

## BIO-DATA



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### 5. Educational Qualifications:

(Starting from Graduation onwards)

Sr. No.	Degree	University	Year	Subjects	Division
1.	B.Sc. (Medical)	Punjabi Univ., Patiala	1988	Zoology, Botany and Chemistry	First
2.	M.Sc.	--do--	1990	Zoology with Spl. Entomology	First
3.	M.Phil	--do--	1992	Zoology with Spl. Entomology	'O' Grade
4.	Ph.D.	--do--	1998	Zoology, Faculty of Life Sciences	

**6. Area of Specialization:** Entomology, Insect Taxonomy/ Systematics, Avian diversity/Breeding Biology and Environmental Sciences

### 7. R & D projects completed/Ongoing:

- i. Taxonomic status of Tiger moths (Arctiidae: Lepidoptera) from North India. **CSIR.**
- ii. Taxonomic status of Indian Lymantriidae (Lepidoptera) along with bio-ecological notes on certain species. **DST.**

- iii. Taxonomic status of Macro-lepidopterous moth fauna (Ditrysia: Lepidoptera) from Punjab & Haryana. **CSIR.**
- iv. Taxonomic Status of Lasiocampidae (Ditrysia: Lepidoptera) from North-West Himalayas. **UGC**
- v. All India Coordinated Project on Capacity Building in Taxonomy entitled “Taxonomic Status of Superfamily Bombycoidea (Lepidoptera) from Indian Himalayas”. **MOEFCC** since **December 2019.**

**8. Research awards/ Recognition received:**

- a) Senior Research Fellowship Award from CSIR, New Delhi in January, 1994.
- b) Provisional Research Associateship from CSIR, New Delhi in April 1998.
- c) Research Associateship from CSIR, New Delhi in October 1999.
- d) Young Scientist Fast Track Project from DST, New Delhi in December, 2003.
- e) Senior Research Associateship from CSIR, New Delhi in 2008.
- f) Vice President of Zoological Society, Punjabi University, Patiala for year 1997-1998.
- g) President Balbir Memorial Educational Society, Patiala
- h) Joint Secretary, Association of Entomologists
- i) Executive Member, Punjab Academy of Sciences, Patiala
- j) Founder Member & Director, Apna Punjab Foundation
- k) Secretary, Alumni Association of the Department
- l) Certificate of Achievement in the International Scientist Awards on Engineering, Science and Medicine by VDGGOOD Professional Association, 2021.
- m) Global Prestige Award received from NID in International Edupreneur’s Summit held at Dubai, 2023
- n) Fellow/Life Member/member of Eleven Societies/Associations of National level.

**9. List of Papers Taught at PG level:**

S. No.	Paper	Class
1.	Insect, Man and Environment	M.Sc. I Zoology
2.	Zoogeography & Evolution	M.Sc. II Zoology
3.	Insect Pest Control & Toxicology	M.Sc. II Zoology
4.	Environmental Microbiology	M.Sc. I Env. Sciences
5.	Natural Resources	M.Sc. I Env. Sciences
6.	Environmental Impact Assessment & Management	M.Sc. II Env. Sciences

**10. Details of Professional Training and Research Experience, specifying period:**

S. No.	Designation	Period
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1.	M. Phil Student	Two Years: September, 1990 to September, 1992
2.	Project Assistant	Eight months: April, 1993 to December, 1993
3.	SRF (CSIR)	Four Years: January, 1994 to December, 1997
4.	Prov. RA (CSIR)	One Year: April, 1998 to April, 1999
5.	RA (CSIR)	Four Years: October, 1999 to October, 2003
6.	Research Scientist (DST)	Three Years: September, 2004 to September, 2007
7.	SRA (CSIR)	Three Years: May, 2009 to May, 2012
8.	ASSIST. PROFESSOR	Since 2012

**11. Guided for M.Phil: 07**

**12. Ph. Ds Awarded:**

1. 2018. **SUJATA SAINI**. Taxonomy of superfamily Bombycoidea (Lepidoptera) from North-West India supplemented with molecular studies.
2. 2019. **RISHI KUMAR**. Taxonomic studies on family Notodontidae (Lepidoptera: Noctuoidea) from Indian Himalayas.
3. 2019. **GAGANPREET KOUR BALI**. Taxonomy of family Lymantriidae (Lepidoptera: Noctuoidea) from North-West India supplemented with molecular studies
4. 2021. **NAVKIRAN KAUR**. Taxonomic significance of internal genitalic features in family Lymantriidae (Lepidoptera) from North-West India supplemented with molecular studies.
5. 2022. **SANDEEP KAUR THIND**. Diversity of avian fauna of District Ludhiana (Punjab) along with observations on ecology and breeding of some species.
6. 2022. **HARNEET KAUR**. Characterization of heavy metals and organic pollutants of sewage water and their bioremediation by using algal isolates.

**13. No. of students registered for Ph.D: FIVE**

1. **SAMI-UL-HASSAN TANTRAY**. Taxonomic studies on superfamily Pyraloidea (Lepidoptera) from Jammu and Kashmir.
2. **YACHANA KAPOOR**. Morphological studies on immature stages of selected ditrysiian species (Ditrysia: Lepidoptera) from Himachal Pradesh (India).
3. **HARSIMRAT KAUR DULAI**. Ultrastructure of sensilla on antennae and mouthparts of Larvae in some species of Ditrysiian moths (Lepidoptera).
4. **SAINIKA JALLUNDHARA**. Ultrastructural studies on egg chorion of selected ditrysiian moth species (Ditrysia: Lepidoptera)
5. **AASTHA**. Mitochondrial DNA sequencing of Bombycoidean moths (Bombycoidea: Lepidoptera).

#### **14. Workshops/Courses Attended:**

1. **2000.** Training Workshop on **Training of Science Communicators for enhancing Science coverage in Mass Media** organized by Punjab State Council for Science & Technology at held at Punjabi University, Patiala on 23<sup>rd</sup> February, **2000**.
2. **2013.** 15<sup>th</sup> **Orientation Course** held at Academic Staff College, Punjabi University, Patiala from 11<sup>th</sup> February to 9<sup>th</sup> March, **2013**.
3. **2014.** Workshop on **Capacity Building Programme on Leadership Skill in Education** organized by PC Training Institute Ltd at Maharaja Aggarsain Public School, Fatehabad on 17<sup>th</sup> May, 2014.
4. **2015.** Workshop on **Insect Taxonomy** organized by Association of Entomologists held at Punjabi University, Patiala from 9<sup>th</sup> March, 2015.
5. **2016.** 3<sup>rd</sup> **Summer School** held at UGC Human Resource Development Centre, Punjabi University, Patiala from 20<sup>th</sup> June to 9<sup>th</sup> July, 2016.
6. **2016.** **Seminar on SMART STEM** held at Eqbal Inn on 21<sup>st</sup> September, 2016
7. **2017.** One Day Workshop on “**New Age Teaching: Teachers need to unlearn**” organized by Internal Quality Assurance Cell, Punjabi University, Patiala on 22<sup>nd</sup> February, 2017.
8. **2017.** Workshop on “**International Day for Biological Diversity-2017**”, on 12<sup>th</sup> June, 2017 organized by Department of Zoology & Environmental Sciences, Punjabi University, Patiala.
9. **2017.** **National Workshop on Order Lepidoptera** organized by Association of Entomologists at Department of Zoology & Environmental Sciences, Punjabi University, Patiala on 20<sup>th</sup>-22<sup>nd</sup> September, 2017.
10. **2018.** Workshop on “**International Day for Biological Diversity-2018**”, on 29<sup>th</sup> May, 2018 organized by Department of Zoology & Environmental Sciences, Punjabi University, Patiala.
11. **2018.** Workshop on “**Beat Plastic Pollution**” & Environment Awareness Rally on occasion of World Environment Day, on 7<sup>th</sup> June, 2018 organized by Department of Zoology & Environmental Sciences, Punjabi University, Patiala.
12. **2019.** 7<sup>th</sup> National Conference on **Teaching, Learning and Leadership** organized by Brainfeed group at Crown Plaza, Rohini, New Delhi on 6<sup>th</sup> February, 2019.
13. **2019.** One Day Workshop on “**Awareness and Capacity Building about Climate Change on Biodiversity in Punjab**” organized by Department of Zoology & Environmental Sciences, Punjabi University, Patiala in collaboration with PSCST on 15<sup>th</sup> April, 2019.

