

PAKISTAN JOURNAL OF ZOOLOGY

Volume 45, 2013

CONTENTS

NUMBER 1

Public Health / Infections Diseases

- AKHTAR, A.M., KHAN, M.A., IJAZ, T., IQBAL, Z., RANA, M.Y., MAQBOOL, A. AND REHMAN, A. Seroprevalence and determinants of hepatitis-C virus infection in blood donors of Lahore, Pakistan 1
LENGA, A., LENGA-LOUMINGOU, I.A., MOUSSOUNDA, M.M. AND VOUDIBIO, J. The prurigo strophulus in Brazzaville: demonstration of vectors and study of some associated bioecological parameters 121
ALI, B., ANJUM, A., MAHMOOD, S., WADOOD, M.A. AND SHAKOORI, A.R. Identification of bovine and human tuberculosis in AFB positive and negative patients 255

Environmental Pollution / Toxicology

- JABEEN, F. AND CHAUDHRY, A.S. Metal uptake and histological changes in gills and liver of *Oreochromis mossambicus* inhabiting Indus River 9
KHAN, Z.I., AHMAD, K., BAYAT, A., MUKHTAR, M.K. AND SHER, M. Evaluation of lead concentration in pasture and milk: A possible risk for livestock and public health 79
AL-DOAISSE, A.A., ALARIFI, S.A. AND JARRAR, B.M. Hepatic histological and histochemical alterations induced by rosuvastatin therapeutic doses 149
ALI, N.S., ALI, S.S. AND SHAKOORI, A.R. Effects of sublethal doses of malathion on biochemical components of malathion-resistant and -susceptible adults of *Rhyzopertha dominica* 203
KHATTAK, M.I. AND KHATTAK, M.I. Evaluation of heavy metals (As and Cd) contamination in the edible fish along Karachi-Makran Coast 219

Entomology

- MANZOOR, F., RUHMA, S. AND AZKA, S. Study of foraging behaviour of *Coptotermes heimi* (Wasmann) by mark-release-recapture method 19
KAMRAN, M., AFZAL M. AND BASHIR, M.H. A new species of genus *Erythraeus* (Acari:

- Erythraeidae*) from Punjab, Pakistan 35
SARWAR, Z.M., BASHIR, M.H., KHAN, B.S. AND KHAN, M.A. Description of two new species of genus *Caloglyphus* Berlese (Acari: Acaridae) from Pakistan 101
TAHIR, H.M., BIBI, H. AND KHAN, S.Y. Adult density, abdominal status and resting preference of *Culex quinquefasciatus* (Diptera: Culicidae) (S.C.) 277

Cell and Molecular Biology / Bioinformatics / Cancer Biology

- HOESSLI, D.C., GHAZANFAR, F., KALEEM, A., IQBAL, Z., SHAKOORI, A.R. AND NASIR-UD-DIN. SIRT1: importance of O-GlcNAc and phosphorylation interplay in aging and diabetes 27
KHAN, S.N., NIEMANN, S., GULFRAZ, M., QAYYUM, M., SIDDIQI, S., MIRZA, Z.S., TAHSIN, S., EBRAHIMI-RAD, M. AND KHANUM, A. Molecular characterization of multidrug-resistant isolates of *Mycobacterium tuberculosis* from patients in Punjab, Pakistan 93
AHMAD, A., UMER, R. AND SHAKOORI, A.R. Human umbilical cord blood serum, a better alternative of fetal bovine serum 167
QURRATULAIN AND SHAKOORI, A.R. Frequency of *Kras* gene mutations in endometrioid carcinoma of uterus in Pakistani population 197
AHMAD, M.S. AND SHAKOORI, A.R. Isolation, molecular characterization and toxicity of *cry1C* gene harboring *Bacillus thuringiensis* from different habitats and localities of Pakistan 261

Marine Biology / Biodiversity

- ADEBIYI, F.A. The sex ratio, gonadosomatic index, stages of gonadal development and fecundity of sompat grunt, *Pomadasys jubelini* (Cuvier, 1830)..... 41
AFSHAN, K., BEG, M.A., AHMAD, I., AHMAD, M.M. AND QAYYUM, M. Freshwater snail fauna of Pothwar Region, Pakistan 227
WANG, Y-T., CHOU, L-S., LO, C. AND YANG, W-C. Rapid species identification of morphologically similar cetacean species *Kogia sima* and *K. breviceps* by high-resolution melt analysis (S.C.) 273

HASAN, Z., AHMAD, I., YOUSUF, M., REHMAN, L. AND KHAN, J. Fish biodiversity of river Swat	283
Parasitology	
SOYLU, E. Metazoan parasites of perch <i>Perca fluviatilis</i> L. from Lake Sığırçı, Ipsala, Turkey	47
Livestock Management	
NASRULLAH, MUHAMMAD ABDULLAH, M., BABER, M.E., JABBAR, M.A. AND BAHTTI, J.A. Feeding behavior, voluntary intake and digestibility of various summer fodders in sheep and goats	53
NASRULLAH, ABDULLAH, M., BABER, M.E., JABBAR, M.A., JAVED, K. AND NASIR, M. Performance of beetal goats and lohi sheep under different feeding management systems	107
Wildlife	
YU, T. AND GUO, Y. Effects of urbanization on bird species richness and community composition	59
ALMANSOUR, M.I. AND JARRAR, B.M. Occurrence and seasonal variation of the avifauna at Domate Al-Jandal Lake, Al-Jouf Province of Saudi Arabia	85
KHAN, W.A. AND MIAN, A. Population biology of black francolin (<i>Francolinus francolinus</i>) with reference to Lal Suhana National Park, Pakistan	183
Pest and Pest Control	
AKMAL, M., FREED, S., MALIK, M.N. AND GUL, H.T. Efficacy of <i>Beauveria bassiana</i> (Deuteromycotina: Hypomycetes) against different aphid species under laboratory conditions	71
USMAN, A., KHAN, I.A., INAYATULLAH, M., SALJOQI, A.U.R. AND SHAH, M. Appraisal of different tomato genotypes against tomato fruit worm (<i>Helicoverpa armigera</i> Hub.) infestation	113
AHMED, A.M. <i>Bacillus thuringiensis</i> induces cellular stress in the mosquito vector, <i>Culex pipiens</i> , prior to death	129
ARSHAD, M.J., FREED, S., AKBAR, S., AKMAL, M. AND GUL, H.T. Nitrogen fertilizer application in maize and its impact on the development of <i>Chilo partellus</i> (Lepidoptera: Pyralidae).....	141
HAMEED, A., SALEEM, M., AHMAD, S., AZIZ, M.I. AND KARAR, H. Influence of prey consumption on life parameters and predatory potential of <i>Chrysoperla carnea</i> against cotton mealy bug	177
SAEED, Q., ZAKA, M., SAEED, S. AND BAKHTAWAR, M. Lucerne as trap crop in wheat for development of predators population against wheat aphids (Aphididae: Homoptera) ...	193
JAVED, H., IQBAL, J. AND KHAN, T.M. Studies on population dynamics of insect pest of safflower, <i>Carthamus tinctorius</i> L.	213
AL-MEKHLAFI, F.A., TAHA, N.A., MASHALY, A.M.A. AND WADAAN, M.A. Larvicidal activity of selected xerophytic plants against <i>Culex pipiens</i> and <i>Aedes caspius</i> (Diptera: Culicidae)	241
Biotechnology / Biochemistry / Environmental Biotechnology	
SHAH, S.N.H., SHAHZAD, Y., AKASH, M.S.H., ALI, M., BUKHARI, S.N.I. AND HASSAN, S.S. Rabbit skin and polydimethylsiloxane as model membranes to evaluate permeation kinetics from topical formulation	159
TARIQ, M.M., EYDURAN, E., RAFEEQ, M., WAHEED, A., AWAN, M.A., SHAFEE, M., RASHEED, N. AND MEHMOOD, K. Influence of slaughtering age on chemical composition of mengali sheep meat at Quetta, Pakistan	235
MUNEER, B., IQBAL, M.J., SHAKOORI, F.R. AND SHAKOORI, A.R. Tolerance and biosorption of mercury by microbial consortia: potential use in bioremediation of wastewater ...	247
SEIDAVI, A. Biochemical divergence of glucose, urea, uric acid, lactate dehydrogenase, total proteins and alpha amylase in six varieties of local silkworm (<i>S.C.</i>).....	280
NUMBER 2	
Pest and Pest Control	
MUSHTAQ, M., MIAN, A., HUSSAIN, I., MUNIR, S., AHMED, I. AND KHAN, A.A. Testing of groundnut – maize bait as carrier of zinc phosphide for the management of Indian crested porcupine, <i>Hystrix indica</i> Kerr (Rodentia: Hystricidae)	291
HASSAN, M.W., DOU, W. AND WANG, J.-J. Humidity dependent population growth of the psocid, <i>Liposcelis yunnaniensis</i> (Psocoptera: Liposcelididae)	317
AHMAD, K.F. Environmental factors affecting longevity, adaptability and diapause termination of <i>Exochomus quadripustulatus</i> L. (Coleoptera: Coccinellidae): A predator of <i>Lepidosaphes ulmi</i> L. (Hemiptera: Diaspididae) on apple.....	377
TANG, L.-D., WU, J.-H., ALI, S. AND REN, S.-X. Establishment of baseline toxicity data to	

