

# PAKISTAN JOURNAL OF ZOOLOGY

## Volume 39, 2007

### CONTENTS

#### NUMBER 1

##### Environmental Pollution

- YOUSAFZAI, A.M. AND SHAKOORI, A.R.  
Heavy metal bioaccumulation in the muscles  
of Mahaseer, *Tor putitora*, as an evidence of  
heavy metal pollution in River Kabul,  
Pakistan.....1

##### Pests and Pest Control

- KANVIL, S., JILANI, G. AND REHMAN, J.  
Repellency of ethanol extract of some  
indigenous plants against *Tribolium*  
*castaneum* (Herbst) (Coleoptera:  
Tenebrionidae)-III.....9
- HASSAN, I., JAVED, A.H. AND EHSAN-UL-  
HAQ. Microclimatic distribution analysis of  
bird cherry oat aphid, *Rhopalosiphum padi*  
L. on wheat.....21
- PERVEZ, A. Laboratory evaluation of some  
additive poison baits for controlling  
commensal and field rodents.....35

##### Entomology

- BASHIR, M.H. AND AFZAL, M. A new cunaxid  
mite of genus *Pulaeus* (Cunaxidae) from  
Punjab, Pakistan.....17
- KHAN, M.R., RAFI, M.A., MUNIR, M.,  
HUSSAIN, S., BAIG, M.W. AND KHAN,  
M.W. Biodiversity of butterflies from  
districts Kotli, Mirpur and Bhimber, Azad  
Kashmir.....27
- SHAH, Z.A. AND FATIMA, Z. Impact of flesh  
age, trap color and decomposition stage on  
the population dynamics and species  
composition of calliphoridae and  
sarcophagidae.....45

##### Parasitology

- KAKAR, A. AND BILQEES, F.M. *Rhabdochona*  
*uvaginus*, new species (Nematoda:  
Rhabdochonidae) from the fish *Tor putitora*  
of River Bolan, Balochistan.....51

##### Molecular Biology and Bioinformatics

- KALEM, A., KHAN, T.S., AHMAD, W.,

- SALEEM, M., KHAWAJA, A.R.,  
HUSSAIN, S.A., SHAKOORI, A.R. AND  
NASIR-UD-DIN. Post-translational  
modifications of non-histone high mobility  
group nucleosomal proteins..... 57
- Corrigendum ..... 26
- Obituary note ..... 44
- Instructions for contributors..... 65

#### NUMBER 2

##### Environmental Pollution

- REHMAN, A., SHAKOORI, F.R. AND  
SHAKOORI, A.R. Seasonal variation in  
protozoan population in tannery effluents ..... 69

##### Pests and Pest Control

- SHAFIQUE, M. AND CHAUDRY, M.A.  
Susceptibility of maize grains to storage  
insects..... 77
- HAMED, M., KHAN, R.A. AND RIAZ, S.  
Toxicity of Steward (Indoxacarb) against  
cotton bollworm, *Helicoverpa armigera*  
(Hub.)..... 83
- KHATTAK, M.K., RIAZUDDIN AND  
ANAYATULLAH, M. Population dynamics  
of aphids (Aphididae: Homoptera) on  
different wheat cultivars and response of  
cultivars to aphids in respect of yield and  
yield related parameters..... 109
- FARID, A., KHAN, M.I.N., KHAN, A.,  
KHATTAK, S.U.K., ALAMZEB AND  
SATTAR, A. Studies on maize stem borer,  
*Chilo partellus* in Peshawar valley ..... 127
- KHAN, R.A. AND JAMIL, F.F. Estimation of  
toxicity of spinosad using two different  
bioassay methods against cotton bollworm,  
*Helicoverpa armigera* (Hub.)..... 133

##### Biochemistry, Molecular Biology and Bioinformatics

- KALEEM, A., AHMAD, W., KHAN, T.S.,  
AHMAD, I., SHAKOORI, A.R. AND  
NASIR-UD-DIN. *In silico* Post-translational  
modification of histone H1: regulation of  
transcription..... 87
- QAMER, S., EHSAN, M., NADEEM, S. AND  
SHAKOORI, A.R. Free amino acids content

