the Committee constituted for this purpose).	2% (with a minimum of one seat)
(vi) Outstanding Sports Persons (selected on the recommendations of the Special Committee appointed by the Vice-Chancellor for the said purpose).	2% (with a minimum of one seat)
(vii) Special seats for internally displaced people of Swat and Malakand.	2 seats

B.S. (4-YEARS) PROGRAM



Nilgai
(*Boselaphus tragocamelus*)

THE B.S. (4-Years) degree program in Zoology was introduced under the instructions of Higher Education Commission of Pakistan in 2005 and spread over eight semesters. Each semester is of 18-weeks duration which includes 17-weeks for teaching and 1-week to conduct examinations.

POINTS TO REMEMBER!

- 75 % attendance is mandatory to appear in the exam. Student having less than 75% attendance have repeat the course when offered in the coming semester
- Minimum 50% marks or D Grade is essential to qualify each course.
- Resit exam is only allowed on medical ground or in other genuine reason on production of medical certificate or other solid evidence duly signed by the competent authority.
- The dues for resit exams will be @ Rs. 1000/- for one subject; Rs. 2000/- for two subjects and Rs. 2500/- for three or more than three subjects.
- At the end of each semester student must obtain a minimum grade point average (GPA) of 2.0 to promote in to the next semester.
- In case the student is able to (obtain) GPA 1.7 but less than to 2.00, he/ she will be promoted to second semester on probation.
- The candidate who fails to secure 1.7 GPA in a semester shall stand automatically dropped from the rolls of the department.

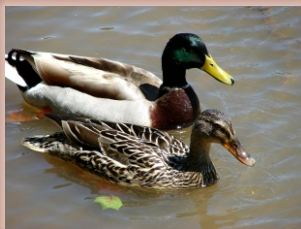
NOTE: Same rule also applicable to MS/M.Phil. & Ph.D. semester classes. The detailed copy of the rules is available in the departmental office on payment of Rs. 25/-

Eligibility for Admission

The applicants with F.Sc. (Pre-medical) or equivalent recognized qualification are eligible for admission to B.Sc. (4-Years)

Credit Hours

The B.S. (4-Years) program will be minimum of 130 credit hours (8 Semester) for 4-years degree program.



Mallard duck
(*Anas platyrhynchos*)

B.S. (4-YEARS) PROGRAM

NOTE: (NTS entry test or departmental entry test is not required for current admission)

Duration of Programme:

Eligibility Requirement:

Medium of Instruction & Examination:

4 years (Eight Semesters)

F.Sc. (Pre-Medical) or Equivalent

English

1ST YEAR

Semester I	
Subjects	Credit
Zoology-I	3+1
Botany-I	3+1
Chemistry-I	3+1
English	2+0
Islamiat	2+0
Computer Applications	2+0

Semester II	
Subjects	Credit
Zoology-II	3+1
Botany-II	3+1
Chemistry-II	3+1
English	2+0
Pak. Studies	2+0
Maths	2+0

2ND YEAR

Semester III	
Subjects	Credit
Zoology-III	3+1
Botany-III	3+1
Chemistry-III	3+1
English	2+0
Maths	2+0
Elective-I	2+0

Semester IV	
Subjects	Credit
Zoology-IV	3+1
Botany-IV	3+1
Chemistry-IV	3+1
English	2+0
Maths	2+0
Elective-II	2+0

NOTE: The courses mentioned above are for the First 2 years (4 semesters) common studies conducted at the undergraduate section. The remaining 4 semesters (3rd & 4th year) courses will be conducted by the department of Zoology. Further details are available in the department office.

M.Sc. PROGRAM



Himalayan snow leopard
(*Uncia uncia*)

THE department has an elaborate M.Sc. program for the external B.Sc. Pass course (2 years) students coming from various colleges. The department is accommodating the B.Sc. (2 years) students from all over Pakistan since decades for this 2 years pass course system.