different insecticides for <i>Aphis craccivora</i> Koch and <i>Rhopalosiphum maidis</i> (Fitch) (Homoptera: Aphididae) by glass tube residual film technique	411
MUSTAFA, I., RAZA, A.B.M., AQEEL, M.A., AHMED, H., KHAN, M.R., AHMAD, I. AND ARSHAD, M. Correlation of citrus leaf miner (<i>Phyllocnistis citrella</i> Stainton) with snail population in district Sargodha, Punjab, Pakistan	453
NAQVI, S.R., MUSHTAQ, M., BEG, M.A., NADEEM, M.S. AND KAYANI, A.R. Dietary habits of the house rat (<i>Rattus rattus</i>) in urban Rawalpindi, Pakistan	531
BODLAH, I. AND NAEEM, M. Record and trophic associations of three aphid hyperparasitoids from Punjab province of Pakistan (S.C.)	558
RAZAQ, M., SUHAIL, A., ASLAM, M., ARIF, M.J., SALEEM, M.A. AND KHAN, H.A. Patterns of insecticides used on cotton before introduction of genetically modified cotton in Southern Punjab, Pakistan (S.C.)	574

Entomology

SULTANA, R., WAGAN, Y.S. AND WAGAN, M.S. Orthopteran biodiversity of Thar Desert, Sindh, Pakistan	299
JAHAN, N. AND SARWAR, M.S. Field evaluation of lethal ovitraps for the control of dengue vectors in Lahore, Pakistan	305
MUKHTAR, M.K. AND TAHIR, H.M. A new species of the genus <i>Chorizopes</i> (Araneae: Araneidae) from Punjab, Pakistan	433
HÜSEYINOĞLU, Y. A faunistic study on <i>Papilionoidea</i> and <i>Hesperioidae</i> (Lepidoptera) of Murat Mountain in Banaz, UŞAK Province, Turkey	437
AHMED, S., MALIK, H., RIAZ, M.A. AND AKTHAR, M. Influence of plant extracts on the life history and population development of house fly, <i>Musca domestica</i> L. (Diptera: Muscidae)	345
MUKHTAR, M.K. Two new species of the genus <i>Oxyopes</i> Latreille (Arachnida: Araneae: Oxyopidae) from Punjab, Pakistan	483
ALI, N., MARJAN, KHAN, K. AND KAUSAR, A. Study on mosquitoes of Swat Ranizai sub division of Malakand	503
KAVARIZADEH, F., VAZIRIANZADEH, B. RASSI, Y., GLUSANG, A.J. AND MORAVVEJ, S.A. A faunistic study of sand flies of Musian District, Southwestern of Iran ...	549

Developmental Biology

JARRAL, S.A., TAHIR, M. AND LONE, K.P.
--

Postnatal histogenesis of islets of Langerhans in rat	323
ABU-TAWEEL, G., AJAREM, J.S., EBAID, H. AND RADY, A.M. Behavioral changes induced by prenatal acute endotoxemia in mice offspring	359

Biotechnology / Microbiology

NASUTION, M.A., YAAKOB, Z., ALI, E., LAN, N.B. AND ABDULLAH, S.R.S. A comparative study using aluminum and iron electrodes for the electrocoagulation of palm oil mill effluent to reduce its polluting nature and hydrogen production simultaneously	331
WAHEED, U., SIDDIQUE, M., ARSHAD, M., ALI, M. AND SAEED, A. Preparation of Newcastle disease vaccine from VG/GA strain and its evaluation in commercial broiler chicks	339
ABUDABOS, A.M. Use of a competitive exclusion product (Aviguard®) to prevent <i>Clostridium perfringens</i> colonization in broiler chicken under induced challenge	371
TOROĞLU, S. AND ÇENET, M. Comparison of antimicrobial activities of essential oil and solvent extracts of endemic <i>Phlomis oppositiflora</i> Boiss. & Hausskn. from Turkey ...	475
ANDLEEB, S., GHOUSS, T., RIAZ, N., SHAHZAD, N., GHOUSS, S. AND AWAN, U.A. Assessment of antibacterial activity of <i>Momordica charantia</i> extracts and antibiotics against fecal contaminated water associated <i>Enterococcus</i> spp. (S.C.)	555

Fish and Fisheries

AHMAD, Z., AL-HARTHI, I., AL-BALAWI, H.F.A. AND AL-AKEL, A.S. Studies on the feeding ecology of <i>Cyprinion mhalensis</i> dwelling in Wadi Bua, Taif, Saudi Arabia	351
SIYAL, F.K., LI, Y., GAO, T. AND LIU, Q. Maximum sustainable yield estimates of silver pomfret, <i>Pampus argenteus</i> (Family: Strometidae) fishery in Pakistan	447

Parasitology

AMER, O.S.O., DKHIL, M.A. AND AL-QURAISHY, S. Antischistosomal and hepatoprotective activity of <i>Morus alba</i> leaves extract	387
MEHMOOD, K., IJAZ, M., DURRANI, A.Z., KHAN, M.A., SABIR, A.J. AND SALEEM, M.H. Infection rate and therapeutic trials on various gastrointestinal parasites in sheep and goats in and around Lahore, Pakistan	489
JAMAL, Q., SHAH, A., ALI, N., ASHRAF, M.,	

