

CURRICULUM VITAE

Name : **Dr. Sanjay Kumar Bhardwaj**

Father's Name : Shri. J. N. Bhardwaj

Present Status : **Professor** (*Since 1.7.2010*)

Address : Department of Zoology
Ch. Charan Singh University, Meerut

Residential Address : C-9, Ch. Charan Singh University Campus
Meerut-250 004, (U.P.)

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Total Research Experience : 27 years including predoctoral

Training and Expertise : Laparotomy and other conventional approaches
(castration, ovariectomy etc.) used for studying
photoperiodism and seasonal reproduction

Standard techniques used for activity rhythm
recordings

Area of Research : Photoperiodism and Seasonal breeding in birds
Light color and intensity in understanding breeding.

Publications : Full Length Papers – 46
Papers in Proceedings – 03
Articles in Books - 02

Fellowships : JRF & SRF- DST (1988 - 1991)
CSIR -Research Associate (1994-1996)

Awards and Honours : **Fellow**, The Academy of Environmental Biology
(FAEB), 2012
INSA Exchange Program Fellowship, 2007
INSA Exchange Program Fellowship, 2017

Seminar/ Symposia : **National - 34**
International - 13

Workshops : 04

Research Projects

Ongoing - 01

- **2013-2018:** Anticipation in genes: Molecular, physiology and behavioral correlates of response of circannual clocks to seasons in night-migratory song birds- Department of Biotechnology, New Delhi

Completed- 05

- 2013-2016: A study on migratory orientation behaviour in the Palaearctic-Indian night-migratory songbirds- Department of Science & Technology, New Delhi
- 2011-2014: A study of the dynamics of the photoperiodic response system in brahminy myna (*Sturnus pagodarum*) – University Grants Commission, New Delhi
- 2007-2010: Sensitivity of the Entrainment Pathway in a Photoperiodic Bird - Department of Science & Technology, New Delhi
- 2004-2007: A study of wavelength and intensity dependence of photoperiod-induced seasonality in the brahminy myna (*Sturnus pagodarum*) - University Grants Commission, New Delhi
- 2001-2004: Photoperiodic control of reproduction and immune function in house sparrow, *Passer domesticus* – Council of Scientific and Industrial Research, New Delhi
- Reproductive functions under variable light intensities in birds - UGC/CCSU (Minor)

Conferences

International

- **2017:** International Symposium on Biological Timing and Health Issues in the 21st Century, University of Delhi, Delhi, India
- **2017:** International Conference on Reproductive Biology and Comparative Endocrinology, University of Hyderabad, Hyderabad, India
- 2016: 29th Conference on International Society for Chronobiology, Suzhou, **China**
- 2015: CSHA Conferences-Biological Rhythms, Suzhou, **China**
- 2014: 26th International Ornithological Congress, Rikkyo University, Tokyo, **Japan**
- 2012: 10th International Symposium on Avian Endocrinology, Gifu, **Japan**
- 2012: International Congress in Chronobiology 2012, University of Delhi, Delhi, India
- 2011: World Congress for Global Climate Change & Biodiversity Conservation, GKV, Haridwar, India

- 2010: 25th International Ornithological Congress, Campos do Jordão, SP, **Brazil**
- 2006: 24th International Ornithological Congress, Hamburg, **Germany**
- 2004: 14th International Congress on Photobiology, Jeju, **Korea**
- 2004: International Conference on Bird and Environment, GKV, Haridwar, India
- 1990: International Symposium on Current Status of Chronobiology, Pt. Ravi Shankar Shukla University, Raipur, India