14. **2019.** NR School Summit. Visioning Future Ready Schools, CII Chandigarh. 19<sup>th</sup> December, 2019.
15. **2019.** Workshop on field taxonomy skills for Lepidoptera Conservation during 6<sup>th</sup> Asian Lepidoptera Conservation Symposium on “Mainstreaming Lepidoptera conservation in Asia” organized by Zoological Survey of India in collaboration with Association of Entomologists at Dalma Wildlife Sanctuary, Jamshedpur, Jharkhand from 17<sup>th</sup>-19<sup>th</sup> September, 2019.
16. **2019.** My Heritage Patiala Event organized by Patiala Foundation at Samana on 22<sup>th</sup> September, 2019.
17. **2019. Workshop on Energy Efficiency & Energy Conservation** organized by Punjab Energy Development Agency (PEDA) and Design2Occupancy Services LLP, Jaipur during Energy Conservation week (16<sup>th</sup>-20<sup>th</sup> December, 2019).
18. **2020.** 87<sup>th</sup> **Refresher Course in Life Sciences** held at UGC Human Resource Development Centre, Punjabi University, Patiala from 1<sup>st</sup> to 14<sup>th</sup> December, 2020.
19. **2020. Seven Days Workshop** on Usage of Punjabi Computers from 4<sup>th</sup> to 10<sup>th</sup> January, 2020 organized by Punjabi Computer Help Centre, Punjabi University, Patiala.
20. **2022. Workshop on Mobile Journalism & Social Media for Communicating Green Initiatives** organized by Punjab State Council for Science & Technology and Centre for Media Studies at Mahatma Gandhi Institute of Public Administration, Chandigarh from 24-25<sup>th</sup> March, 2022.
21. **2022.** Two-Days Faculty Development Program on “**Carbon Capture and Sequestration**” organized by Department of Applied Sciences, CUIET, Chitkara University from 23-24<sup>th</sup> May, 2022.
22. **2022.** UGC sponsored Short term Course on **MOOCs Online Courses and Open Educational Resources** organized by UGC Human Resource Development Centre, Punjabi University, Patiala from 13<sup>th</sup> to 22<sup>nd</sup> December, 2022.

#### **15. Invited Talks:**

1. **2015.** Delivered an invited talk during Live Programme **Navi Disha at All India Radio**, Jalandhar on 9<sup>th</sup> April, 2015.
2. **2015.** Delivered an invited talk during Motivational contact programme for talented school students organized by Punjab State Council for Science & Technology, Chandigarh and Association of Entomologists, Patiala from 13<sup>th</sup> -17<sup>th</sup> April, 2015.
3. **2015.** Delivered an invited talk during Motivational contact programme for talented school students organized by Punjab State Council for Science & Technology, Chandigarh and Association of Entomologists, Patiala from 5<sup>th</sup> -9<sup>th</sup> October, 2015.

4. **2016.** As Resource Person in Second DST SERB School in Insect Biology organized by DST, New Delhi at Punjabi University, from 1<sup>st</sup> -15<sup>th</sup> October, 2016.
5. **2017.** Delivered an invited talk for **Gyan Vigyan: Ozone Parat Di Sanbhal at All India Radio**, Jalandhar on 14<sup>th</sup> September, 2017.
6. **2017.** As Resource Person in NSS Swach Bharat Abhiyan. 6<sup>th</sup> September, 2017.
7. **2017.** Delivered an invited talk for **Navi Disha Programme: Pollution from Petroleum products and Solid waste management at All India Radio**, Jalandhar on 17<sup>th</sup> September, 2017.
8. **2018.** As Resource Person in NSS Tree Plantation Drive. 7<sup>th</sup> August, 2018.
9. **2019.** As Resource Person in Seven Days NSS Camp from 20<sup>th</sup>-26<sup>th</sup> March, 2019.
10. **2019.** As Resource Person in Seven Days NSS Camp from 23<sup>rd</sup>-29<sup>th</sup> December, 2019.
11. **2021.** Delivered an invited talk in a special program on International Ozone Day and Career in Environmental Sciences **at All India Radio**, Patiala on 16<sup>th</sup> September, 2021.
12. **2022.** Delivered an invited talk in a special program on International Environment Day **at All India Radio**, Patiala on 1<sup>st</sup> June, 2022.

## **16. List of Publications:**

### **i. Research Papers:**

Published **One hundred six research papers** in different Journals of National and International repute.

1. **1992.** Three new combinations under genus *Palpita* Hübner (Pyraustiinae: Pyralidae: Lepidoptera). **Geobios New Reports, 11 (2):** 113-117.
2. **1993.** Further studies on the Indian species of genus *Glyphodes* Guenee (Pyraustiinae: Pyralidae: Lepidoptera). **National meeting of Y. Scientists & R. fellows on impact of Sciences on Human Welfare.** 1993: 195-200.
3. **1994.** Taxonomical studies on three species of Arctiinae (Arctiidae: Lepidoptera) from India. **Geobios New Reports, 13 (1):** 19-24.
4. **1994.** Genitalic studies on four Indian species of genus *Spilarctia* Butler (Arctiidae: Lepidoptera). **Uttar Pradesh J. Zoology, 14 (1):** 87-88.
5. **1995.** Taxonomical studies on two Indian species of genus *Pericallia* Hübner (Arctiidae: Lepidoptera). **Hexapoda, 7 (1):** 45-49.
6. **1996.** Genitalic studies of genus *Cyana* Walker (Arctiidae: Lepidoptera). **Advance in Biosciences, 15 (1):** 33-40.
7. **1996.** Role of genitalia in the taxonomy of family Arctiidae. **Advance in Biosciences, 15 (2):** 227-238.