AWAN, M.M. AND LEE, C.M. Prevalence and comparative analysis of cutaneous leishmaniasis in Dargai Region in Pakistan	537	AND CHENG, L.-G. cDNA representational difference analysis of deltamethrin-resistant and -susceptible strains of diamondback moth ..	511
Wildlife		RAUF, A., NADEEM, M.S., ARSHAD, M., RIAZ, H., LATIF, M.M., IQBAL, M., LATIF, M.Z., AHMED, N. AND SHAKOORI, A.R.	
MEBERT, K., MASROOR, R. AND CHAUDHRY, M.J.I. The dice snake, <i>Natrix tessellata</i> (Serpentes: Colubridae) in Pakistan: Analysis of its range limited to few valleys in the western Karakoram	395	Prevalence of hepatitis B and C virus in the general population of Hill Surang Area, Azad Jammu and Kashmir, Pakistan	543
KOPECKÝ, O. Predation-induced injuries in wild populations of alpine newt	417	FAROOQ, A. AND SAMI, A.J. Targeting of GH gene at the proximal end for identification of markers for breast cancer among Pakistani women (<i>S.C.</i>).....	569
NADEEM, M.S., ZAFAR, S., KAYANI, A.R., MUSHTAQ, M., BEG, M.A. AND NASIR, M.F. Distribution and roosting habitats of some microchiropteran bats in Rawalpindi district, Pakistan (<i>S.C.</i>).....	565		
Physiology		NUMBER 3	
ZHU, W.-L., ZHANG, L. AND WANG, Z.-K. Thermogenic property and its hormonal regulation in a South China field mouse, <i>Apodemus draco</i> , under seasonal acclimatization	423	Wildlife / Biodiversity	
Marine Biology / Biodiversity		ZHAO, L., WANG, Y., LIU, N. AND LIAO, J. Effects of change in altitude on the auditory bulla of Midday Gerbil, <i>Meriones meridianus</i> ...	581
AFSAR, N., SIDDIQUI, G. AND AYUB, Z. Study of reproductive cycle of two archaeogastropods, <i>Turbo coronatus</i> and <i>Monodonta canalifera</i>	459	ZHANG, X., XIAN, Y., WANG, L. AND WANG, D. Behaviour and habitat selection of Yangtze Finless Porpoises in Dongting Lake, China, and the adjacent waters: impact of human activity	635
Environmental Pollution / Toxicology		DOLENEC, Z., KRALJ, J., SIROVINA, D. AND KIŠ-NOVAK, D. Consequences of spring warming for the black redstart (<i>Phoenicurus ochruros</i>) in N.W. Croatia (<i>S.C.</i>).....	878
KARAMI, K., VAZIRIANZADEH, B., MASHHADI, E. HOSSIENZADEH, M. AND MORAVVEJ, S.A. A five year epidemiologic study on scorpion stings in Ramhormoz, South-West of Iran	469	Environmental Pollution	
TOKATLI, C., ARSLAN, N., ÇİÇEK, A., KÖSE, E., EMIROĞLU, Ö. AND DAYIOĞLU, H. Effect of silver on aquatic ecosystems of Emet Stream Basin, Turkey	521	AL-BALWAI, H.F.A., AL-MISNED, F., AHMAD, Z., AL-GHANIM, K. AND MAHBOOB, S. A study on the concentration of heavy metals in water and sediments of natural water reservoir in Wadi Hanefah, Saudi Arabia and uptake of metals by a fish, <i>Poecilia latipinna</i>	589
KHAN, Z.I., AHMAD, K., MUKHTAR, M.K., HUSSAIN, A., ZAHOOR, A.F., ANJUM, A., YOUSAF, M., HUSSAIN, G., SHAHEEN, M. AND PERVEEN, B. Appraisal of lead and cadmium concentrations in herbage and milk of ewes during different lactation periods: A case study in Sargodha, Pakistan (<i>S.C.</i>)	563	TOKATLI, C., ÇİÇEK, A., KÖSE, E. AND EMIROĞLU, Ö. Uptake of silver from large silver deposits on biotic and abiotic components of the closest lothic system: Felent Stream, Turkey	701
Cell and Molecular Biology / Bioinformatics / Cancer Biology		KHAN, Z.I., AHMAD, K., ASHRAF, M., NAQVI, S.A.H., MUKHTAR, M.K., SHER, M. AND AKRAM, N.A. Risk assessment of nickel toxicity in rams in a semi-arid region using soil-plant and blood plasma samples as indicators	793
ALI, A., SIDDIQUE, M.K. AND SHAKOORI, A.R. Frequency of <i>FLT3/ITD</i> mutations in Pakistani acute myeloid leukemia patients	489	Parasitology	
ZHANG, H., LI, F.-L., CHENG, C., LIU, B.-D.		ANWAR, S.A., MAHDI, M.M., MCKENRY, M.V. AND QADIR, A. Survey of plant-parasitic nematodes associated with four vegetable crops cultivated within tunnels	595
		MORTUZA, M.G., JI, C.W., AL-MISNED, F.A.	

AND CHON, T.-S. Monitoring movement behaviour of <i>Caenorhabditis elegans</i> in response to formaldehyde at low concentrations	623
SAFDAR, A., JAVED, N., KHAN, S.A., SAFDAR, H., HAQ, I.U., ABBAS, H. AND ULLAH, Z. Synergistic effect of a fungus, <i>Fusarium semitectum</i> , and a nematode, <i>Tylenchulus semipenetrans</i> , on citrus decline	643
KAMRAN, M., ANWAR, S.A., JAVED, N., KHAN, S.A., ABBAS, H., IQBAL, M.A. AND ZOHAIB, A. The influence of <i>Meloidogyne incognita</i> density on susceptible tomato	727
GHAZI, R.R., KHAN, A. AND SAYED, M. <i>Paramonostomum bilqeessae</i> , New species (Trematoda: Notocotylidae) from common teal (<i>Anas crecca</i> L.) in Sindh	843
Microbiology / Environmental Microbiology	
HUSSAIN, N. Clinical and laboratory manifestations of systemic lupus erythematosus in Pakistani lupus patients	605
SULMAN, S. AND REHMAN, A. Isolation and characterization of cellulose degrading <i>Candida tropicalis</i> W2 from environmental samples	809
XUE, Y., ZHANG, D., CHEN, J., MENG, Y. AND ZHANG, Y. Identification of a gram negative <i>Rahnella aquatilis</i> strain from <i>Rana temporaria chensinensis</i> David in China (S.C.) ..	871
Pest and Pest Control	
TAHIR, H.M., ISHAQ, T., MUKHTAR, M.K., KHAN, S.Y. AND AHMED, K. Potential use of <i>Calotropis procera</i> (Milk Weed) to control <i>Culex quinquefasciatus</i> (Diptera: Culicidae)	615
NASIR, M., IMRAN, M. AND AHMAD, M. Pyrethroids synergize new chemical insecticides in field populations of <i>Plutella xylostella</i> (Lepidoptera: Plutellidae).....	629
ZHAO, H.-Y., LIU, K., ALI, S., LU, Y.-Y., ZENG, L. AND LIANG, G.-W. Host suitability of different pupal ages of oriental fruit fly, <i>Bactrocera dorsalis</i> , for the parasitoid, <i>Pachycrepoideus vindemmiae</i>	673
IQBAL, N. AND SAEED, S. Toxicity of six new chemical insecticides against the termite, <i>Microtermes mycophagus</i> D. (Isoptera: Termitidae: Macrotermitinae).....	709
KHAN, R.A., RASHID, M., WANG, D. AND ZHANG, Y.L. Toxicology and biochemical basis of cantharidin effects on <i>Helicoverpa armigera</i> (Hub.) (Lepidoptera: Noctuidae).....	769
MUKHTAR, M.K., CHOUDHARY, E. AND	
TAHIR, H.M. Residual effects of bifenthrin on the mortality of <i>Pardosa sumatrana</i> (Thorell 1890) (Araneae: Lycosidae) (S.C.)	865
MEMON, N. AND GILBERT, F. Costs of resistance to insecticides in the maize weevil, <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) (S.C.)	874
Freshwater Biology	
DZIUBA, M.K., CERBIN, S. AND WEJNEROWSKI, L. Cladocera and copepoda of the Shallow Eutrophic Lake in Natura 2000 area in Western Poland	653
MIRZA, Z.S., NADEEM, M.S., BEG, M.A. AND MALIK, I.U. Spatial and temporal fluctuations in the physico-chemical limnology of Mangla Dam (Pakistan)	679
ZAWIERUCHA, K., GRZELAK, K., KOTWICKI, L., MICHALCZYK, L. AND KACZMAREK, L. <i>Batillipes pennaki</i> Marcus, 1946, a new addition to the Thai tardigrade fauna, with an overview of literature on the species	801
Livestock Development	
TARIQ, M.M., IQBAL, F., EYDURAN, E., BAJWA, M.A., HUMA, Z.E. AND WAHEED, A. Comparison of non-linear functions to describe the growth in Mengali sheep breed of Balochistan	661
Fisheries	
ZAHID, A., KHAN, N., NASIR, M. AND ALI, M.W. Effect of artificial feed and fertilization of ponds on growth and body composition of genetically improved farmed tilapia	667
BALIK, İ. AND EMRE, Y. Monthly variation in stock density and growth performance of juvenile gilthead seabream (<i>Sparus aurata</i> L., 1758) in Beymelek Lagoon, Antalya, Turkey	687
Entomology	
DIN, A.U., ZIA, A., BHATTI, A.R. AND KHAN, M.N. Odonata Naiads of Potohar Plateau, Punjab, Pakistan	695
KAMRAN, M. AND BASHIR, M.H. On a new species of genus <i>Lasioerythraeus</i> and new record of <i>Pollux workandae</i> Southcott (Prostigmata: Erythraeidae) from Pakistan	721
AHMAD, W., NAEEM, M. AND BODLAH, I. Genus <i>Aulacophora</i> Chevrolat, 1836 (Coleoptera: Chrysomelidae) from Pothohar, Punjab, Pakistan (S.C.)	868
AHMED, Z. AND AKHTER, M.A. New record of <i>Drasterius confusus</i> Platia & Gudenzi, 1997 (Coleoptera: Elateridae: Agrypninae) for the	