National

- **2017:** Outreach program on Human health and biological timing, Mizoram University, Aizawl
- **2017:** Higher Education in India: Opportunities and Challenges, IQAC, Ch. Charan Singh University, Meerut
- 2016: Opportunistic Human Pathogens, Ch. Charan Singh University, Meerut.
- 2016: XXVI National Symposium on Chronobiology, University of Mysore, Mysuru
- 2016: Recent Innovative changes in Science and Technology, Humanities, Law & Commerce in context of Human Welfare, DAV (PG) College, Muzaffarnagar
- 2016: New Education Policy, IQAC, Ch. Charan Singh University, Meerut
- 2015: XXI National Symposium on Chronobiology, Pt. Ravi Shankar Shukla University, Raipur
- 2015: IQAC workshop, Ch. Charan Singh University, Meerut
- 2014: International Conference on Higher Education: Issues & Challenges, College of Education, Greater Noida
- 2014: National Seminar on Threats to Biodiversity and Ecosystems: Impacts of developmental projects and climate change, GKV, Haridwar
- 2014: International Conference on Life Science and Bioengineering, IAMR, Ghaziabad
- 2014: National Conference on Innovations in Science and Technology for inclusive development, ISCA- Haridwar Chapter, Ch. Charan Singh University, Meerut
- 2014: National Seminar on Economic Up gradation: Environment degradation, Rishikesh
- 2013: National Seminar on Faunal Diversity and its Conservation, DAV (PG) College, Muzaffarnagar
- 2012: National Seminar on Emerging pollutants and pathogens: Challenges and Risk Reduction, Indian Institute of Toxicology Research, Lucknow
- 2012: National Conference on Environmental Problems and Remedial Measures, Ch. Charan Singh University, Meerut
- 2012: XXIII National Symposium on Chronobiology, Jai Narain Vyas University, Jodhpur
- 2011: National Seminar on Environment Management and Biodiversity Conservation, OIMT, Rishikesh
- 2011: XXII National Symposium on Chronobiology, Kurukshetra University, Kurukshetra
- 2010: Animal Biodiversity: Physiological aspects of environment strategies, MMH (PG) College, Ghaziabad
- 2010: Professional Development of Teachers in Global Perspective, College of Education, Greater Noida

- 2009: National Symposium on Mathematics in Computer Applications, CCS University, Meerut
- 2009: Symposium on Functional Biology: Comparative Aspects, University of Lucknow, Lucknow
- 2007: National Seminar on Medicinal Plants: Conservation, Cultivation & Utilization II, GKV, Haridwar
- 2007: XIX National Symposium on Chronobiology, Madurai Kamaraj University, Madurai
- 2006: Therapeutic and diagnostic products for reproductive health: Recent trends and future prospects, Indian Institute of Technology, Roorkee
- 2006: National Seminar on Medicinal Plants: Conservation, Cultivation & Utilization, GKV, Haridwar
- 2005: XVII National Symposium on Chronobiology, Banaras Hindu University, Varanasi
- 2003: National Seminar on alternative fuel in New Millennium for India, Chinmaya Degree College, Haridwar
- 2002: National Symposium on Zoology in New Millennium, University of Lucknow, Lucknow
- 2002: National Seminar on Environmental Biology and Fish Biology, Viswa Bharati, Santiniketan
- 2002: 4th Indian Agricultural Scientists and Farmer's Congress, Ch. Charan Singh University, Meerut
- 2001: National Symposium on Chronobiology, K. S. Saket (PG) College, Faizabad
- 2000: National Symposium Chronobiology, Gulbarga University, Gulbarga
- 1994: National Symposium on Chronobiology, Lucknow University, Lucknow
- 1989: 7th All India Symposium on Chronobiology, Karnatak University, Dharwad

Orientation, Refresher courses & Training Programmes

- **2017:** Workshop on Mechanisms of adaptation in the temporal environment, Mizoram University, Aizawl
- 2015: DST-SERB School in Avian Biology, North Eastern Hill University, Shillong
- 2015: DST-SERB School in Avian Biology, Gurkula Kangri Viswavidyalaya, Haridwar
- 2015: DST- SERB School in Chronobiology- III, Mangalore University, Mangalore
- 2014: National Workshop in Nematode Taxonomy (RANT-2014), CCS University, Meerut
- 2012: DST- SERB School in Chronobiology- III, North Eastern Hill University, Shillong
- 2011: DST- SERB School in Chronobiology-III, University of Delhi, Delhi
- 2010: DST- SERC School in Chronobiology II, JNCASR, Jakkur, Bangalore
- 2009: National Workshop on IPR-Awareness, Ch. Charan Singh University, Meerut
- 2009: National Workshop on Applied Nematology, Ch. Charan Singh University, Meerut
- 2008: DST - SERC School in Chronobiology II, University of Lucknow, Lucknow
- 2008: Thematic workshop on Avian Biology, Gurkula Kangri Vishwavidyalaya, Haridwar
- 2005: DST - Third SERC School in Chronobiology, Gulbarga University, Gulbarga
- 2004: Refresher Course in Zoology, Jai Narayan Vyas University, Jodhpur

- 2003: Refresher Course, Gurkula Kangri Vishwavidyalaya, Haridwar
- 2003: DST-Second SERC School of Chronobiology, Pt. Ravi Shankar Shukla University, Raipur
- 2002: DST - First SERC School of Chronobiology, University of Lucknow, Lucknow
- 1999: Orientation Course, Academic Staff College, University of Lucknow, Lucknow