REQUIREMENTS FOR M.Sc. DEGREE

The M.Sc. degree program will be spread over two years, which involve extensive teaching of all the basic (compulsory) courses as well as special paper / research projects. A minimum of 75% attendance is required both in the theory and laboratory components of each course to sit in exam.

NOTE: Entry Test is not required for this admission

M.Sc. Part I			M.Sc. Part II		
Paper #	Subjects	Marks	Paper #	Subjects	Marks
I	Biochemistry	100	I	Environmental Biology	100
II	Cell & Molecular Biology	100	II	Evolution & Systematic zoology (3:2)	100
III	Genetics & Biostatistics (3:1)	100	III	Paleontology & zoogeography (1:1)	100
IV	Physiology	100	IV	Research / Special Paper	200
V	Developmental Biology	100	V	Supporting / Elective Course	100
VI	Animal Diversity & Wildlife	100			
Total Marks		600	Total Marks		600

Besides above course work, the students will be required to give seminars on topics of current interest and present research papers, participate in discussions and in field study trips arranged by the Department.

M.Sc. REPLICA

DUE to increasing demand of the graduates in life-sciences and for those deserving students who could not get admission in the morning M.Sc. Class, the Evening M.Sc. program was launched as a Replica program. This class also accommodates the in-service persons who could attend the classes in the evening. However, only those students are admitted in the evening class who fulfill the normal prerequisites for M.Sc. morning class. Students of Replica program generally, enjoy all the benefits of a university student. The approximate total dues for 2 year degree are Rs.125,000.

There is no fee concession / wavier scholarships in evening program.



Houbara bustard
(*Chlamydotis undulata*)

M.S. / M.Phil. PROGRAM

THE M.S./M.Phil Program is of 2-years duration (30 credit hours) spread over four semesters. There will be 24 credit hours course work and 6 credit hours thesis (Research Work). The 24 credit hours course work will be completed during first two semesters (12 credit hours / semester) and 6 credit hours Research work will spread over the next 2 semesters. Following advertisement by the university, Entry Test will be arranged by the Department. Equal number of applicants will be admitted for MS and M.Phil. Programs on merit following their Eligibility.

Admission Schedule

Admission for the MS/ M.Phil degree, generally, will be made only once a year.





ELIGIBILITY FOR ADMISSION

The applicant who has qualified B.S. 4 years / M.Sc. in Zoology will be eligible for admission in M.S./M.Phil Program. The applicant must have 2.5 CGPA in B.S. 4. Year program or First division in M.Sc. Zoology. Only those applicants who have qualified GRE/GAT(NTS) General Test are eligible for admission.

STUDENTS FEES AND OTHER CHARGES

Fees and other charges shall be the same as for M.Sc. Degree Program, except an additional Departmental charges of Rs. 5000/-

TUITION FEE FOR FOREIGN STUDENTS

-  Fee shall be payable to the University.
-  The candidates will not be granted admission until the prescribed fee has been deposited in the Bank.
-  The above mentioned fees will be charged in addition to the usual prescribed fee of the University in the Department.
-  All foreign students are required to provide a bank guarantee for the payment of all the University dues in the subsequent years of their studies.

Ph.D. PROGRAM



Green Sea Turtles
(*Chelonia mydas*)

THE Department of Zoology stands amongst those departments / institutes of the University of the Punjab, which have been producing maximum number of Ph.Ds. One hundred and ten (110) Ph.D. degrees have been awarded by this Department upto 2009. The theses are evaluated by experts from technologically advanced countries for the award of degree. Previously students were directly registered in various research disciplines after their master's degree. Following registration the scholars were required to carry out research under the supervision of their respective supervisors. The candidates may carry on research work in laboratories of other well-reputed organizations. Infact, many scientists working in National and International Organizations had been registered in this way. Candidates holding degrees in Zoology, MBBS, B. Pharmacy, Agriculture and Veterinary Sciences had been availing this facility. After working out the research problem, under careful supervision, the research dissertations are submitted for examinations. Since 2001 Higher Education Commission (HEC) approved regular Ph.D Program has been started which has replaced the previous external program. MS/M.Phil (3.0 CGPA) is the pre-requisite basic qualification for admission to this program along with several others. The candidates has to complete initially a course work of 18 credit hours, followed by comprehensive examinations before commencement of Ph.D research project. The Ph.D Scholar can submit his/her dissertation based upon findings of research work with in the period of 3-5 years

Subsequently the candidates present themselves for public defense and are later on examined by internal (supervisor) and external examiners. The success of a candidate is then notified by the University.