Molecular Biology / Bioinformatics

- BOSNIJAK, J., STEVANOV-PAVLOVIC, M., VUCICEVIC, M., STEVANOVIC, J., SIMEUNOVIC, P., RESANOVIC, R. AND STANIMIROVIC, Z. Feasibility of non-invasive molecular method for sexing of parrots 715
 SHEHZADI, A., SHAKOORI, F.R. AND SHAKOORI, A.R. Immunoinformatics study of promiscuous HLA binding antigenic nanomers of surface glycoproteins of influenza A (H1N1) pdm09 of Asian Origin 733
 SHAHZAD, M.I., KHAN, I.H., LUCIW, P.A., GULFRAZ, M. AND KHANUM, A. Cloning, expression and genetic immunization studies of *Mycobacterium tuberculosis* gene *esat6* 749
 AHMAD, M.S. AND SHAKOORI, A.R. Cloning and molecular characterization of *cry1Ca* and *cry1Cb* genes from locally isolated *Bacillus thuringiensis* strains 759
 BUKHARI, D.A., ZAHID, N. AND SHAKOORI, A.R. Molecular characterization of *cry4B* gene from local isolates of *Bacillus thuringiensis* encoding 70kDa crystal protein 779
 AFTAB, N., MURTAZA, B.N., BIBI, A. AND SHAKOORI, A.R. Association of sequence variation 713–8delC in intron 4 of transforming growth factor- β 1 gene and low bone mineral density in Pakistani female osteoporotic population 847

Biochemistry, Physiology

- QAMER, S., AHAMED, F., ALI, S.S. AND SHAKOORI, A.R. Effect of storage on various honey quality parameters of *Apis dorsata* honey from Nepal 741
 RAMZAN, F., QURESHI, I.Z., KHAN, M.A. AND IQBAL, M.J. Pretreatment with GnRH antagonist causes partial restoration of testicular tissue after kisspeptin-10 induced degeneration in prepubertal rats 817

Toxicology

- YOUNIS, E.M., ABDEL-WARTH, A-W, A-M., AL-ASGAH, N.A., EBAID, H. AND MUBARAK, M. Histological changes in the liver and intestine of nile tilapia, *Oreochromis niloticus*, exposed to sublethal concentrations of cadmium 833
 KHAN, M.K.A. AND ASMATULLAH. Teratogenic effect of sublethal doses of deltamethrin in mice 857

Pest and Pest Control

- SARWAR, M. AND SATTAR, M. Varietals variability of winter rapes (*Brassica napus* L.) for their susceptibility to green aphid, *Myzus persicae* (Sulzer) (Homoptera: Aphididae)..... 883
 YOUSAFI, Q., AFZAL, M., ASLAM, M., RAZAQ, M. AND SHAHID, M. Screening of brinjal (*Solanum melongena* L.) varieties sown in autumn for resistance to cotton jassid, *Amrasca biguttula biguttula* (Ishida) 897
 ABRO, G.H., SYED, T.S., SHAH, A.H., CUI, J., SATTAR, M. AND AWAN, M.S. Efficacy and economics of different insecticides against stem borers, *Scirpophaga incertulas* (Walker) in rice crop 929
 REHMAN, H.M.U. MAHMOOD, R. AND RAZAQ, M. Phenology, distribution, biology and population trends of *Procontarinia matteiana* Kieffer and Cecconi (Diptera: Cecidomyiidae) in Punjab, Pakistan 941
 EKEH, F.N., OLERU, K.I., IVOKE, N., NWANI, C.D. AND EYO, J.E. Effects of *Citrus sinensis* peel oil on the oviposition and development of cowpea beetle *Callosobruchus maculatus* (Coleoptera: Chrysomelidae) in some legume grains 967
 AFSHAN, K., RIZVI, S.S.R., MUHAMMAD, A. AND QAYYUM, M. Geo-Morphometric approaches to the study of sexual size dimorphism in murid rodents 1035
 YOUSAF, S., KHAN, S. AND ASLAM, M.T. Effect of pesticides on the soil microbial activity 1063
 AHMED, K. AND AWAN, M.S. Integrated management of insect pests of chickpea *Cicer arietinum* (L. Walp) in South Asian countries: present status and future strategies – A review .1125
 SAEED, Q., ZAKA, S.M., SAEED, S., AWAR, M.B., IQBAL, N., ALI, M.A. AND AKRAM, M.R. Management of stored grain infested with red flour beetle *Tribolium castaneum* (Herbst) (Coleoptera: Tenebrionidae) in Southern Punjab, Pakistan (S.C.) 1167

Livestock / Animal Diseases

- MAHMOOD, A., KHAN, M.A., AHMAD, M.U.D., YOUNUS, M., CHAUDHRY, Z.I., AHAD, A., IQBAL, H.J., NASIR, M.K. AND RIAZ, M. Haematological, biochemical and therapeutic aspects of parturient haemoglobinuria in buffaloes 889
 SALEEM, M.H., KHAN, M.S., DURRANI, A.Z., HASSAN, A., IJAZ, M. AND ALI, M.M.