Scientific meets/Symposia Organized

- **Co Organizing Secretary**, National Symposium on zoonotic diseases and their preventive measures, **2017**
- **Convener**, National Workshop on Recent Advances in Nematode Taxonomy, 2014
- **Coordinator**, DST-SERB School in Chronobiology, 2011
- **Coordinator**, DST-SERC School in Chronobiology, 2007
- **Co Organizing Secretary**- Recent Advances in Applied Zoology, 2006

Members of the Scientific Bodies

Indian Science Congress Association	-	Life Member
Indian Society for Chronobiology	-	Life Member
International Society of Applied Biology	-	Life Member
Academy of Environmental Biology	-	Life Member
People for Animals	-	Life Member

Teaching & Research Experience

Post Graduate	-	21 (+) yrs
M. Phil. Supervised	-	37
Ph. D. Supervised	-	07
Ph. D Working	-	03
M. Phil. Working	-	02

Editorial Assignment

- *Assistant Editor*, Environment Conservation Journal

Administrative Experience

- **Assistant Warden**, Dr. R.K. Singh Hostel, 25.8.1997 to 05.10.1998
- Member, University Executive Council, Ch. Charan Singh University, 2002-2003
- **In charge**, University Guest House, Ch. Charan Singh University, 03.12.2006 to 31.3.2007
- **Warden**, Dr. B. R. Ambedkar Hostel, Ch. Charan Singh University, 18.5.2003 to 31.12. 2008
- Member, National Planning Committee on SERC School in Chronobiology II- Clock, Rhythms & Behavior, 2008 - 2010
- **Head**, Department of Zoology, Ch. Charan Singh University, July, 2011 to July, 2014

- **Member**, University Executive Council, , September 19, 2013 to September 18, 2014
- **Controller**, University Results, Ch. Charan Singh University 2011, 2012, 2013, 2014
- *Special Invitee*, DST-SERB Planning Committee Meeting for School in Chronobiology, Mangalore University, Mangalore, 2014
- **Controller, MCQ**, Ch. Charan Singh University, 2014-2015
- **Deputy Controller**, OMR Evaluation, Ch. Charan Singh University, 2015, 2016
- **Expert**, Board of Studies (Biosciences), Himachal Pradesh University, Shimla, 2015-2017
- **Coordinator**, University Results, Ch. Charan Singh University, 2016
- **Centre Superintendent**, Campus Entrance Test, 2016
- **Deputy Controller**, Back Paper Evaluation, Ch. Charan Singh University, 2016
- **Coordinator**, Back Paper Results, Ch. Charan Singh University, 2016
- **Deputy Controller**, Semester Evaluation, Ch. Charan Singh University, 2017
- *Vigilance Officer*, CCS University, January 7, 2010 - *Continued*
- *Treasurer, Indian Society for Chronobiology*- March 16, 2011- *Continued*
- **Member, Academic Council**, Ch. Charan Singh University, 2015- *Continued*
- *Member, IQAC*, Ch. Charan Singh University, **2017**
- **Coordinator**, Semester and Professional Results, Ch. Charan Singh University, **2017**
- *Coordinator*, University Results, Ch. Charan Singh University, **2017**