8. **1996.** Revalidation of genus *Satanastra* Meyrick along with the revised diagnosis of Genus *Pycnarmon* Lederer (Pyraustinae: Pyralidae: Lepidoptera). **Hexapoda**, **8 (2)**: 89-99.
9. **1996.** Taxonomic studies on Indian Species of Genus *Eurrhyparades* Snellen (Pyraustinae: Pyralidae: Lepidoptera). **Bulletin of Association of Zoologists**, **7 (1)**: 30-34.
10. **1997.** Revalidation and recharacterization of genus *Arctata* Roepke (Arctiinae: Arctiidae: Lepidoptera.) **Hexapoda**, **9 (1)**: 1-7.
11. **1998.** Arctiin diversity from a single locality of village Jatinga (North Cachar Hills: Assam). **Himalayan Journal of Environmental Sciences & Zoology**, **12 (2)**: 143-148.
12. **1998.** Revalidation and recharacterization of genus *Trypheromera* Butler (Arctiinae: Arctiidae: Lepidoptera). **Journal of Entomological Research**, **22 (4)**: 303- 305.
13. **1998.** Taxonomic studies of Indian species of genus *Callimorpha* Latrielle (Arctiinae: Arctiidae: Lepidoptera). **Bioved**, **9 (1, 2)**: 93-98.
14. **1999.** Studies on the male genitalia of two species of genus *Amerila* Walker (Arctiinae: Arctiidae: Lepidoptera). **Geobios New Reports**, **18 (1)**: 5-8.
15. **1999.** Two new species of genus *Cladarctia* Koda (Arctiinae: Arctiidae: Lepidoptera) from India. **Zoo's print journal**, **14 (8)**: 77-81.
16. **1999.** Reporting of a new species under genus *Cretonotos* Hübner (Arctiinae: Arctiidae: Lepidoptera) from India. **Entomon**, **24(2)**: 135-142.
17. **2000.** Taxonomic studies on two Indian Species of Genus *Chrysorabdia* Butler (Lithosiinae: Arctiidae: Lepidoptera). **Zoo's Print Journal**, **15(10)**: 331-334.
18. **2000.** First report of *Thanatarctia infernails* Butler from India. **Insect & Environment**. **6 (2)**: 61.
19. **2000.** Further studies on three Indian species of genus *Aloa* Walker (Arctiinae: Arctiidae: Lepidoptera). **Advances in Biosciences**, **19 (1)**: 47-54.
20. **2000.** Three new species of genus *Thanatarctia* Butler (Arctiinae: Arctiidae: Lepidoptera) from India. **Polish Journal of Entomology**, **69**: 319-327.
21. **2000.** Genitalic studies on two Indian species of genus *Agrisius* Walker (Lithosiinae: Arctiidae: Lepidoptera). **Hexapoda**, **11(1&2)**: 85-89.
22. **2001.** A new genus *Mangina* along with taxonomy of *Argina* Hübner (Arctiinae: Arctiidae: Lepidoptera). **Journal Bombay Natural History Society**, **98(2)**: 250-253.

23. **2001.** A new species of moth under genus *Lemyra* (Arctiinae: Arctiidae: Lepidoptera) from India. **Journal Bombay Natural History Society, 98(3):** 422-424.
24. **2001.** Froth from cervical glands in *Amerila astreus* Drury (Arctiidae: Lepidoptera). **Insect & Environment, 7(3):** 107.
25. **2001.** Tiger moth diversity (Arctiidae: Lepidoptera) from Shivaliks in Punjab. **Insect & Environment, 7(3):** 122.
26. **2002.** A new genus and two new species of Arctiinae, Arctiidae: Lepidoptera, from India. **Journal Bombay Natural History Society, 99(1):** 79-85.
27. **2002.** Distributional record and genitalic studies of *Cyana detrita* Walker (Lithosiinae: Arctiidae: Lepidoptera) from N. W. India. **Geobios, 29(2-3):** 175-176.
28. **2002.** Inventory along with distribution of a lithosiin genus *Miltochrista Hübner* (Lithosiinae: Arctiidae: Lepidoptera) from Northwest and Northeast India. **Zoo's Print Journal, 17(8):** 853-856.
29. **2002.** Revalidation of genus *Chionaema* Herrich Schaffer (Lithosiinae: Arctiidae: Lepidoptera) along with genitalic studies on six species from North and Northeast. **Zoo's Print Journal, 17(10):** 891-898.
30. **2002.** Further studies on two Indian species of genus *Sidyra* Walker (Lithosiinae: Arctiidae: Lepidoptera). **Entomon, 27(3):** 327-331.
31. **2003.** Genitalic studies on four Indian species of genus *Chionaema* Herr. Schaffer (Lithosiinae: Arctiidae: Lepidoptera) along with their distribution. **Geobios, 30(1):** 29-32.
32. **2003.** Revival of genus *Barsine* Walker (Lithosiinae: Arctiidae: Lepidoptera) along with description of two new species from India. **Journal Entomological Research, 27(2):** 93-103.
33. **2003.** Report of a new species of the genus *Chionaema* Herr-Schaffer (Lithosiinae: Arctiidae: Lepidoptera) from India. **Entomon, 28(4):** 379-383.
34. **2004.** Male genitalic studies of *Castabala roseata* Walker (Lithosiinae: Arctiidae: Lepidoptera) from India. **Geobios, 31(2-3):** 189-190.
35. **2005.** A new combination under genus *Thanatarctia* for a moth species (Lepidoptera: Arctiidae). **Bionotes, 7(3):** 93-94.
36. **2005.** Three new species of genus *Cladarctia* Koda (Arctiinae: Arctiidae: Lepidoptera) from India. **Journal Bombay Natural History Society, 102(1):** 69-74.
37. **2005.** The *multiguttata* complex of the genus *Spilarctia* Butler (Arctiinae: Arctiidae: Lepidoptera) from India. **Entomon, 30(3):** 207-220.



38. **2006.** *Nyctemera varians*, a morpho-variant species from N. E. India (Lepidoptera: Arctiidae) from India. **Bionotes**, **8(1)**: 17-18.
39. **2006.** Arctiid diversity (Arctiidae: Lepidoptera) in Sikkim, India. **Flora and Fauna**, **12(1)**: 3-8.
40. **2007.** Taxonomic studies on genus *Spilarctia* Butler (Arctiinae: Arctiidae: Lepidoptera) from India. **Zoo's Print Journal**, **22(9)**: 2824-2828.
41. **2010.** Lymantriid Moths diversity in Punjab (Lepidoptera: Lymantriidae). **Bionotes**, **12(3)**: 81-83.
42. **2011.** Male genitalia of the moth *Thanatarctia flavens* (Arctiidae: Lepidoptera) from India. **Bionotes**, **13(3)**: 126.
43. **2011.** Studies on external genitalia of Indian species of genus *Acherontia* Laspeyres (Sphinginae: Sphingidae: Lepidoptera). **Annals of Entomology**, **29(1)**: 3-8.
44. **2012.** Studies on the external genitalia of four species of genus *Psilogramma* Rothschild and Jordan (Sphingidae: Lepidoptera) from India. **Journal Entomological Research**, **36(1)**: 95-100.
45. **2012.** Diversity of Tussock Moths (Lepidoptera: Noctuoidea: Lymantriidae) of the Western Himalayas. **Colemania**, **31**: 3-13.
46. **2012.** Reporting of two new species of genus *Thanatarctia* (Arctiinae: Arctiidae: Lepidoptera) from India. **Entomon**, **37(1-4)**: 51-57.
47. **2014.** Genitalic studies of *Alphaea impleta* (Walker) (Lepidoptera: Arctiidae) from India. **Bionotes**, **16(2)**: 63-64.
48. **2014.** Present Status of Arctiidae (Lepidoptera) From Dehradun District Of Uttarakhand. **Prommalia**, **2**: 149-156.
49. **2015.** Tiger Moth Diversity (Arctiidae: Lepidoptera) from Jammu & Kashmir. **Bionotes**, **17(1)**: 11-14.
50. **2015.** Genitalic studies of two species of Genus *Daphnis* Hübner (Sphingidae: Lepidoptera) from India. **Journal of Chemical, Biological & Physical Sciences**, **5(2)**: 1531-1537.
51. **2015.** Studies on the genus *Leucophlebia* Westwood (Sphingidae: Lepidoptera) from India. **Journal of Entomological Research**, **39(2)**: 175-180.
52. **2015.** Genitalic studies of Genus *Hemaris fuciformis* Linnaeus (Sphingidae: Lepidoptera) from India. **Journal of Biosciences**, **4(7)**: 2786-2789.
53. **2016.** Addition of two species of genus *Cladarctia* Koda to subfamily Arctiinae (Arctiidae: Lepidoptera). **Journal of Biosciences**, **5(4)**: 3878-3883.
54. **2017.** Genitalic studies of *Callambulyx rubricosa* Walker (Sphingidae: Lepidoptera). **Journal of Global Biosciences**, **6(3)**: 4831-4834. ISSN 2320-1355.