Leptospirosis: An emerging zoonosis in Pakistan	909
MASOOD, S., MAQBOOL, A., KHAN, U.J., CHAUDHRY, Z.I. AND ANJUM, A.A. Anti-cryptosporidium activity of albendazole, metronidazole and paromomycin in experimentally infected cattle	935
RASHID, N., BAJWA, M.A., RAFEEQ, M., TARIQ, M.M., ABBAS, F., AWAN, M.A., KHAN, M.A., SHAHZAD, I., REHMAN, A. AND AHMAD, Z. Prevalence of aflatoxicosis in broiler chickens in Quetta, Pakistan	1021
ALI, S., ALI, Q., ABATIH, E.N., ULLAH, N., MUHAMMAD, A., KHAN, I. AND AKHTER, S. Sero-prevalence of <i>Brucella abortus</i> among dairy cattle and buffaloes in Pothohar Plateau, Pakistan	1041
KAKAR, M.U.H., MAQBOOL, A., KHAN, U.J., KAKAR, A., KHAN, M.S. AND LATEEF, M. Comparative efficacy of various indigenous and allopathic drugs against ovine fasciolosis (S.C.)	1170
Fish and Fisheries	
RASOOL, F., QURESHI, N.A., PARVEEN, S., SIDDIQUE, M., HAMEED, A., KHAN N. AND IQBAL, K.J. Morphometric parameters based study of the hatchery raised and natural populations of <i>Labeo rohita</i>	903
BAŞUSTA, A., BAŞUSTA, N. AND ÖZER, E.I. Length-weight relationship of two puffer fishes, <i>Lagocephalus sceleratus</i> and <i>Lagocephalus spadiceus</i> , from Iskenderun Bay, Northeastern Mediterranean, Turkey	1047
WARYANI, B., ZHAO, Y., ZHANG, C., DAI, R. AND ABBASI, A.R. Anatomical studies of the olfactory epithelium of two cave fishes <i>Sinocyclocheilus jii</i> and <i>S. furcodorsalis</i> (Cypriniformes: Cyprinidae) from China	1091
KHAN, U., HASAN, Z., INAYATULLAH, M. AND JAN, A. Analysis of stomach contents of freshwater catfish, <i>Eutropiichthys vacha</i> (Hamilton, 1822) from Khyber Pakhtunkhwa Rivers, Pakistan (S.C.).....	1153
BASUSTA, A., BAL, H. AND ASLAN, E. Otolith biometry-total length relationships in the population of Hazar Bleak, <i>Alburnus heckeli</i> (Battalgil, 1943) Inhabiting Lake Hazar, Elazig, Turkey (S.C.).....	1180
Toxicology	
LATIF, A., ALI, M., SAYYED, A.H., IQBAL, F., USMAN, K., RAUF, M. AND KAOSER, R. Effect of copper sulphate and lead nitrate, administered alone or in combination, on the	
histology of liver and kidney of <i>Labeo rohita</i> ...	913
NAZ, S., JAVED, M. AND TAHIR, A. Assessing growth responses of fish exposed to heavy metals mixture by using regression analyses	921
NWANI, C.D., IVOKE, N., UGWU, D.O., ATAMA, C., ONYISHI, G.C., ECHI, P.C. AND OGBONNA, S.A. Investigation on acute toxicity and behavioral changes in a freshwater African catfish, <i>Clarias gariepinus</i> (Burchell, 1822), exposed to organophosphorous pesticide, Termifos®	959
AHMAD, M., ASHRAF, M., KHAN, M.S., JAVEED, A., DURRANI, A.Z., KHAN, M.R., ALTAF, I., IJAZ, M. AND MALIK, N.A. Toxic effects of chloroform and aqueous extracts of <i>Peganum harmala</i> on hematological and growth parameters in rabbits	989
EL-NAGER, D.M. AND ALDAHMASH, B.A. Effect of corn oil, flaxseed oil and black seed oil on testicular damage induced by lead acetate in albino mice: A histological study	1083
TABINDA, A.B., ZAFAR, S., YASAR, A. AND MUNIR, S. Metals concentration in water, fodder, milk, meat, blood, kidney and liver of livestock and associated health impacts by intake of contaminated milk and meat (S.C.)....	1156
SHOAIB, N., SIDDIQUI, P.J.A. AND KHALID, H. Toxicity of synthetic pyrethroid pesticides, fenpropathrin and fenvalerate, on killifish <i>Aphanitus dispar</i> juveniles (S.C.).....	1160
Wildlife	
KHAN, W.A. AND MIAN, A. Comparative population biology of black (<i>Francolinus francolinus</i>) and grey (<i>F. pondicerianus</i>) francolins under Lal Suhana National Park (Pakistan) conditions	949
SIDRA, S., ALI, Z. AND CHAUDHRY, M.N. Avian diversity at New Campus of Punjab University in relation to land use change	1069
SCHELTEMA, G. Little gull: A new bird record for Pakistan (S.C.)	1177
Palaeontology	
KHAN, M.A., IQBAL, M., NAYYER, A.Q., AKHTAR, M., SHAHZADI, M. AND MAHMOOD, K. <i>Tetraconodon</i> (Mammalia: Artiodactyla: Suidae) from the Late Miocene Dhok Pathan formation of Pakistan	975
KHAN, M.A., BATool, A., NAYYER, A.Q. AND AKHTAR, M. <i>Gazella lydekkeri</i> (Cetartiodactyla: Ruminantia: Bovidae) from the Middle Siwaliks of Hasnot (Late Miocene), Pakistan	981

Biochemistry / Physiology

- ZHU, W.-L., ZHANG, L. AND WANG, Z.-K. Effects of exogenous leptin on body mass, thermogenesis capacity and hormone concentrations of Yuman Chinese vole, *Eothenomys miletus*, under varied photoperiod .. 997
ÖZPARLAK, H. Effect of seasons on fatty acid composition and n-3/n-6 ratios of muscle lipids of some fish species in Apa Dam Lake, Turkey 1027
KHADIM, N., IQBAL, S., GILLANI, Q.A., SAFDAR, S. AND IQBAL, F. Supplementation of GABA-B receptor antagonist (CGP 55845), following hypoxia ischemia encephalopathy moderately affects the hematological and serum biochemical profile in albino mice (*S.C.*)..... 1164
SEKI, Y. First report on the high magnitude of seasonal weight changes in the raccoon dog subspecies *Nyctereutes procyonoides viverrinus* in Japan (*S.C.*) 1172
-

Livestock Production

- DURU, M., ERDOĞAN, Z., DURU, A., KÜÇÜKGÜL, A., DÜZGÜNER, V., KAYA, D.A. AND ŞAHİN, A. Effect of seed powder of a herbal legume fenugreek (*Trigonella foenum-graceum* L.) on growth performance, body components, digestive parts, and blood parameters of broiler chicks 1007
IQBAL, M.F., KHAN, R.N.A., HASHIM, M.M., AHMAD, T., MIAN, A.A., ISHAQ, K. AND REHMAN, A. Formononetin influences growth and immune responses in broilers 1015
-

Entomology

- SINGH, V. AND BANYAL, H.S. Insect fauna of Khajjiar Lake of Chamba District, Himachal Pradesh, India 1053
-

Human Diseases / Genetic Diseases

- NAZ, S., HAMEED, A., SHARIF, S., KOSAR, S., RASHID, F., SHEHZADI, A., FARASAT, T. AND FAZAL, S. Blindness and visual impairment in retinitis pigmentosa: a Pakistani eye hospital-based study (*S.C.*)..... 1147
-

Microbiology

- SHAFEE, M., KHAN, A.W., SAMAD, A., ABBAS, F., BABAR, S., AWAN, M.A. AND WADOOD, A. Bacteriological quality assessment of raw milk under traditional managemental system in Quetta, Pakistan (*S.C.*) 1150
-