Research Publications

1. Kumar, V. and **Sanjay Kumar, B.** (1990). Effects of testosterone on the testes, body weight and plumage regeneration in photorefractory male redheaded bunting, *Emberiza bruniceps*. Indian Journal of Experimental Biology, 28: 417-420 (CSIR), (**Impact factor-1.295**)
2. Kumar, V. and **Sanjay Kumar, B.** (1990). Effects of photoperiod, gonadectomy and testosterone therapy on food intake and body weight in male redheaded bunting, *Emberiza bruniceps*. Journal of Reproductive Biology and Comparative Endocrinology, 2: 80-87.
3. **Sanjay Kumar, B.** and Kumar, V. (1991). Seasonal reproduction in subtropical brahminy myna: Role of photoperiod. General and Comparative Endocrinology, 83:354-365 (Academic Press, USA), (**Impact factor-3.267**)
4. Kumar, V. and **Sanjay Kumar, B.** (1991). The development of photorefractoriness in termination of the breeding season in the tropical brahminy myna: Role of photoperiod. Reproduction, Nutrition and Development, 31: 27-36 (France), (**Impact factor-1.9**)
5. Kumar, V., **Sanjay Kumar, B.**, Singh, B.P. and Sarkar, A. (1991). A common functional basis for the photoperiodic mechanism regulating reproductive and metabolic responses the migratory redheaded bunting. Periodicum Biologorum, 93: 169-174 (Yugoslavia), (**Impact factor-0.192**)
6. Kumar, V., **Sanjay Kumar, B.** and Singh, B.P. (1992). Photostimulation of blackheaded bunting: Subjective interpretation of day and night depends upon photophase contrast and light intensity. Physiology & Behaviour, 51(6): 1213-1217 (Elsevier Press, USA), (**Impact factor-2.869**)
7. Kumar, V. and **Sanjay Kumar, B.** (1992). Termination of photorefractoriness in the brahminy myna, *Sturnus pagodarum*: Role of photoperiod and gonadal hormones. Indian Journal of Experimental Biology, 30: 48-53 (CSIR, New Delhi), (**Impact factor-1.295**)
8. **Sanjay Kumar, B.** and Kumar, V. (1993). Photoperiodic control of annual reproductive cycle in subtropical brahminy myna, *Sturnus pagodarum*. General and Comparative Endocrinology, 89: 149-160 (Academic Press, USA), (**Impact factor-3.267**)
9. Kumar, V., Jain, N., Singh, B.P. and **Sanjay Kumar, B.** (1993). Plasma levels of luteinizing hormone in intact and castrated blackheaded bunting (*Emberiza melanocephala*) exposed to stimulatory and non stimulatory photoperiods. Reproduction Nutrition and Development, 33: 143-150 (France), (**Impact factor-1.9**)
10. Kumar, V. and **Sanjay Kumar, B.** (1995). Entrainment of circadian system under variable photocycles (T-photocycles) alters the critical day length for photoperiodic induction in blackheaded buntings. Journal of Experimental Zoology, 273 (4): 297- 302 (Wiley Press, USA), (**Impact factor-1.64**)

11. Kumar, V., **Sanjay Kumar, B.** and Jain, N. (1996). Effect of late afternoon administration of melatonin on photoperiod-induced responses in buntings. Indian Journal of Experimental Biology, 34: 220-225 (CSIR, New Delhi), (**Impact factor-1.295**)
12. **Sanjay Kumar, B.** and Dubey, S. (2002). Effect of late afternoon administration melatonin on photoperiodic responses in house sparrow. Journal of Experimental Zoology (India), 5(2): 189-194.
13. **Sanjay Kumar, B.** (2002). Effect of testosterone on body weight and testicular response in house sparrow, *Passer domesticus*. Journal of Experimental Zoology (India), 5(2): 201- 206.
14. **Sanjay Kumar, B.** and Anushi (2004). Effect of duration and time of food availability on photoperiodic in response in male house sparrow, *Passer domesticus*. Reproduction Nutrition and Development, 44:29-35 (France), (**Impact factor-1.9**)
15. **Sanjay Kumar, B.**, Anushi and Singh, V. (2004). Effect of complete and skeleton photoperiods in the house sparrow (*Passer domesticus*). Biological Memoirs, 30(1):26-30.
16. **Bhardwaj, S. K.** and Kumar, P. (2004). Photosensitivity of body mass and testicular activity of brahminy myna, *Sturnus pagodarum*. Reproduction, Nutrition and Development, 44: 365 -369 (France), (**Impact factor-1.9**)
17. **Bhardwaj, S. K.**, Anushi and Ruhela. S.K. (2004). Photoperiodism in birds and mammals. Journal of Experimental Zoology (India), 7(2):181-200.
18. **Bhardwaj, S. K.** and Kumar, A. (2006). Role of photoperiod in the maturation of juvenile brahminy myna, *Sturnus pagodarum*. Periodicum Biologorum, 108: 89-91 (Yugoslavia), (**Impact factor-0.19**)
19. **Bhardwaj, S. K.** and Anushi (2006). Effect of photoperiod length on body mass and testicular growth in the house sparrow (*Passer domesticus*) and brahminy myna (*Sturnus pagodarum*). Reproduction Nutrition and Development, 46:69-76 (France), (**Impact factor-1.9**)
20. Anushi and **Bhardwaj, S. K.** (2006). Response to complete and skeleton photoperiods in subtropical male house sparrow, *Passer domesticus* (Linnaeus). Indian Journal of Experimental Biology, 44: 325-329 (CSIR, New Delhi), (**Impact factor-0.55**)
21. **Bhardwaj, S. K.**, Sharma, D.K. and Anushi (2006). Effect of complete and skeleton photoperiods on gonadal response in baya weaver. Journal of Environmental Biology, 27 (3): 505-508 (Triveni Enterprises, Lucknow), (**Impact factor-0.197**)
22. **Bhardwaj, S. K.** and Choudhary, I. (2007). Effect of skeleton photoperiods on body mass and testicular response in baya weaver. Biochemical and Cellular Archives, 7(2):337-341.
23. **Bhardwaj, S. K.**, Singh, K. and Anushi (2008). Effect of T photocycle in the photoperiodic induction in house sparrow and brahminy myna. Biotechnology International, 1(4):193-197.