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| of Pakistani unifloral honey produced by<br><i>Apis mellifera</i> ..... | 99 |
|-------------------------------------------------------------------------|----|

### Fisheries

|                                                                                                                                                                                                                                 |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| LASHARI, P.K., NAREJO, N.T., LAGHARI,<br>M.Y. AND MASTOI, A.M. Studies on the<br>gonadosomatic index and fecundity of a carp<br><i>Cirrhinus reba</i> (Hamilton) from fishponds of<br>District Jacobabad, Sindh, Pakistan ..... | 95 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|

### Entomology

|                                                                                                                                                                              |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| SATTAR, M., FATIMA, B., NAZIR AHMED, N.<br>AND ABRO, G.H. Development of larval<br>artificial diet of <i>Chrysoperla carnea</i><br>(Stephens) (Neuroptera: Chrysopidae)..... | 103 |
| MAHMOOD, K. AND MISHKATULLAH.<br>Population dynamics of three species of<br>genus <i>Bactrocera</i> (Diptera: Tephritidae:<br>Dacinae) in BARI, Chakwal (Punjab).....        | 123 |

### Mammalogy

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| GHALIB, S.A., JABBAR, A., KHAN, A.R. AND<br>ZEHRRA, A. Current status of the mammals<br>of Balochistan ..... | 117 |
|--------------------------------------------------------------------------------------------------------------|-----|

## NUMBER 3

### Biotechnology

|                                                                                                                                                                                            |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| REHMAN, A., ALI, A., MUNEEER, B.<br>SHAKOORI, A.R. Resistance and<br>biosorption of mercury by bacteria isolated<br>from industrial effluents.....                                         | 137 |
| MUNAWAR, N., ANWAR, M.A., SALEEM, M.,<br>GHAURI, M.A. AND AKHTAR, K.<br>Biodepyritization of indigenous coal using<br>acidophilic, mesophilic and moderately<br>thermophilic bacteria..... | 147 |
| NELOFER, R., SYED, Q., BAIG, S. AND<br>NADEEM, M. L-lysine production by the<br>homoserine auxo-trophic mutant of<br><i>Corynebacterium glutamicum</i> in stirrer<br>fermenter .....       | 159 |

### Entomology / Pest and Pest Control

|                                                                                                                                                                                                                         |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ULLAH M. AND MAHMOOD, K. Population<br>dynamics of sugarcane plant hopper <i>Pyrrilla</i><br><i>perpusilla</i> Walker (Lophopidae: Homoptera)<br>and its natural enemies at district Mandi<br>Baha-ud-din (Punjab)..... | 153 |
| ALI, N.S., MUNIR, M., ALI, S.S. AND A.R.                                                                                                                                                                                |     |

|                                                                                                                                                                                                                                             |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| SHAKOORI. Efficacy of mixtures of an<br>organophosphate malathion and a synthetic<br>pyrethroid deltamethrin against lesser grain<br>borer, <i>Rhyzopertha dominica</i> .....                                                               | 179 |
| AKHTAR, N., HASHMAT, R.T., JILANI, G.,<br>CHUGHTAI, S.R., EHSAN-UL-HAQ,<br>IRSHAD, M., ATA-UL-MOHSIN AND<br>YASMIN, S. Resistance of different wheat<br>lines to <i>Rhopalosiphum padi</i> (L.)<br>(Aphididae: Homoptera) in Pakistan ..... | 191 |
| FAROOQ, A. AND TASAWAR, Z. Varietal<br>screening of <i>Brassica</i> spp. against aphids in<br>southern Punjab (Pakistan).....                                                                                                               | 195 |

### Virology

|                                                                                                                                                                                                          |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| HAIDER, M.S., TAHIR, M., EVANS, A.A.F.<br>AND MARKHAM, P.G. Coat protein gene<br>sequence analysis of three begomovirus<br>isolates from Pakistan and their affinities<br>with other begomoviruses ..... | 165 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