Cell Biology

- RASGELE, P.G. AND KAYMAK, F. Evaluation of genotoxic and cytotoxic effects of natamycin in mice bone marrow cells 1103
-

Marine Biology

- KIANI, M.S., IQBAL, P., SIDDIQUI, P.J.A. AND MOAZZAM, M. First records of the striped dolphin (*Stenella coeruleoalba*) and rough-toothed dolphin (*Steno bredanensis*) in Pakistani waters: A review of occurrence and conservation status in the Indian Ocean 1113
Obituary note: Dr. Thomas Jones Roberts..... 1183
-

NUMBER 5

Genetics, Genetic Diseases

- MALIK, S. AND DIN, M.A. Genetic heterogeneity and gene diversity at *ABO* and *Rh* loci in the human population of Southern Punjab, Pakistan 1185
ALI, A., SIDDIQUE, M.K., GALE, R.E. AND SHAKOORI, A.R. Frequency of *NPM1* mutations in Pakistani acute myeloid leukemia patients 1429
AZIZ, I. AND SHAKOORI, A.R. Frequency of pro allele on codon 72 of *TP53* in female breast cancer patients of pakistan: molecular stress or geography 1437
-

Entomology

- CHANNA, S.A., SULTANA, R. AND WAGAN, M.S. Morphology and burrowing behaviour of *Schizodactylus minor* (Ander, 1938) (Grylloptera: Schizodactylidae: Orthoptera) of Pakistan 1191
KHATRI, I., RUSTAMANI, M.A., AHMED, Z., SULTANA, R. AND ZAIDI, S. Host records of Typhlocybinae (Auchenorrhyncha: Hemiptera: Cicadellidae) of Zoological Museum, University of Karachi, Pakistan 1263
IQBAL, T., INAYATULLAH, M. AND AHMED, S. New records and a key to the species of genus *Hockeria* Walker (Hymenoptera: Chalcididae) from Khyber Pakhtunkhwa, Pakistan 1279
-

- HÜSEYINOĞLU, Y. Faunistic study on Papilionoidea and hesperioidea (Lepidoptera) of Göksu Valley in Mut, Southern Turkey 1291
RAHIM, J., KHAN, M.R., KHAN, M.A.G. AND NAZIR, N. Biodiversiy of ground beetles (Coleoptera: Carabidae) from District Poonch, Azad Kashmir (*S.C.*)..... 1463
AHMED, Z. AND HÁVA, J. *Anthrenus*

<i>(Anthrenops) coloratus</i> Reitter, 1881 (Coleoptera: Dermestidae), new record for Pakistan (<i>Short Note</i>)	1477
Pest and Pest Control	
SALJOQI, A.R., ALI, S. AND REHMAN, S. Population dynamics of <i>Aphis gossypii</i> (Glover) and its associated natural enemies in different okra varieties	1197
MUHAMMAD, W., IQBAL, N., SAEED, S., JAVED, M. AND KHALID, K.M. Monitoring and varietal preference of mango midge, <i>Procontarinia mangicola</i> (Diptera: Cecidomyiidae)	1273
ELEKÇIOĞLU, N.Z. AND UYGUN, N. Population fluctuation of citrus leafminer, <i>Phyllocnistis citrella</i> Stainton (Lepidoptera: Gracillariidae) and its parasitoids in the Eastern Mediterranean Region of Turkey	1393
KEPENEKCI, I., TÜLEK, A., ALKAN, M. AND HAZIR, S. Biological control potential of native entomopathogenic nematodes against the potato tuber moth, <i>Phthorimaea operculella</i> (Zeller) (Lepidoptera: Gelechiidae) in Turkey	1415
ÖZMEN, M. AND YARDIM, E.N. Effect of malathion applications at different times on the Alfalfa Weevil population, natural enemies, forage yield and protein content (<i>S.C.</i>).....	1459
Biochemistry / Molecular Biology / Physiology	
FATIMA, T., ROOHI, N. AND ABID, R. Circulatory proteins in women with breast cancer and their chemotherapeutic responses ..	1207
ZHANG, L., CAI, J., XIAO, C. AND WANG, Z. A protocol for DNA extraction from feces of the wild pygmy lorises, <i>Nycticebus pygmaeus</i>	1235
XIA, C., LIU, W., XU, W., YANG, W., XU, F. AND BLANK, D. Diurnal time budgets and activity rhythm of the asiatic wild ass <i>Equus hemionus</i> in Xinjiang, Western China	1241
MAHMOOD, S.U., BASHIR, M.H., ABRAR, M., SABRI, M.A. AND KHAN, M.A. Appraising the changes in the nutritional value of stored wheat, <i>Triticum aestivum</i> L. infested with acarid mite, <i>Rhizoglyphus tritici</i> (Acari: Acaridae).....	1257
DKHIL, M.A., AL-QURAISHY, S. AND MONEIM, A.E.A. Effect of pomegranate (<i>Punica granatum</i> L.) juice and methanolic peel extract on testis of male rats	1343
KHOSA, A.N., BABAR, M.E., NADEEM, A., HUSSAIN, T., BILAL, F., JAVED, K. AND MUHAMMAD, K. Identification of molecular markers in bone morphogenetic protein15	
(BMP15) gene of Balochi sheep	1351
DIAB, M.S.M., BAUOMY, A.A., DKHIL, M.A., AMER, O.S.O. AND AL-QURAISHY, S. Role of <i>Morus alba</i> in ameliorating <i>Schistosoma mansoni</i> -Induced renal and testicular injuries in mice	1367
KHAN, A., BAQIR, T. AND NAQVI, A.N. Serum protein levels in goat breeds of Gilgit-Baltistan, Pakistan (<i>S.C.</i>).....	1453
SALEEM, F. AND SHAKOORI, A.R. A rapid DNA extraction method for <i>Bacillus thuringiensis</i> (<i>S.C.</i>)	1470
Animal Production	
JATOI, A.S., SAHOTA, A.W., AKRAM, M., JAVED, K., HUSSAIN, J., MEHMOOD, S. AND JASPAL, M.H. Hatching traits as influenced by different body weight categories in four close-bred flocks of Japanese quails (<i>Coturnix coturnix japonica</i>)	1215
INAYAT, S., AYAZ, M., PASHA, T.N., ABDULLAH, M., WAHEED, A. AND NADEEM, M. Farinographic studies of mozzarella cheese at optimized conditions	1423
Environmental Pollution / Toxicology	
KHAN, Z.I., KASHAF, S., AHMAD, K., SHAHEEN, M., YOUNIS, S. AND ARSHAD, F. Impact of use of press mud as fertilizer on the concentration of copper and nickel in the soil and livestock oat fodder	1221
ÇİÇEK, A., TOKATLI, C. AND KÖSE, E. Ecological risk assessment of heavy metals in sediment of Felent Stream, Sakarya River Basin, Turkey	1335
AL-SADOON, M.K., ORABI, G.M. AND BADR, G. Toxic effects of crude venom of a desert cobra, <i>Walterinnesia aegyptia</i> , on liver, abdominal muscles and brain of male albino rats	1359
Wildlife / Biodiversity	
ALI, S., RAKHA, B.A., HUSSAIN, I., NADEEM, M.S. AND RAFIQUE, M. Ecology of feral pigeon (<i>Columba livia</i>) in urban areas of Rawalpindi/Islamabad, Pakistan	1229
TURGHAN, M., MA, M., ZHANG, X., ZHANG, T. AND CHEN, Y. Current population and conservation status of the Tibetan wild ass (<i>Equus kiang</i>) in the Arjin Mountain Nature Reserve, China	1249
ŞEREFLİŞAN, H., ÇEK, S. AND ŞEREFLİŞAN, M. The reproductive cycle of <i>Potomida littoralis</i> (Cuvier, 1798) (Bivalvia: Unionidae) in Lake Gölbaşı, Turkey	1311