A silkworm
(*Bombyx mori*)

COMPUTER LAB & LIBRARY



STUDENTS WORKING IN
COMPUTER LAB



STUDENTS WORKING IN
LIBRARY

HOSTEL ACCOMMODATION



Chairman Hall Council
Punjab University

THE seats in the boys and girls hostels are limited and shall be allotted strictly on merit. The students cannot claim the hostel accommodation as their right. Only morning regular classes are eligible for hostel accommodation. Office of the chairman hall council will define the eligibility criteria for allotment of rooms in the hostels. Students in the evening program can not avail Hostel facility.

INTER- DEPARTMENTAL MIGRATION

INTER-departmental may be allowed on the recommendation Migration of the Chairmen/Directors/ Principles concerned, with the written approval of the Dean of the Faculty/Principal of the Constituent College, provided that, the student concerned would have been offered admission, on merit basis in the department to which he/she wishes to migrate. The migration will be allowed with in 2 weeks after commencement of class. The migration will be allowed only in genuine cases. Registration fee of Rs. 1400/= will be charged from students of University other than Punjab University.

FISH RESEARCH FARM



A major carp
(*Catla catla*)

Punjab University fish research farm was established in June 2001 under the supervision of Meritorious Professor of Zoology Dr. A. R. Shakoori, Ex. Chairman, Department of Zoology. The worthy Vice-Chancellor Lt. Gen. Arshad Mehmood very generously provided the funds for this project. The objective of the Fish Research Farm was to create research and teaching facilities for undergraduate and post graduate students in the field of freshwater fisheries and aquaculture. Fish Research Farm comprises of an area of 5 acres, including nursery ponds, research ponds and production ponds. Now students are working in various areas of fisheries such as fish disease, fish physiology, fish nutrition etc; taking full benefits of this facility created at Quaid-e-Azam Campus, Lahore. Students from other universities also use the facilities of Fish Research Farm for their studies. In addition to teaching and research table fish is also produced for sale to the faculty and staff members of the Punjab University.



Inauguration of fish sale by the worthy
Vice-Chancellor



A view of Punjab University Fish Research Farm
at Quaid-e-Azam Campus, Lahore.

Approximately 2500-3000kg fish is annually sold to the employees of Punjab University. In near future the Fish Research Farm will be upgraded as institute of Aquaculture, where teaching and research will be carried out at undergraduate and postgraduate level for development of the fisheries and aquaculture sector.



HONEY BEE RESEARCH PROJECT



A view of Honey Bee Hive showing workers.



A view of different Colonies of Bees.

In view of economic importance of honeybee farming, University of the Punjab has embarked upon research and development activities on honeybee from 2004 onwards. The European bee *Apis mellifera* farm comprising 200 hives has been established at the campus. Research work is being carried out for improvement in management techniques, quality queen breeding and control of pests and diseases to increase honey yield of colonies. Further infra-structure is being developed for teaching and research facilities. Beekeeping training programmes and workshops for honeybee management have been organized at the campus for dissemination of technical knowledge among students, farmers, extension workers, officers of alien department and hobbyists. Special emphasis is being given on generating awareness about the crucial factor of bee pollination required for increased productivity of oilseed, vegetable seed, fodder seed crops and fruits in Pakistan.