### Biochemistry, Molecular Biology

|                                                                                                                                                                                                                                           |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| SALEEM, M.A., WILKINS, R.M., MANTLE, D.<br>AND A.R. SHAKOORI. <i>In vivo</i> effect of $\beta$ -<br>cyfluthrin on proteolytic enzyme activities in<br>insecticide - resistant and -susceptible strains<br>of <i>Musca domestica</i> ..... | 171 |
| SAMRA, Z.Q., ASLAM, M.S. SHAUKAT, H.,<br>DAR, N. AND ATHAR, M.A. Development<br>of diagnostic dip strip immunoassay using<br>antibodies of PreS <sub>2</sub> region of hepatitis B<br>surface antigen.....                                | 185 |

### Fisheries

|                                                                                                                                                                                                                                  |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| NAREJO, N.T., MASTOI, A.M., LAGHARI,<br>M.Y. AND LASHARI, P.K. Incidence of<br>crooked vertebral column in adult <i>Cirrhinus</i><br><i>mrigala</i> (Hamilton) from Keenjhar Lake<br>(Distt: Thatta) Sindh, Pakistan (S.C.)..... | 199 |
| Book review .....                                                                                                                                                                                                                | 202 |

## NUMBER 4

### Ornithology

|                                                                                           |     |
|-------------------------------------------------------------------------------------------|-----|
| IQBAL, M.Z., MALIK, S.A. AND CHAUDHRY,<br>A.A. Birds of Lahore Cantonment. ....           | 203 |
| SAEED, U., MASOOD, N. AND MIRZA, Z.B.<br>New records for the birds of Lahore (S.C.) ..... | 269 |

### Environmental Pollution

- YOUSAFZAI, A.M. AND SHAKOORI, A.R.  
Toxic effects of aquatic pollution on the  
white muscle of Mahaseer, *Tor putitora*  
(Hamilton) from River Kabul, NWFP,  
Pakistan .....215

### Entomology

- ZAHID, M. AND AHMAD, I. A new species of  
*Caystrus* Stål (Hemiptera: Pentatomidae)  
from New Guinea with reference to  
phylogenetic relationships.....229

### Ecology

- FATIMA, M. Shell utilization by the hermit crab,  
*Diogenes planimanus* (Anomura:  
Diogenidae) from Karachi Coast, Pakistan .....233

### Fisheries

- RAB, A., AFZAL, M., AKHTAR, A., ALI, M.R.,  
KHAN, S.U., KHAN, M.F., MEHMOOD, S.  
AND QAYYUM, M. Introduction of  
channel catfish *Ictalurus punctatus*  
(Rafinesque) in Pakistan and its performance  
during acclimatization and pond culture .....239

### Molecular Biology / Bioinformatics

- AHMAD, I., AHMAD, W., WALKER-NASIR,  
E., SALEEM, M., SHAKOORI, A.R. AND  
NASIR-UD-DIN. Histone H1 sub-types in  
mouse: interplay between phosphorylation  
and O-glycosylation .....245

### Biotechnology

- REHMAN, A., FARAH, R.S. AND SHAKOORI,  
A.R. Potential use of a ciliate, *Vorticella*  
*microstoma*, surviving in lead containing  
industrial effluents, in waste water treatment.....259
- SOOMRO, A.H., MASUD, T., SAMMI, S. AND  
RATHORE, H.A. Comparison of different  
methods for detection of antimicrobial  
activity of *Lactobacillus* spp. ....265

### NUMBER 5

### Environmental Pollution and Biotechnology

- ABBAS, N., BAIG, I.A. AND SHAKOORI, A.R.  
Faecal contamination of drinking water from  
deep aquifers in Multan, Pakistan .....271

- MUNEER, B., SHAKOORI, F.R., REHMAN, A.  
AND SHAKOORI, A.R. Chromium resistant  
yeast with multi-metal resistance isolated  
from industrial effluents and their possible  
use in microbial consortium for  
bioremediation of wastewater ..... 289