55. **2017.** Studies on the Genus *Clanis* Hübner (Sphingidae: Lepidoptera) from India. **Journal of Entomological Research**, **41(2)**: 215-219. DOI: <http://dx.doi.org/10.5958/0974-4576.2017.00034.2>. ISSN 0378-9519.
56. **2017.** Male Genitalic studies of *Anambulyx elwesi* (Druce) from India (Sphingidae: Lepidoptera). **Bionotes**, **19(2)**: 54-55. ISSN 0972-1800.
57. **2017.** Studies on the Genus *Ambulyx* Westwood (Sphingidae: Lepidoptera) from India. **Entomon**, **42(2)**: 115-120. ISSN 0377-9335.
58. **2017.** Genitalic studies of a Moth, *Megacorma obliqua* (Lepidoptera Sphingidae). **Bionotes**, **19(4)**: 145-147. ISSN 0972-1800.
59. **2017.** Taxonomic status of Genus *Brahmaea* Walker (Lepidoptera: Bombycoidea: Brahmaeidae) from India. **Journal of Entomology**, **14(5)**: 234-240. DOI: <https://dx.doi.org/10.3923/je.2017.234.240>. ISSN 1812-5689, e-ISSN 1812-5670.
60. **2017.** Taxonomic characterization of four species of Genus *Neoscona* Simon (Araneae: Araneidae) from Patiala, Punjab. **Journal Punjab Academy of Sciences**, **16-17 (1&2)**: 5-9. ISSN 2229-7012.
61. **2017.** Further studies on two species of genus *Acmeshachia* Matsumura (Notodontidae: Lepidoptera) from India. **Journal Punjab Academy of Sciences**, **16-17 (1&2)**: 64-67. ISSN 2229-7012.
62. **2018.** Further studies on the moth, *Cricula trifenestrata* from North-West India (Lepidoptera: Saturniidae). **Bionotes**, **20(1)**: 15-17. ISSN 0972-1800.
63. **2018.** Taxonomic status of *Imaus mundus* (Walker) (Lymantriidae: Lepidoptera) from India. **Journal of Global Biosciences**, **7(4)**: 5419-5422. ISSN 2320-1355.
64. **2018.** Taxonomic status of *Himala argentea* (Walker) (Lymantriidae: Lepidoptera) from India. **Annals of Entomology**, **36(01)**: 27-30. ISSN 0970-3721.
65. **2018.** Studies on Genus *Hippotion* Hübner (Sphingidae: Lepidoptera) from India **Journal Entomological Research**, **42(1)**: 129-134. ISSN 0378-9519. DOI: <http://dx.doi.org/10.5958/0974-4576.2018.00022.1>
66. **2018.** Further studies on genus *Barsine* Walker (Arctiidae: Lepidoptera) along with addition of two species from India. **Journal of Entomological Research**, **42(4)**: 595-600. DOI: <http://dx.doi.org/10.5958/0974-4576.2018.00101.9> , ISSN 0378-9519.
67. **2018.** Taxonomic studies on genus *Kunugia* Nagano (Lepidoptera: Bombycoidea: Lasiocampidae) from North-West India. **Annals of Entomology**, **36(02)**: 103-111. ISSN 0970-3721.

68. **2018.** Further Studies on three species of genus *Euthrix* Meigen (Lepidoptera: Bombycoidea: Lasiocampidae) from North-West India. **Journal of Environment and Biosciences**, 32(2): 279-283. ISSN 0973-6913 (Print), ISSN 0976-3384 (On Line).
69. **2019.** Role of phycoremediation to remove heavy metals from sewage water: Review Article. **Journal of Environmental Science and Technology**, 12(1): 1-9. ISSN 1994-7887. DOI: <http://dx.doi.org/10.3923/jest.2019.1.9>
70. **2019.** Further studies on three species of genus *Trabala* Walker (Lasiocampidae: Bombycoidea: Lepidoptera) from North-West India. **Annals of Entomology**. 37(1): 19-27. ISSN 0970-3721.
71. **2019.** Studies on internal male and female genitalic features of *Pida decolorata* (Walker) (Lymantriidae: Lepidoptera) from India. **Annals of Entomology**, 37(1): 61-65. ISSN 0970-3721.
72. **2019.** Antennal sensilla types and distribution in two species of genus *Cretonotos* Hübner (Arctiidae: Lepidoptera). **Journal of Entomology**, 16: 47-54. ISSN 1812-5689, e-ISSN 1812-5670. DOI: <https://dx.doi.org/10.3923/je.2019.47.54>
73. **2019.** Further studies on two species of genus *Paralebeda* Aurivillius (Lepidoptera: Bombycoidea: Lasiocampidae) from North-West India. **Journal of Threatened Taxa**, 11(12): 14593-14598. DOI: <http://dx.doi.org/10.11609/jott.4621.11.12.14593-14598>. ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print).
74. **2019.** Studies on internal genitalic features of two species of genus *Laelia* Stephens (Lymantriidae: Lepidoptera) from India. **Journal Entomological Research**, 43(3): 387-390. ISSN 0378-9519, e-ISSN 0974-4576. DOI: <http://dx.doi.org/10.5958/0974-4576.2019.00068.9>
75. **2020.** Present status of Genus *Sphrageidus* Maes (Lepidoptera: Noctuoidea: Lymantriidae) from India. **Journal of Threatened Taxa**, 12(9): 16153-16160. DOI: <http://dx.doi.org/10.11609/jott.5302.12.9.16153-16160>. ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print).
76. **2020.** Taxonomy of two species of genus *Mustilizans* Yang (Lepidoptera: Bombycoidea: Bombycidae) from the North-West of India. **Journal Bombay Natural History Society**. 117: 9-13. Online (2019), 116: DOI: <http://dx.doi.org/10.17087/jbnhs/2020/v117/137317>. ISSN 0006-6982.
77. **2020.** Scanning electron-microscopic studies on antennae of *Spilarctia comma* (Walker) (Arctiidae: Lepidoptera). **Journal Entomological Research**, 44(2): 311-