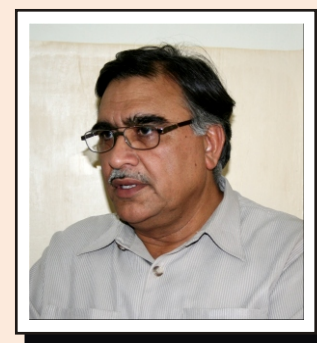
PUBLICATION OF RESEARCH



Lime Butterfly
(*Papilio demoleus*)

Punjab University Journal of Zoology (*Punjab Univ. J. Zool.*)

The Department of Zoology has been publishing its own research journal since 1985, the "*Punjab University Journal of Zoology*" for the promotion of research and its publication in all its branches, both pure and applied. This journal is a continuation of old and irregular publication series by the department the "*Bulletin, Department of Zoology*" first published in 1931 and ceases its publication in 1983. The title of its first article was "Butterflies of Lahore by D. R. Puri" which is still available in the departmental library. Initially, this journal was published as one issue yearly but from 2005 onwards 2 issues are being published per year. Prof. Dr. S. Shahid Ali and Prof. Dr. Javed Iqbal Qazi are currently working as Editor and Co-Editor of the Journal, respectively. The journal has a wide circulation in and outside the country. The department is getting some very good journals and publications by developing its exchange with other countries.



Editor, Punjab University
Journal of Zoology





Sindh ibex
(*Capra aegagrus*)

ZOOLOGICAL SOCIETY OF PAKISTAN



Vice-Chancellor Prof. Dr. Mujahid Kamran at the inaugural session of Pakistan congress of Zoology .



Delegates attending the inaugural session of zoological congress.

The Zoological Society of Pakistan (ZSP) was established in 1968 at Dacca (the capital city of then East Pakistan) by a group of zoologists gathered over there at the occasion of Pakistan Science Conference. The main objectives of the society were to promote the teaching and research in the subject of zoology in all its sub-disciplines by publishing a research journal for publication of research conducted by various research organizations and universities in Pakistan and to provide a common forum for researchers to present their research in the conferences, seminars and symposia arranged by the society. The ZSP published first issue of its journal "Pakistan Journal of Zoology" in 1969 and since then it is being published uninterruptedly. Initially its frequency was 6 monthly but now it is being published bimonthly (6 issues a year). This journal is included in list of "HEC (Higher Education Commission) approved" journals and has wide circulation within Pakistan and throughout world. It is 3rd Pakistani journal which has got impact factor from ISI. The society is receiving large number of very important foreign research journal through developing exchange with other societies and research organizations. The society also holds its annual congress the "Pakistan Congress of Zoology". The 1st congress was held in 1981 at the Department of Biological Sciences, Quaid-e-Azam University, Islamabad. The annual congress is a permanent feature of ZSP. Last year (in 2006), as per desire of the worthy Vice Chancellor, (Lt. Gen. (R.) Arshad Mehmood), the Zoology Department organized/hosted 26th Pakistan Congress of Zoology in Punjab University for which he provided funds very generously. This year 29th Pakistan congress of Zoology was held at University of Sindh, Jamshoro. Since its establishment the office of the ZSP is permanently housed in zoology department, Punjab University. The key figure in regulating all the major activities of the ZSP is the Distinguished National Professor Dr. A. R. Shakoory, the Director, School of Biological Sciences (PU) who is also the current secretary general of the Zoological Society of Pakistan. It is due to his untiring efforts, work and dedication that ZSP has achieved high ranking status among scientific societies in Pakistan.

STUDY TOURS



Fighting black bucks
(*Antelope cervicapra*)



PHASES of continuous teaching and laborious research work are intervened by some relaxing activities. At the beginning, end and during the session long and short study tours are arranged. Ecological studies of mountainous habitats and fauna and flora of high altitude environment is a more or less permanent activity of the department. University hostels in Khanaspur (Murree) hills provide very congenial facilities for camping and such studies. Apart from the long tours, short, one day visits to various research organizations, within and outside Lahore, are arranged for different classes or groups according to their syllabi or specializations.