### Biochemistry / Physiology

- MUSTAFA, S.S.S., EID, N.I., JAFRI, S.A., EL-  
LATIF, H.A.A. AND AHMED, H.M.S.  
Insulinotropic effect of aqueous ginger  
extract and aqueous garlic extract on the  
isolated perfused pancreas of streptozotocin  
induced diabetic rats ..... 279

### Parasitology

- DHAREJO, A.M., BILQEES, F.M. AND KHAN,  
M.M. *Echinochasmus mohiuddini*, new  
species (Trematoda: Echinostomatidae) from  
paddy bird *Ardeola grayii* (Ardeidae) of  
Hyderabad, Sindh, Pakistan..... 285

### Pest Control

- ASLAM, M., RAZAQ, M. AND SHAHZAD, A.  
Comparative resistance of different canola  
(*Brassica napus* L.) varieties against turnip  
aphid (*Lipaphis erysimi* Kalt.) ..... 311
- SAHIN, A.K. AND OZKAN, C. Effect of light on  
the longevity and fecundity of *Venturia*  
*canescens* (Gravenhorst) (Hymenoptera:  
Ichneumonidae) ..... 315
- RADWAN, M.A. AND EL-ZEMITY. Naturally  
occurring compounds for control of harmful  
snails ..... 339

### Molecular Biology / Bioinformatics

- MALIK, S.A. AHMAD, I., KHAN, T.S.,  
SHAKOORI, A.R. AND NASIR-UD-DIN  
Runx1 transcription repression and stability:  
interplay between phosphorylation and O-  
GlcNAc modification ..... 299

### Entomology

- SULTANA, R. AND WAGAN, M.S.  
Comparative studies on the ovipositional  
behaviour of *Hieroglyphus* species  
(Hemiacridinae: Acrididae: Orthoptera) from  
Pakistan ..... 321
- AHMAD, I. AND ZAHID, M. A new species of  
myrocheine genus *Ennius* Stål

- (Pentatomidae: Pentatominae) from Nigeria with reference to its male genitalia and its phylogenetic relationships.....327
- UPADHYAN, V.B., TRIPATHI, S.K. AND PRASAD, S. Influence of magnetization on the shell ratio of multivoltine mulberry silkworm (*Bombyx mori* Linn.) (S.C.).....345

### Palaeontology

- KHAN, M.A., GHAFAR, A., FAROOQ, U. AND AKHTAR, M. New fossil remains of *Selenoportax vexillarius* from the Late Miocene of Hasnot.....333

### Freshwater Biology

- MAHAR, M.A., JAFRI, S.I.H. AND KAZMI, Q.B. Diversity and seasonal variation of copepod zooplankton in Manchhar Lake (Distt: Dadu) Sindh, Pakistan (S.C.) .....347
- Letter to the Editor.....351
- Announcements .....352

## NUMBER 6

### Palaeontology

- KHAN, M.A., GHAFAR, A., FAROOQ, U. AND AKHTAR, M. New fossil remains of *Selenoportax vexillarius* from the Late Miocene of Hasnot.....353

### Pest Control

- MUJEEB, K.A. and SHAKOORI, A.R. Toxicity of synthetic pyrethroid, fury against different developmental stages of three strains of *Tribolium castaneum* (Herbst.) .....361

### Environmental Pollution / Biotechnology

- AHMED, K. AND SHAH, S. Physical and microbiological assessment of drinking water of Nomal Valley, Northern Areas, Pakistan.....367
- REHMAN, A., FAROOQ, H. AND SHAKOORI,

- A.R. Copper tolerant yeast, *Candida tropicalis*, isolated from industrial effluents: its potential use in wastewater treatment..... 405