24. **Bhardwaj, S.K.** and Bhardwaj, N. (2008). Effect of light intensity and temperature on the photoperiodic induction in female brahminy myna, *Sturnus pagodarum*. Journal of Experimental Zoology (India), 11(2):527-530.
25. Kumar, A., Pandey, R.K., Choudhary, I., Sharma, D.K. and **Bhardwaj, S.K.** (2010). Role of testosterone on body mass, body molts, primary flight feathers, plumage regeneration and testes in brahminy myna (*Sturnus pagodarum*). The Scientific Temper, 1: 39-46.
26. Anushi and **Bhardwaj, S. K.** (2010). Role of social stimuli in the photoperiodic induction. Environnent Conservation Journal, 11(3):153-160.
27. Gupta, B.K., Sarkar, U.K., **Bhardwaj, S.K.** and Pal, A. (2011). Condition factor, length weight and length-length relationships of an endangered fish *Ompok pabda* (Hamilton 1822) (Siluriformes: Siluridae) from the river Gomti, a tributary of the river Ganga, India. Journal of Applied Ichthyology, 27(3): 962-964 (Blackwell Verlag GmbH), (**Impact factor-0.902**)
28. Pandey, R.K. and **Bhardwaj, S.K.** (2011). Circadian and seasonal responses in Indian weaver bird: Subjective interpretation of day and night depends upon both light intensity and contrast between illuminations. Chronobiology International, 28(9): 758-763 (Informa Healthcare, USA), (**Impact factor-4.028**)
29. **Bhardwaj, S.K.**, Pandey, R.K. and Kumar, A. (2011). Responsiveness to photostimulation in two passeriform birds. Environment Conservation Journal, 12(3): 23-28.
30. Gupta, B.K., Sarkar, U.K. and **Bhardwaj, S.K.** (2012). Assessment of habitat quality with relation to fish assemblages in an impacted river of the ganges basin, northern India. The Environmentalist, 32:35-47 (Springer).
31. Kumar, S., Pandey, R.K., Choudhary, I. and **Bhardwaj, S.K.** (2012). Steroidal feedback on photoperiodic induction of testicular growth and development in two bird species. Journal of Environmental Biology, 33(1):89-94 (Triveni Enterprises, Lucknow), (**Impact factor- 0.682**)
32. **Bhardwaj, S. K.**, Sharma, A.K. and Pandey, R. K. (2013). Effect of melatonin and prolactin on photoperiodic induction in body mass, testicular growth and feather regeneration in Indian weaver bird (*Ploceus philippinus*). Biological Rhythm Research, 44 (3): 451-456 (Taylor & Francis), (**Impact factor-1.216**)
33. Sharma, D.K. and **Bhardwaj, S.K.** (2013). Influence of light intensity and wavelength on testicular responses in male brahminy myna. Biological Rhythm Research, 44(4): 655-662 (Taylor & Francis), (**Impact factor-1.216**)
34. Rana, N., Pandey, R.K. and **Bhardwaj, S.K.** (2013). Avifauna of CCS University Campus, Meerut (U.P.). Environment Conservation Journal, 14(3):151-159.
35. Gupta, B.K., Sarkar, U.K. and **Bhardwaj, S. K.**(2014). Reproductive biology of Indian Silurid catfish *Ompok pabda* in river Gomti. Journal of Environmental Biology, 35(2): 345-351 (Triveni Enterprises, Lucknow), (**Impact factor- 0.563**)