TAHIR, H.M., KHAN, S.Y., AND ARSHAD, M. Motorway (M 2): A threat to the wild animals (S.C.)	1468	Lake, Côte d'Ivoire	1405
Parasitology			
ANWAR, S.A., MAHDI, M.M. AND CHAUDHRY, F.A. Evaluation of two vegetables against <i>Meloidogyne incognita</i> infection	1285	HAYYAT, M.U. AND ALI, S. Kinetics of an extracellular β-D-fructofuranosidase fructohydrolase production from a derepressed mutant of <i>Saccharomyces carlsbergensis</i> and parameter significance analysis by 2-factorial design	1299
KIR, İ., SAMANCI, İ. AND ERDOĞAN, M. The relationship between growth and parasites in carp (<i>Cyprinus carpio</i> L., 1758) inhabiting Karacaören II Dam Lake	1451	ANDLEEB, S., GHAURI, M.A. AND QAZI, J.I. Isolation of malathion degrading chromogenic <i>Pseudomonas aeruginosa</i> strains from insecticide impregnated soils (S.C.)	1447
AFSHAN, K., BEG, M.A., RIZVI, S.S.R. AND QAYYUM, M. Helminths and nematode infection in norway rats (<i>Rattus norvegicus</i>) captured from Northern Punjab, Pakistan (S.C.)	1456	NUMBER 6	
Cell Biology			
PENGSAKUL, T., CHENG, Z., SULEIMAN, Y.A., TAWATSIN, A. AND THAVARA, U. Morphological observations on haemo- lymphocytes in <i>Oncomelania hupensis</i> (Gastropoda: Pomatiopsidae).....	1321	SALJOQI, A.U.R. AND WALAYATI, W.K. Management of sugarcane stem borer <i>Chilo</i> <i>infuscatellus</i> (Snellen) (Lepidoptera: Pyralidae) through <i>Trichogramma chilonis</i> (Ishii) (Hymenoptera: Trichogrammatidae) and selective use of insecticides	1481
ZAHID, B., KHAN, M.R., ASLAM, A., DURRANI, A.Z., ALAM, S., SALEEM, M.H. AND MEHMOOD, K. Effect of a herbal supplement livol on the growth performance and antibody response against infectious bursal disease virus in broiler chicks	1387	KARAR, H., ARIF, J., HAMEED, A., ALI, A., HUSSAIN, M., SHAH, F.H. AND AHMAD, S. Effect of cardinal directions and weather factors on population dynamics of mango mealybug, <i>Drosicha mangiferae</i> (Green) (Margarodidae: Homoptera) on chaunsa cultivar of mango	1541
AFSAR, N. AND SIDDIQUI, G. Report of imposex syndrome in <i>Thais tissoti</i> (Neogastropoda) from vicinity of Karachi Port, Pakistan (S.C.) ..	1472	HAMEED, A., SALEEM, H.M., AHMAD, S., IQBAL, J., KARAR, H. AND AMIN, A. Predatory potential and life history characteristics of eleven spotted beetle, <i>Coccinella undecimpunctata</i> L. reared on cotton mealybug, <i>Phenacoccus solenopsis</i> Tinsley	1555
Animal Diseases			
ABDEL-BAKI, A.A.S. AND AL-QURAISHY, S. Prevalence of Coccidia (<i>Eimeria</i> spp.) infection in domestic rabbits, <i>Oryctolagus</i> <i>cuniculus</i> , in Riyadh, Saudi Arabia	1329	REHMAN, H.M.U., MAHMOOD, R. AND RAZAQ, M. Phenology, population dynamics and within tree distribution of <i>Dasineura</i> <i>amaramanjarae</i> Grover, 1965 (Diptera: Cecidomyiidae) in Punjab, Pakistan	1563
ZAHID, B., KHAN, M.R., ASLAM, A., DURRANI, A.Z., ALAM, S., SALEEM, M.H. AND MEHMOOD, K. Effect of a herbal supplement livol on the growth performance and antibody response against infectious bursal disease virus in broiler chicks	1387	ALDAWOOD, A.S., RASOOL, K.G., ALRUKBAN, A.H., SOFFAN, A., HUSAIN, M., SUTANTO, K.D. AND TUFAIL, M. Effects of temperature on the development of <i>Ephestia cautella</i> (Walker) (Pyralidae: Lepidoptera): A case study for its possible control under storage conditions	1573
AFSAR, N. AND SIDDIQUI, G. Report of imposex syndrome in <i>Thais tissoti</i> (Neogastropoda) from vicinity of Karachi Port, Pakistan (S.C.) ..	1472	MALIK, M.N., FREED, S., GUL, H.T., AKMAL, M. AND NAEEM, M. Microbial control of maize army worm, <i>Mythimna separata</i> (Lepidoptera: Noctuidae) by entomopathogenic fungi	1607
Palaeontology			
KHAN, M.A., RAZA, A., BATool, A., NAYYER, A.Q., AKHTAR, M. AND RUBAB, K. New boselaphine remains from the Dhok Pathan Formation of the Middle Siwaliks, Northern Pakistan	1377	QASIM, M.U., HASSAN, M.W., WANG, J.-J.,	
Fish, Fisheries			
SHEP, H., KONAN, M.K., DOUMBIA, L., OUATTARA, M., BOUSSOU, C.K., OUATTARA, A. AND GOURÈNE, G. Feeding relationships among <i>Tilapia zillii</i> (Gervais, 1848), <i>Tilapia guineensis</i> (Bleeker, 1862) and their hybrid in Ayamé Man-Made			