314. DOI: <http://dx.doi.org/10.5958/0974-4576.2020.00053.5>. ISSN 0378-9519, e-ISSN 0974-4576.
78. **2020**. Further studies on genus *Cyphanta* Walker (Platychnastinae: Notodontidae: Lepidoptera) from India. **Uttar Pradesh Journal of Zoology**, 41(7): 13-17. ISSN: 0256-971X (P).
79. **2020**. Studies on genus *Acosmeryx* Boisduval (Sphingidae: Lepidoptera) from India. **Journal Entomological Research**, 44(3): 433-438. ISSN 0378-9519, e-ISSN 0974-4576. DOI: <http://dx.doi.org/10.5958/0974-4576.2020.00073.0>
80. **2020**. Observations on breeding behaviour of a pair of endangered Egyptian Vultures *Neophron percnopterus* (Linnaeus, 1758) over three breeding seasons in the plains of Punjab, India. **Journal of Threatened Taxa**, 12(9): 16013–16020. DOI: <http://dx.doi.org/10.11609/jott.4539.12.9.16013-16020>.
81. **2020**. Breeding Behaviour of Red-Wattled Lapwing, *Vanellus Indicus* (Boddaert, 1783) in Agricultural Landscape of Punjab. **Uttar Pradesh Journal of Zoology**, 41(8), 27-51. ISSN: 0256-971X (P).
82. **2020**. Taxonomic account of four species of genus *Ilema* Moore, 1860 (Lepidoptera: Erebiidae: Lymantriinae) with range extensions and new records from Indian Himalayas. **International Journal of Entomology Research**, 5(6): 174-179. ISSN: 2455-4758.
83. **2020**. Taxonomic studies of *Rachia striata* Hampson (Periergosinae: Notodontidae: Lepidoptera) from India. **Annals of Entomology**, 38 (01-02): 27-31. ISSN 0970-3721. DOI: <https://connectjournals.com/0146.2020.38.27>.
84. **2020**. Notes on breeding behaviour of Purple Sunbird, *Cinnyris asiaticus* (Latham, 1790) in semi urban area of Punjab. **Records of the Zoological Survey of India**, 120(4): 323-340. DOI: <http://dx.doi.org/10.26515/rzsi/v120/i4/2020/152044>. ISSN Online: 2581-8686, Print: 0375-1511, Online: 2581-8686.
85. **2020**. A new combination of a tussock moth species under Genus *Himala* Moore (Lepidoptera: Erebiidae: Lymantriinae) and its range extension. **Records of the Zoological Survey of India**, 120(4): 357-362. ISSN Online: 2581-8686, Print: 0375-1511, Online: 2581-8686. DOI: <http://dx.doi.org/10.26515/rzsi/v120/i4/2020/152553>.
86. **2020**. Revisionary notes on family Eupterotidae (Lepidoptera: Bombycoidea) with remarks on genus *Eupterote* Hübner and *Apona* Walker from India. **Advance in Biological Research**, 1(1): 34-39. DOI: <http://dx.doi.org/10.26855/abr.2020006>. ISSN 2635-0319.

87. **2021.** Some notes on breeding behaviour of Brown-backed Indian Robin *Copsychus fulicatus cambaiensis* (Latham, 1790) in agricultural landscape of Punjab. **Ecology, Environment and Conservation**, 27 (February Suppl.): S330-S349. EM International. ISSN 0971-765X.
88. **2021.** Notes on the Waterbirds of a village pond in Ludhiana District, Punjab, India. **Journal of Bombay Natural History Society**, 118(1): 83-86. DOI: <http://dx.doi.org/10.17087/jbnhs/2021/v118/138061>.
89. **2021.** Taxonomic studies on nine species of Genus *Calliteara* Butler (Lepidoptera: Erebidae: Lymantriinae) with two new records from India. **Journal of Bombay Natural History Society**, 118(2): 105–124. ISSN 0006-6982. DOI: <http://dx.doi.org/10.17087/jbnhs/2021/v118/154304>.
90. **2021.** Further studies on genus *Artaxa* Walker (Lepidoptera: Erebidae: Lymantriinae) from India. **Oriental Insects**, 56(2): 198-212. Published on 16<sup>th</sup> June, 2021. DOI: <https://doi.org/10.1080/00305316.2021.1939807>.
91. **2021.** Impact of growth Conditions on Indigenous Algal Biomass Production. **Journal of Environmental Science and Technology**, 14(1): 35-41. DOI: <http://dx.doi.org/10.3923/jest.2021.35.41>
92. **2021.** Pesticide Usage Pattern in Agricultural Areas of District Patiala in Punjab, India. **Journal Environment & Biosciences**, 35(2): 139-144. DocID: <https://connectjournals.com/03843.2021.35.139>
93. **2021.** Cooperative breeding behaviour of Jungle Babbler, *Turdoides striata* (Dumont, 1823) in agroecosystem of Punjab. *NeBio*, 12(2):
94. **2022.** Studies on two species of genus *Rhagastis* Rothschild & Jordan (Sphingidae: Lepidoptera) from India. **Annals of Entomology**, 40(1): 1-5. ISSN: 970-3721. DocID: <https://connectjournals.com/01462.2022.40.1>
95. **2022.** Review of genus *Spoladea* Guenée (Lepidoptera: Crambidae) from Indian Himalayas. **International Journal of Entomology Research**, 7(8): 140-144.
96. **2022.** Avian diversity in agricultural mosacis in district Ludhiana, Punjab, India. **Agricultural Science Digest- A Research Journal of Agriculture, Animal and Veterinary Sciences**, :1-10 DOI: <https://doi.org/10.18805/ag.d-5611>
97. **2022.** A new species of genus *Neocerura* Matsumura, 1929 (Notodontidae: Lepidoptera) from India. **Journal of Threatened Taxa**, 14(11): 22184-22189. ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print). <https://doi.org/10.11609/jott.7481.14.11.22184-22189>

98. **2022.** Breeding Behaviour of Black-Winged Stilt, *Himantopus himantopus* (Linnaeus, 1758) in Agricultural Landscape of Punjab, India. **International Journal of Zoological Investigations**, 8(2): 695-709. ISSN: 2454-3055.  
<https://doi.org/10.33745/ijzi.2022.v08i02.085>
99. **2022.** Application of chemometric modeling for identification of pollution sources from drains of Ghaggar River, Punjab, India. **Sadhana** 47: 251, 1-14. Indian Academy of Sciences. <https://doi.org/10.1007/s12046-022-02018-7>
100. **2022.** Taxonomic studies of *Kamalia harutai* Sugi (Dicranurini: Notodontidae: Lepidoptera) from India. **International Journal of Entomology Research**, 7(12): 112-114.
101. **2023.** Ultrastructure on antennae and mouthparts in larvae of soybean hairy caterpillar, *Spilarctia casigneta* Kollar (Lepidoptera: Arctiidae). **Journal of Entomology and Zoology Studies**, 11(1): 160-168.  
<https://doi.org/10.22271/j.ent.2023.v11.i1c.9148>
102. **2023.** Report of a tussock moth genus *Maeoproctis* (Lepidoptera: Erebidiae: Lymantriinae: Nygmiini) from India. **Journal of Threatened Taxa**, 15(2): 22654–22660. DOI: <https://doi.org/10.11609/jott.8310.15.2.22654-22660>
103. **2023.** Species richness and diversity of avian fauna at village ponds in district Ludhiana of Punjab, India. **Species**, 24: e50s1546, 1-7.  
DOI: <https://doi.org/10.54905/diss/v24i73/e50s1546>
104. **2023.** Ultrastructure of Egg Chorion and Its Sculpture in Two Arctiids (Erebidae: Arctiinae). **Indian Journal of Entomology**,  
<http://dx.doi.org/10.55446/IJE.2023.1255>
105. **2023.** Scanning Electron Microscope Studies on Ornamentation of Egg Chorion of *Capissa vagesa* (Moore, 1859) (Erebidae) and *Trabala vishnou* (Lefèbvre, 1827) (Lasiocampidae) (Ditrysia: Lepidoptera) from India. **Journal of the Entomological Research Society**, 25(2), 337–349.
106. **2023.** A comparative account of external sculpture of the eggs of two tiger-moths (Erebidae: Arctiinae: Lepidoptera) from India. **Journal of Advanced Zoology**, 44(2): 79-87. DOI: <https://doi.org/10.17762/jaz.v44i2.79>

**Communicated:**

107. **2022.** Taxonomic status of Genus *Numenes* Walker 1855 (Lepidoptera: Erebidiae: Lymantriinae) with emphasis on morpho-variants in *Numenes patrana* Moore
108. **2022.** Species composition and diversity analysis of avian fauna in terrestrial habitats of district Ludhiana, Punjab, India. **Zoos Print**