### Entomology

- AHMAD, I. AND QADRI, S.S. A new species of *Dysdercus* Guérin Méneville (Hemiptera: Pyrrhocoridae) from Bhutan with special reference to its genitalia and its relationships..... 375
- QADRI, S.S. AND AHMAD, I. Redescription of *Dysdercus philippinus* Herrich-Schäffer (Hemiptera: Pyrrhocoridae) with reference to its unknown genitalia..... 379
- AHMAD, I. AND RAB, N. A new record and redescription of *Plinachtus acicularis* (F.) (Heteroptera: Coreidae) from Pakistan..... 401

### Parasitology

- DHAREJO, A.M., BILQEES, F.M. AND KHAN, M.M. *Uvitellina teesae*, new species (Digenea: Cyclocoelidae) from liver of white-eyed buzzard *Butastur teesa* (Accipitridae), in Hala, Hyderabad, Sindh, Pakistan ..... 385

### Developmental Biology

- QURESHI, I.Z. AND ATKINSON, M.E. Developing chicken trigeminal ganglia show varying patterns of axon outgrowth following ablation *in vivo* of the maxillary and mandibular target tissues ..... 389

### Fish Biology

- AFZAL, M., RAB, A., AKHTAR, N., KHAN, S.U., KAUSAR, R. AND QAYYUM, M. Morphometric and meristic studies of bighead carp *Aristichthys norilis* (Richardson) introduced in Pakistan for aquaculture (S.C.)..... 413
- List of referees ..... 415

**PAKISTAN JOURNAL OF ZOOLOGY**  
(Pakistan J. Zool.)

**Volume 39**

**2 0 0 7**

**Number 5**

**C O N T E N T S**

---

**Environmental Pollution and Biotechnology**

---

- ABBAS, N., BAIG, I.A. AND SHAKOORI, A.R. Faecal contamination of drinking water from deep aquifers in Multan, Pakistan ..... 271
- MUNEER, B., SHAKOORI, F.R., REHMAN, A. AND SHAKOORI, A.R. Chromium resistant yeast with multi-metal resistance isolated from industrial effluents and their possible use in microbial consortium for bioremediation of wastewater ..... 289

---

**Biochemistry / Physiology**

---

- MUSTAFA, S.S.S., EID, N.I., JAFRI, S.A., EL-LATIF, H.A.A. AND AHMED, H.M.S. Insulinotropic effect of aqueous ginger extract and aqueous garlic extract on the isolated perfused pancreas of streptozotocin induced diabetic rats ..... 279

---

**Parasitology**

---

- DHAREJO, A.M., BILQEES, F.M. AND KHAN, M.M. *Echinochasmus mohiuddini*, new species (Trematoda: Echinostomatidae) from paddy bird *Ardeola grayii* (Ardeidae) of Hyderabad, Sindh, Pakistan..... 285

---

**Pest Control**

---

- ASLAM, M., RAZAQ, M. AND SHAHZAD, A. Comparative resistance of different canola (*Brassica napus* L.) varieties against turnip aphid (*Lipaphis erysimi* Kalt.) ..... 311
- SAHIN, A.K. AND OZKAN, C. Effect of light on the longevity and fecundity of *Venturia canescens* (Gravenhorst) (Hymenoptera: Ichneumonidae)..... 315
- RADWAN, M.A. AND EL-ZEMITY. Naturally occurring compounds for control of harmful snails ..... 339

---

**Molecular Biology / Bioinformatics**

---

- MALIK, S.A. AHMAD, I., KHAN, T.S., SHAKOORI, A.R. AND NASIR-UD-DIN Runx1 transcription repression and stability: interplay between phosphorylation and O-GlcNAc modification ..... 299

---

**Entomology**

---

- SULTANA, R. AND WAGAN, M.S. Comparative studies on the ovipositional behaviour of *Hieroglyphus* species (Hemiacridinae: Acrididae: Orthoptera) from Pakistan ..... 321
- AHMAD, I. AND ZAHID, M. A new species of myrocheine genus *Ennius* Stål (Pentatomidae: Pentatominae) from Nigeria with reference to its male genitalia and its phylogenetic relationships ..... 327
- UPADHYAN, V.B., TRIPATHI, S.K. AND PRASAD, S. Influence of magnetization on the shell ratio of multivoltine mulberry silkworm (*Bombyx mori* Linn.) (S.C.) ..... 345