36. Pandey, R.K. and **Bhardwaj, S.K.** (2014). Light intensity on circadian activity behavior in the Indian weaverbird (*Ploceus philippinus*). Indian Journal of Experimental Biology, 52: 510-515. (CSIR, New Delhi), (**Impact factor-0.835**)
37. Malik, S., Pandey, R.K. and **Bhardwaj, S.K.** (2014). Effect of food on seasonal response in Indian weaver bird (*Ploceus philippinus*). Environment Conservation Journal, 15(3): 19-28.
38. Gupta, N.J., Kumar, A. and **Bhardwaj, S.K.** (2015). Photogonadal response of Indian brahmminy myna to resonance cycles in different seasons. Biological Rhythm Research, 46(1):33-38, (Taylor & Francis), (**Impact factor-0.919**)
39. **Bhardwaj, S. K.** and Pandey, R. K. (2015). Light intensity alters the stimulatory effects of long photoperiod but does not alter critical photoperiod in Indian weaver bird (*Ploceus philippinus*). Journal of Ornithology, 156:223-229 (Springer), (**Impact factor-1.711**)
40. Pandey, R. K. and **Bhardwaj, S.K.** (2015). Photoperiodic regulation of seasonal responses in Indian weaver bird (*Ploceus philippinus*). Biological Rhythm Research, 46 (4):483-495, (**Impact factor-0.919**)
41. Gupta, B.K., Sarkar, U.K. and **Bhardwaj, S.K.** (2015). Analysis of morphometric characters and population dynamics of *Ompok pabda* (Hamilton, 1822) from Gomti River in Northern India. Journal of Biological Sciences and Medicine, 1(1): 49-58.
42. Kumar, P., Pandey, R.K. and **Bhardwaj, S.K.** (2016). Effect of photoperiod and temperature on physiological responses in brahmminy myna (*Sturnus pagodarum*). Biological Rhythm Research, 47(3): 475-482, (**Impact factor-0.919**).
43. Pandey, R K and **Bhardwaj, S.K.** (2016). Effect of differential photostimulation on induction of *fos*-like immune-reactivity in the MBH region of Indian weaver birds. Biological Rhythm Research, 47(4):641-648 (**Impact factor-0.919**).
44. Mishra, I., **Bhardwaj, S.K.**, Malik, S. and Kumar, V. (2017). Concurrent hypothalamic gene expression under acute and chronic long days: Implication for initiation and maintenance of photoperiodic response in migratory songbirds. Molecular and Cellular Endocrinology, 439:81-94 (**Impact factor-3.859**).
45. Kumar, P. and **Bhardwaj, S.K.** (2017). Photoperiodic regulation of seasonal responses in black-headed munia (*Lonchura malacca*). Journal of Experimental Zoology (India) 20 (1):207-211.
46. Dixit, A.S., Gupta, N.J., Dwivedi, V. and **Bhardwaj, S.K.** (2017). Control of annual gonadal cycles in Indian songbirds. Biological Rhythm Research [https://doi.org/ 10.1080/ 09291016. 2017.1345437](https://doi.org/10.1080/09291016.2017.1345437)

Submitted

1. Kumar, J., Malik, S., **Bhardwaj, S. K.** and Rani, S. (2017) Interruptions have greater impact than continuity: Shifts of 'night-light' induce differential photoperiodic responses in migratory redheaded bunting. Hormones and Behaviour

Chapter in Books

1. Gupta, N.J., Dwivedi, V., Singh, B.P. and **Bhardwaj, S.K.** (2017). Orientation in migrating animals: Role of Biological clocks. *In: **Biological Time Keeping: Clock, Rhythms and Behaviour***, Ed. V. Kumar, **Springer**, pp. 643-658.
2. **Bhardwaj, S.K.** and Gupta, N.J. (2018). Migration in marine animals. *In: **Water Biology***: Ed. D.R. Khanna and R. Bhutiani, Discovery Publishing House, pp.73-82.

Papers in Proceedings

1. Singh, B.P., **Sanjay Kumar, B.**, Jain, N. and Kumar, V. (1993). Photoperiod modifies locomotor activity pattern in migratory blackheaded bunting, *Emberiza melanocephala*. *In: **Chronobiology*** (A.K. Pati, *ed.*). Pt. Ravi Shankar Shukla University, Raipur, pp. 121-127.
2. **Sanjay Kumar, B.** and Kumar, V. (1993). Photoperiod and seasonal reproduction in the brahminy myna, *Sturnus pagodarum*. *In: **Chronobiology*** (A.K. Pati, *ed.*), Pt. Ravi Shankar Shukla University, Raipur, pp. 129-134.
3. Sharma, D.K., Kumar, A. and **Bhardwaj, S. K.** (2006). Influence of testosterone on body mass and testicular response in the brahminy myna. *In: **Recent Advances in Applied Zoology***, CCS University, Meerut, pp.209-217.