109. **2022.** Taxonomic status of genus *Gazalina* Walker along with description of species from India. **Journal of Threatened Taxa**

**ii. Chapters in Books:**

1. **2019.** Larval Development and Moulting in Edible Insects, published by IntechOpen Limited, London. DOI: <http://dx.doi.org/10.5772/intechopen.85530>. ISBN: 978-1-78985-636-1, Print ISBN: 978-1-78985-635-4, eBook (PDF) ISBN: 978-1-83968-451-7.
2. **2020.** Dioxins and Dioxin-like Compounds (DLCs) in Pollutants and Protectants published by I.K. International Publishing House, New Delhi. ISBN: 9789386768766.
3. **2020.** Community Conservation in Endangered Plants published by IntechOpen Limited, London. ISBN: 978-1-83962-894-8; Print ISBN: 978-1-83962-893-1. DOI: <http://dx.doi.org/10.5772/intechopen.94557>
4. **2021.** Potential Reasons for Insect Decline in Global Decline of Insects published by IntechOpen Limited, London. ISBN: 978-1-83969-588-9; Print ISBN: 978-1-83969-587-2; E-Book: ISBN978-1-83969-589-6. DOI: <http://dx.doi.org/10.5772/intechopen.100065>
5. **2021.** Diversity, Importance and Decline of Pollinating Insects in Present Era published by Intechopen Limited, London. ISBN: 978-1-83969-588-9; Print ISBN: 978-1-83969-587-2; E-Book: ISBN: 978-1-83969-589-6.  
DOI: <http://dx.doi.org/10.5772/intechopen.100316>

**iii. Articles:**

Published **Forty Two** in Leading Newspapers/ Magazines/journals/books:

1. **1998.** *Your home and Pollution.* The Tribune. November 19: 12.
2. **2000.** *Excessive use of Chemical Fertilizers- Harmful* (in Punjabi). Punjabi Tribune. February 9: 5.
3. **2000.** *Pesticides: Boon or Bane.* (in Punjabi). Punjabi Tribune. April 19: 5.
4. **2000.** *Parthenium and its fatal effects.* (in Punjabi). Punjabi Tribune. October 4: 12.
5. **2000.** *Why Disrespect towards traditional Trees.* (in Punjabi). Desh Sewak. October 5: 4.
6. **2000.** *Deer Park Bir Talab: Shelter for Blue bucks.* (in Punjabi). Punjabi Tribune. October 13: 5.
7. **2001.** *Supporting melas for Agricultural awareness.* (in Punjabi). Punjabi Tribune. January 10:
8. **2001.** *Need to care Deer Park Bir Moti Bagh.* (in Punjabi). Punjabi Tribune. February 2: 5.
9. **2001.** *Amaltas: Providing soothing effect to eyes in hot noons of May & June.* (in Punjabi). Punjabi Tribune. July 3: 5.

10. **2001.** *Bhima Kali Mandir: A best example of antique hilly art culture.* (in Punjabi). Punjabi Tribune. August 24: 5.
11. **2001.** *World Trade Organization- What's this concept?* (in Punjabi). Punjabi Tribune. Magazine. August 31: 6.
12. **2002.** *Nowhere had gone our dear Vultures?* (in Punjabi). Punjabi Tribune. September 15: 5.
13. **2003.** *Agriculture.* (In Punjabi). Petals1: 29-30.
14. **2003.** *Chemosterility: A chemico-biological approach for Insect control.* Everyman's Science 37(4): 220-223.
15. **2006.** *Integrated control of Harmful Insects.* (in Punjabi). Vigyan De Naksh **43**: 108-112.
16. **2010.** *Development of educated society: Need of the hour.* (in Punjabi). Jag Bani. January 1: 2.
17. **2011.** *In which direction our Punjab is going?* (in Punjabi). Jag Bani. January 1: 2.
18. **2011.** *Modern man and environment.* (in Punjabi), in 'Danger of environmental pollution for man's existence': 28-30.
19. **2011.** *Excessive use of chemical fertilizers.* (in Punjabi), in 'Danger of environmental pollution for man's existence': 129-130.
20. **2012.** *Alternatives to Conventional Energy Resources, Living on the Edge,* 2(1): 45-49.
21. **2012.** *Biodiversity of India.* (in Punjabi), in 'Biodiversity & Environment: 40-60.
22. **2016.** *Climate change-* a report in Nirantar Soach 19(1): 14-16.
23. **2016.** *Insect of Punjab* in Nirantar Soach 19(5): 7-8. .
24. **2016.** *Biodiversity of India* in Nirantar Soach 19(5): 14-20.
25. **2017.** *Wetlands of Punjab* in Nirantar Soach 20(3): 11-15.
26. **2017.** *Ozone layer and its importance* in Nirantar Soach 20(5): 18-21.
27. **2018.** *Recent Trends in Veterinary Diagnostics- A Boon to Reticent diseased Animals.* Approaches in Poultry, Dairy & Veterinary Sciences. 2(4):1-2. APDV.000541. 2018.
28. **2018.** *AIDS- a disaster* in Nirantar Soach 21(2): 8-10.
29. **2018.** *Wetland conservation and urbanization* in Nirantar Soach 21(2): 25-27.
30. **2018.** *Earth Day* in Nirantar Soch, 21(4): 6-8.
31. **2018.** *World Environment Day* in Nirantar Soch, 21(6): 18-21.
32. **2018.** *Nipah Virus* in Nirantar Soch, 21(7): 11-13.
33. **2018.** *Moulting: Time to Dress Up Gracefully.* Everyman's Science LII(5): 294-296.
34. **2018.** *Earth Day* in Nirantar Soch, 21(4): 6-8.
35. **2018.** *Nipah Virus* in Nirantar Soch, 21(7): 11-13.
36. **2019.** *Brain fever: symptoms and control* in Punjabi Tribune, 5<sup>th</sup> July.
37. **2019.** *Encephalitis: Symptoms and control* in Nirantar Soch, 22(7): 24-26.



38. **2019.** *Is Glyphosate harmful to us* in Nirantar Soch, 22(8&9): 11-13.
39. **2020.** *Corona virus- how harmful it is* in Nirantar Soch, 24(3): 4-6.
40. **2020.** *Impact of Corona Virus on our Education System* in Azad Soach, 18<sup>th</sup> July.
41. **2020.** Scent glands in Lepidoptera: Coremata in *Insect Environment*, 23(4): 96-101.
42. **2021.** Eco-physiology of mud puddling in insects in *Insect Environment* 24(2): 319-326.