---

**Palaeontology**

---

- KHAN, M.A., GHAFAR, A., FAROOQ, U. AND AKHTAR, M. New fossil remains of *Selenoportax vexillarius* from the Late Miocene of Hasnot ..... 333

---

**Freshwater Biology**

---

- MAHAR, M.A., JAFRI, S.I.H. AND KAZMI, Q.B. Diversity and seasonal variation of copepod zooplankton in Manchhar Lake (Distt: Dadu) Sindh, Pakistan (S.C.)..... 347
- Letter to the Editor ..... 351
- Announcements ..... 352

---

[Abstracted and indexed in *Biological Abstracts*, *Chemical Abstracts*, *Zoological Records*, *Information Retrieval Limited*, *London*, *Service Central De Documentation De L'ORSTOM*, *Paris* and *National Inquiry Services Centre*, *South Africa*].

## C O N T E N T S

### Palaeontology

- KHAN, M.A., GHAFAR, A., FAROOQ, U. AND AKHTAR, M. New fossil remains of *Selenoportax vexillarius* from the Late Miocene of Hasnot..... 353

### Pest Control

- MUJEEB, K.A. and SHAKOORI, A.R. Toxicity of synthetic pyrethroid, fury against different developmental stages of three strains of *Tribolium castaneum* (Herbst.)..... 361

### Environmental Pollution / Biotechnology

- AHMED, K. AND SHAH, S. Physical and microbiological assessment of drinking water of Nomal Valley, Northern Areas, Pakistan..... 367
- REHMAN, A., FAROOQ, H. AND SHAKOORI, A.R. Copper tolerant yeast, *Candida tropicalis*, isolated from industrial effluents: its potential use in wastewater treatment..... 405

### Entomology

- AHMAD, I. AND QADRI, S.S. A new species of *Dysdercus* Guérin Méneville (Hemiptera: Pyrrhocoridae) from Bhutan with special reference to its genitalia and its relationships..... 375
- QADRI, S.S. AND AHMAD, I. Redescription of *Dysdercus philippinus* Herrich-Schäffer (Hemiptera: Pyrrhocoridae) with

reference to its unknown genitalia ..... 379

- AHMAD, I. AND RAB, N. A new record and redescription of *Plinactus acicularis* (F.) (Heteroptera: Coreidae) from Pakistan..... 401

### Parasitology

- DHAREJO, A.M., BILQEES, F.M. AND KHAN, M.M. *Uvitellina teesae*, new species (Digenea: Cyclocoelidae) from liver of white-eyed buzzard *Butastur teesa* (Accipitridae), in Hala, Hyderabad, Sindh, Pakistan..... 385

### Developmental Biology

- QURESHI, I.Z. AND ATKINSON, M.E. Developing chicken trigeminal ganglia show varying patterns of axon outgrowth following ablation *in vivo* of the maxillary and mandibular target tissues ..... 389

### Fish Biology

- AFZAL, M., RAB, A., AKHTAR, N., KHAN, S.U., KAUSAR, R. AND QAYYUM, M. Morphometric and meristic studies of bighead carp *Aristichthys norilis* (Richardson) introduced in Pakistan for aquaculture (S.C.)..... 413

- List of referees..... 415

[Abstracted and indexed in *Biological Abstracts*, *Chemical Abstracts*, *Zoological Records*, *Information Retrieval Limited*, *London*, *Service Central De Documentation De L'ORSTOM*, *Paris* and *National Inquiry Services Centre*, *South Africa*].

**Website: [www.zsp.org.pk](http://www.zsp.org.pk)**

AZIZ, F. AND QURESHI, I.Z. Clinical and cytogenetic analyses in Pakistani leukemia patients.

ABBAS, N., ARSHAD, Y. AND SHAKOORI, A.R. Mutations in the hepatitis B virus core gene and its efficacy as a vaccine .....