JAMIL, M., IQBAL, J. AND HASAN, M.U. Management of <i>Tribolium castaneum</i> (Coleoptera: Tenebrionidae) with phosphine fumigation in relation to packaging materials and food types	1639
ELEKÇIOĞLU, N.Z. Color preference, distribution and damage of thrips associated with lemon and orange in Adana, Turkey	1705
SAGHEER, M., ALI, K., HASAN, M.U. RASHID, A., SAGHEER U. AND ALVI, A. Repellent and toxicological impact of acetone extracts of <i>Nicotiana tabacum</i> , <i>Peganum hermala</i> , <i>Saussurea costus</i> and <i>Salsola baryosma</i> against red flour beetle, <i>Tribolium castaneum</i> (Herbst)	1735
Biotechnology	
NADEEM, S., SULTAN, M.T., BUTT, M.S., KHAN, S.H., MUZZAMIL, H.M. AND NIAZ, B. Improvement of wild bacterial strain NIAB-SM-3 for better lysine production using N-methyl-N'-nitro-N-nitrosoguanidine (NTG)	1489
SHAKOOR, S., AFTAB, S. AND REHMAN, A. Characterization of cellulose degrading bacterium, <i>Bacillus megaterium</i> S3, isolated from indigenous environment	1655
Parasitology	
AHMED, H., KHAN, M.R., PANADERO-FONTÁN, R., SÁNDEZ, C.L., ASIF, S., MUSTAFA, I. AND QAYYUM, M. Influence of epidemiological factors on the prevalence and intensity of infestation by <i>Hypoderma</i> spp. (Diptera: Oestidae) in cattle of Potowar Region, Pakistan	1495
ÖZTÜRK, T. AND ÇAM, A. Trichodinid parasites (Protozoa: Ciliophora: Peritrichida) of invasive gobiid fish inhabiting the lower Kızılırmak Delta in Samsun, Turkey	1517
KAKAR, H., LATEEF, M., MAQBOOL, A., JABBAR, M.A., ABBAS, F., JAN, S., RAZZAQ, A., KAKAR, E. AND SHAH, H. Prevalence and intensity of ovine gastrointestinal nematodes in Balochistan, Pakistan	1669
JIA, Q., GU, X., LIU, H., LI, J. AND LIU, Y. Seasonal dynamics of <i>Fasciola hepatica</i> burdens in sheep at a diagnostic laboratory in HeBei Province, China (S.C.)	1776
Molecular Genetics	
ALI, S.H.B., YOUNIS, M., BANGASH, K.S., RAUF, A., ANWAR, K., KHURRAM, R., KHAWAJA, M.A., QURESHI, A.A.,	
AKHTER, S., AZAM, M., KIEMENNEY, L.A. AND QAMAR, R. Common variants at 8q24 confer susceptibility to urothelial bladder cancer in the Pakistani population	1501
Entomology	
MUKHTAR, M.K. Description of two new species of the genus <i>Oxyopes</i> (Araneae: Oxyopidae) from Punjab, Pakistan	1511
BOZDOĞAN, H., BAHADIROĞLU, C. AND TOROĞLU, S. Some behavioral observations on larvae of antlion, <i>Myrmeleon formicarius</i> Linnaeus, 1767 (Neuroptera: Myrmeleontidae) in forest and non-forest areas of Kahramanmaraş Province, Turkey	1525
Wildlife / Ecology	
MAHMOOD, T., JABEEN, K., HUSSAIN, I. AND KAYANI, A.R. Plant species association, burrow characteristics and the diet of the Indian pangolin, <i>Manis crassicaudata</i> , in the Potohar Plateau, Pakistan	1533
RISTIĆ, Z.A., MARKOVIĆ, V., KOVACHEVIĆ, M., NAĐ, I., MATEJEVIĆ, M. AND JOVANOVIĆ, T. The significance of egg shell color on the pheasant hatching production results	1549
YAVUZ, G., ÇOLAK, E. AND KANKILIÇ, T. Investigations on the ecology of eurasian water vole, <i>Arvicola amphibius</i> (Rodentia: Mammalia) in Ankara Province	1599
HASSAN, M.M.U., NAZ, S., ABRAR, M., MAHMOOD, S., ALI, Z., MAHMOOD, F. AND SARWAR, M. Assessing the effects of the mating sex ratios on reproductive performance of Indian peafowl, <i>Pavo cristatus</i>	1623
YI-QUN, W., XIU, X., NAI-FA, L. AND FENG, X. Seasonal changes in habitat use of blue-eared pheasant, <i>Crossoptilon auritum</i>	1699
JURINOVIC, L. AND KRALJ, J. Effect of weather conditions on dynamics of the black-headed gull, <i>Chroicocephalus ridibundus</i> , wintering on Jakuševac, Zagreb City Rubbish Dump (S.C.)	1773
Infectious Diseases / Human Diseases / Animal Diseases	
ARSHAD, A., KHAN, H.U., FARZANA, ASLAM, M.S., REHMAN, T., ARSHAD, M., AHMED, M.S., IJAZ ALI, I. AND SALJOQI, A.U.R. Seropositivity and active HCV infection in patients from Peshawar Division of Khyber Pakhtunkhwa Province, Pakistan	1579

MARIAM, AHMED, K., MIR, A., JAN, M., IMRAN, R., SHAH, G., FARMANULLAH AND LATIF, A. Prevalence of bacteria in chronic suppurative otitis media patients and their sensitivity patterns against various antibiotics in human population of Gilgit	1647
KHAN, I., ALI, S., GWIDA, M., ELSCHNER, M.C., IJAZ, M., ANJUM, A.A. AND NEUBAUER, H. Prevalence of <i>Burkholderia mallei</i> in equids of Remount Depot, Sargodha, Pakistan	1751
RAUF, A., NADEEM, M.S., RIAZ, H., LATIF, M.M., LATIF, M.Z., AHMED, N. AND SHAKOORI, A.R. Tuberculosis and hepatitis infections among the underprivileged orphan children of Northern Pakistan	1765
Sargodha, Pakistan	1629
TABINDA, A.B., BASHIR, S., YASAR, A. AND MUNIR, S. Heavy metals concentrations in water, sediment and fish in river Sutlej at Sulemanki Headworks	1663
SOLIMAN, D.E.-E.I., GABRY, M.S.I., FARRAG, A.R.H. AND ABDEL MONIEM, A.E. The protective role of neem leaves extract on cisplatin-induced polysaccharides and protein depletion in rat liver and kidney	1687
AL-SHAMMARI, A.M., KHAN, S.U., AL-SADOON, M.K. AND AL-SALEH, S.S.M. Biochemical characterization of pyramid viper, <i>Echis pyramidum</i> , venom	1741
NASEEM, S., TAHIR, H.M. AND YAQOOB, R. Effect of chlorpyrifos on the activities of non-specific esterases in <i>Musca domestica</i> L. (S.C.)	1771

Drugs / Herbs

NAZ, S., MAQBOOL, A., AHMAD, M.U.D., ANJUM, A.A. AND ZAMAN, S. Efficacy of ivermectin for control of zoophilic malaria vectors in Pakistan	1585
RIAZ, M., RAHMAN, N. AND HAQ, M.Z.U. Anthelmintic and insecticidal activities of <i>Verbascum thapsus</i> L.	1593
BARAKAT, I.A.H. AND AL-HIMAIDI, A.R. Effects of fenugreek seed extract on <i>in vitro</i> maturation and subsequent development of sheep oocytes	1679

Marine Biology

AYDIN, M. Length-weight relationship and reproductive features of the Mediterranean green crab, <i>Carcinus aestuarii</i> Nardo, 1847 (Decapoda: Brachyura) in the Eastern Black Sea, Turkey	1615
--	------

Biochemistry / Toxicology / Environmental Pollution

AHMAD, K., KHAN, Z.I., JABEEN, H., ASHRAF, M., SHAHEEN, M. AND RAZA, S.H. Assessment of heavy metals and metalloids toxicity in buffaloes fed on forages irrigated with domestic wastewater in Bhalwal,	1750
BAŞUSTA, A., BAŞUSTA, N., ÖZER, E.I., GIRGIN, H. AND ASLAN, E. Some population parameters of the lessepsian suez puffer (<i>Lagocephalus suezensis</i>) from İskenderun Bay, Northeastern Mediterranean, Turkey (S.C.)	1779

Livestock

TUNIO, M.T., YANG, S., CHEN, Z., ZUBAIR, M., QIU, J., ZHAO, Y., CHEN, G., CHOW, Y. AND CHEN, A. Effect of pigments with different origins on pigmentation and performance of broilers	1715
---	------

Fisheries

YOUAFZAI, A.M., KHAN, W. AND HASAN, Z. Fresh records on water quality and ichthyodiversity of River Swat at Charsadda, Khyber Pakhtunkhwa	1727
KALHORO, M.A., LIU, Q., MEMON, K.H., CHANG, M.S. AND JATT, A.N. Estimation of maximum sustainable yield of Bombay duck, <i>Harpodon nehereus</i> fishery in Pakistan using the CEDA and ASPIC packages	1757
BAŞUSTA, A., BAŞUSTA, N., ÖZER, E.I., GIRGIN, H. AND ASLAN, E. Some population parameters of the lessepsian suez puffer (<i>Lagocephalus suezensis</i>) from İskenderun Bay, Northeastern Mediterranean, Turkey (S.C.)	1779