## **17. Participated and delivered Talks in national & international Symposia/ Conferences**

Attended **Sixty** Symposia/Conferences of State, National & International repute:

1. **1995.** X<sup>th</sup> **Annual Congress on "Man & Environment"** held at National Institute of Oceanography, Goa from 8<sup>th</sup> –10<sup>th</sup> March, 1995.
2. **1995. National Symposium on "Recent Advances in Biosciences"** held at Maharishi Dayanand University, Rohtak from 3<sup>rd</sup> –5<sup>th</sup> November, 1995.
3. **1996.** 83<sup>rd</sup> Session of **Indian Science Congress** Association held at Punjabi University, Patiala from 3<sup>rd</sup> –8<sup>th</sup> January, 1996.
4. **1997.** 84<sup>th</sup> Session of **Indian Science Congress** Association held at Delhi University, New Delhi from 3<sup>rd</sup> –8<sup>th</sup> January, 1997.
5. **1997. International Symposium on "Sustainable utilization of Biodiversity"** held at Indira Gandhi National Forest Academy, Dehradun from 8<sup>th</sup> –10<sup>th</sup> March, 1997.
6. **1997.** First **Punjab Science Congress** held at Punjabi University, Patiala from 28<sup>th</sup> –30<sup>th</sup> April, 1997.
7. **1997. National Seminar on "Insects and Environment"** held at Panjab University, Chandigarh from 18<sup>th</sup> –20<sup>th</sup> September, 1997.
8. **1997.** 14<sup>th</sup> **National Symposium on "Recent Trends in Life Sciences"** held at Punjabi University, Patiala from 23<sup>rd</sup> –25<sup>th</sup> October, 1997.
9. **1998. National Seminar on Recent Advances in Human Biology** held at Punjabi University, Patiala from 3<sup>rd</sup> –5<sup>th</sup> February, 1998.
10. **1998. National Symposium on "Faunistic Biodiversity, Environment Monitoring & Biotechnology"** held at Gurukula Kangri Vishavidyala, Haridwar from 6<sup>th</sup>-8<sup>th</sup> February, 1998.
11. **1998. International Symposium on "Environmental Management in Mountainous Regions"** held at Govt. Post Graduate College, Rishikesh from 4<sup>th</sup>-7<sup>th</sup> March, 1998.
12. **1998. National Seminar on "Biodiversity Status, Management and Monitoring"** held at Jammu University, Jammu from 20<sup>th</sup> -22<sup>nd</sup> March, 1998.
13. **1998.** Second **Punjab Science Congress** held at GNDU, Amritsar from 2<sup>nd</sup>-4<sup>th</sup> April, 1998.

14. **1999.** Sixteenth **Punjabi Vikas Conference** held at Punjabi University, Patiala from 13<sup>th</sup> -15<sup>th</sup> January, 1999.
15. **1999.** Third **Punjab Science Congress** and Symposium on “**100 Years of Post-Mendelian Genetics: Advent of Biotechnology**” held at Panjab University, Chandigarh from 10<sup>th</sup>-12<sup>th</sup> December, 1999.
16. **2000.** Fifth **International Symposium on Vector and Vector Borne Diseases** held at Punjabi University, Patiala from 16<sup>th</sup>-18<sup>th</sup> February, 2000.
17. **2000.** **Seminar on State Biodiversity Strategy and Action Plan** held at Punjabi University, Patiala on 23<sup>rd</sup> November, 2000.
18. **2001.** **National Symposium on "Plant Biodiversity and its conservation"** held at Punjabi University, Patiala from 14<sup>th</sup>-15<sup>th</sup> February, 2001.
19. **2003.** **National Symposium on "Recent Trends in Zoological Sciences"** held at Punjabi University, Patiala from 12<sup>th</sup>-13<sup>th</sup> March, 2003.
20. **2004.** 91<sup>st</sup> Session of **Indian Science Congress Association** held at Panjab University, Chandigarh from 3<sup>rd</sup>-7<sup>th</sup> January, 2004.
21. **2005.** 8<sup>th</sup> **Punjab Science Congress** held at Punjabi University, Patiala from 7<sup>th</sup>-9<sup>th</sup> February, 2005.
22. **2005.** Seventh **International Symposium on Vector and Vector Borne Diseases** held at Punjabi University, Patiala from 18<sup>th</sup>-20<sup>th</sup> February, 2005.
23. **2006.** **National Congress of Entomology** held at Punjabi University, Patiala from 15<sup>th</sup>-17<sup>th</sup> March, 2006.
24. **2007.** Research Interface Workshop on **Insect Diversity** with emphasis on Micro-Lepidoptera held at Punjabi University, Patiala from 24<sup>th</sup>-25<sup>th</sup> March, 2007.
25. **2009.** **International Conference on Entomology** held at Punjabi University, Patiala from 20<sup>th</sup> -22<sup>nd</sup> February, **2009**.
26. **2010.** **Seminar on “PAWAN GURU PANI PITA”** organized under aegis of Guru Nanak Foundation, New Delhi held at GNF, Patiala on 19<sup>th</sup> January, 2010.
27. **2010.** **National Conference on Environment degradation and its impact on mankind** held at Punjabi University, Patiala from 19<sup>th</sup>-20<sup>th</sup> November, 2010.
28. **2011.** 14<sup>th</sup> **Punjab Science Congress** on Role of Scientific Innovations & Knowledge in Economic Development, SLIET, Longowal from 7<sup>th</sup> -9<sup>th</sup> February, 2011.
29. **2011.** 1<sup>st</sup> **Science Congress**, Punjabi University, Patiala on 28<sup>th</sup> February, 2011.
30. **2012.** **International Conference on Entomology** held at Punjabi University, Patiala from 17<sup>th</sup> -19<sup>th</sup> February, **2012**.
31. **2012.** 2<sup>nd</sup> **Science Congress**, Punjabi University, Patiala on 28<sup>th</sup> February, 2012

32. **2012. National Conference on Man and Environment** held at Punjabi University, Patiala from 15<sup>th</sup> –16<sup>th</sup> October, 2012.
33. **2013. National Seminar** organized by Indian Science Congress Association held at Punjabi University, Patiala on 24<sup>th</sup> January, 2013.
34. **2013. National Conference** on Preservation of environment: Challenges before humanity held at Sri Guru Granth Sahib World University, Fatehgarh Sahib on 14<sup>th</sup> March, 2013.
35. **2013. 3<sup>rd</sup> Science Congress** held at Punjabi University, Patiala on 19<sup>th</sup> March, 2013.
36. **2014. International Conference on Entomology** held at Punjabi University, Patiala from 21<sup>st</sup>-23<sup>rd</sup> February, 2014.
37. **2015. 4<sup>th</sup> Congress on Insect Science** held at Punjab Agricultural University, Ludhiana from 16<sup>th</sup> -17<sup>th</sup> April, 2015.
38. **2015. National Conference on Entomology** held at Punjabi University, Patiala from 29<sup>th</sup>-30<sup>th</sup> October, 2015.
39. **2016. International Conference on Entomology** held at Punjabi University, Patiala from 3<sup>rd</sup>-5<sup>th</sup> December, 2016.
40. **2017. National Conference on Man and Environment** held at Punjabi University, Patiala from 10<sup>th</sup>-11<sup>th</sup> March, 2017.
41. **2017. International Conference in Zoological Sciences** held Punjabi University, Patiala from 26<sup>th</sup> -28<sup>th</sup> October, 2017.
42. **2017. First Online International Conference on Biological Sciences** organized by Rayder Publication from 3<sup>rd</sup> -7<sup>th</sup> November, 2017.
43. **2018. Second Online International Conference on Biological Sciences** organized by Rayder Publication on 22<sup>nd</sup> July, 2018.
44. **2018. Seminar on “Science and Science Education”** organised by Azim Premji University, Bengaluru and IISER Mohali on 13<sup>th</sup>-14<sup>th</sup> October, 2018.
45. **2018. 5<sup>th</sup> Asian Lepidoptera Conservation Symposium** on “Impact of climate change on Asian Lepidoptera” organized by University of Hong Kong & Environmental Association, Hongkong from 13<sup>th</sup>-15<sup>th</sup> December, 2018.
46. **2019. One Day Seminar on World Water Day-2019 Programme** on 22<sup>nd</sup> March, 2019 organized by Department of Zoology & Environmental Sciences, Punjabi University, Patiala.
47. **2019. One day seminar on "Air Pollution & its impact”** held at Punjabi University on 28<sup>th</sup> March, 2019.

48. **2019.** 6<sup>th</sup> Asian Lepidoptera Conservation Symposium on “Mainstreaming Lepidoptera conservation in Asia” organized by Zoological Survey of India in collaboration with Association of Entomologists at Kolkata from 20<sup>th</sup>-21<sup>st</sup> September, 2019.
49. **2021.** e-Symposium on Biodiversity on the theme “Habitat fragmentation and its lasting impact on biodiversity of Indian Subcontinent” organized by Swami Sahjanand College, Jehanabad, Bihar on 3<sup>rd</sup>-4<sup>th</sup> February, 2021.
50. **2021.** National Conference on the topic “Strategies and solutions to achieve clean air- Punjab” organized by Punjabi University Environmental Society in collaboration with Punjab Pollution Control Board from 24-25<sup>th</sup> December, 2021.
51. **2022.** 25<sup>th</sup> Punjab Science Congress on Future endeavours of science & technology for sustainable growth held at Sri Guru Teg Bahadur Khalsa College, Anandpur Sahib from 7-9<sup>th</sup> February, 2022.
52. **2022.** International Conference on Insect Systematics and Evolutionary Biology organized by Punjabi University and Indian Society of Evolutionary Biologists from 16-18<sup>th</sup> February, 2022.
53. **2022.** Vigyan Sarvatra Puujate-Science Week Festival organized from 22<sup>nd</sup>-28<sup>th</sup> February, 2022 held at Punjabi University, Patiala in association with PSCST and DST.
54. **2022.** Sikhiya Sammelan 2022 on “Role of Education in shaping new Punjab” on 30<sup>th</sup> May, 2022 organized by Apna Punjab Foundation at SAS Nagar, Mohali.
55. **2023.** 26<sup>th</sup> Punjab Science Congress, National Conference on environment, food security and health with reference to climate change held at Sri Guru Granth Sahib World University, Fatehgarh Sahib from 7-9<sup>th</sup> February, 2023.
56. **2022.** Mission Hariali organized by Apna Punjab Foundation on 12.09.2022.
57. **2023.** International Conference on the growth of Biological Sciences in 21<sup>st</sup> century held at Punjabi University, Patiala from 2-4<sup>th</sup> March, 2023.
58. **2023.** National Mother Language Day organized by Apna Punjan Foundation and Jagat Punjabi Sabha at Ludhiana on 21.02.2023.
59. **2023.** Mission Hariali organized by Apna Punjab Foundation on 17.07.2023.
60. **2023.** Gian Khadag Convention organized by Apna Punjab Foundation at Thapar University, Patiala on 18.09.2023

#### **18. Webinars and Online Trainings:**

1. **2020.** Webinar on “Teaching and Learning Modes Post COVID-19” on 29<sup>th</sup> April, 2020 organized by Department of Electronics and Communication Engineering, Punjabi University Patiala.

2. **2020.** National Level Webinar on “Intellectual Property Right (IPR) and Patent Filing” on 16<sup>th</sup> May, 2020 organized by Mahatma Gandhi Mahavidyalya, Ahmedpur.
3. **2020.** Training on “Basics of COVID-19” on 20<sup>th</sup> May, 2020 organized by Department of Personnel and Training, GOI.
4. **2020.** Virtual National seminar on “Role of Biodiversity during COVID-19” on 22<sup>nd</sup> May, 2020 organized by PG College for Girls-42, Chandigarh.
5. **2020.** Two-day national webinar on “Impact of COVID-19 on Environment and Science and Technology’ on 26<sup>th</sup>-27<sup>th</sup> May, 2020 organized by Department of Physics and Electronics, Pithapur Rajah’s Government College, Kakinada.
6. **2020.** National webinar on “IMPACT OF COVID-19 on State, Individual and Development” on 29<sup>th</sup> May, 2020 organized by Department of Political Science and IQAC, Tumkur University, Tumakuru, Karnataka.
7. **2020.** National webinar on “Understanding Critical Thinking” on 4<sup>th</sup> June, 2020 organized by Mahatma Gandhi Mahavidyalya, Ahmedpur.
8. **2020.** “World Environment Day Celebrations” on 5<sup>th</sup> June, 2020 organized by “The Institution of Engineers (India), Bathinda Local Centre (Punjab) in association with Yadavindra College of Engineering, Punjabi University, Guru Kashi Campus, Talwandi Sabo”.
9. **2020.** One day webinar on “Climate Change, Environmental degradation and Pandemics” on 5<sup>th</sup> June, 2020 organised by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
10. **2020.** One day webinar on “Evolutionary Biology in the Lab and beyond” on 13<sup>th</sup> June, 2020 organised by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University Patiala.
11. **2020.** Training on “Pedagogy of Environmental Studies” on 15<sup>th</sup> June, 2020 organized by Central Board of Secondary Education.
12. **2020.** Two-days live online webinar on “Water, Sanitation, Hygiene, and Waste Management for the Covid-19 virus” on 15<sup>th</sup>-16<sup>th</sup> June, 2020 organized by Department of Applied Sciences, Chitkara University, Punjab.
13. **2020.** One day webinar on “The generation and distribution of biodiversity in the East Himalaya, from trees to birds” on 18<sup>th</sup> June, 2020 organised by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University Patiala.
14. **2020.** Training on “Essentials of COVID” on 20<sup>th</sup> June, 2020 organized by Department of Personnel and Training, GOI.

15. **2020.** National Webinar on “Combating COVID with Yoga” on 21<sup>st</sup> June, 2020 organized by Department of Sports Sciences, Punjabi University Patiala.
16. **2020.** One day webinar on “The origins of complexity and the complexity of origins” on 26<sup>th</sup> June, 2020 organised by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University Patiala.
17. **2020.** Training on “COVID-19 Stress Management-English” on 28<sup>th</sup> June, 2020 organized by Department of Personnel and Training, GOI.
18. **2020.** International webinar on “Forensic Entomology and its Relevance in Legal Proceedings” on 29<sup>th</sup>-30<sup>th</sup> June, 2020 organized by the Department of Zoology, University of Lucknow, Lucknow, India.
19. **2020.** One day webinar on “Kin Selection relatedness and conflict in the social amoeba *Dictyostelium discoideum*” on 30<sup>th</sup> June, 2020 organised by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University Patiala.
20. **2020.** One day webinar on "Early adversity, Gqsignaling and the programming of psychiatric vulnerability" on 6<sup>th</sup> July, 2020 organized by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
21. **2020.** One day webinar on “A tool to sing louder and an amplifier to hear better: the O. Henry story" on 10<sup>th</sup> July, 2020 organized by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
22. **2020.** Training on “Infection Prevention and Control” on 13<sup>th</sup> July, 2020 organized by Department of Personnel and Training, GOI.
23. **2020.** Online webinar on “Disinfectant and Disinfectant-by Products” on 18<sup>th</sup> July, 2020 organized by Department of Applied Sciences, Chitkara University, Punjab.
24. **2020.** Webinar on “MYSTERIOUS DISEASES: The Failure of Disease Surveillance in India” on 27<sup>th</sup> July, 2020 organized by Down to Earth Webinars, Centre for Science and Environment (CSE), New Delhi.
25. **2020.** One day webinar on "The genomic basis and spatial scale of adaptation in Atlantic cod and their consequences in a changing climate" on 23<sup>rd</sup> July, 2020 organized by Zoological and Environmental Society, Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
26. **2020.** “Capacity building Program” from 25<sup>th</sup>-26<sup>th</sup> of July, 2020 organized by Centre of E- Learning and Teaching Excellence, Punjabi University, Patiala.

27. **2020.** One Day National Webinar on “Covid-19 and its link With Environment and Its Biodiversity’ on 28<sup>th</sup> July, 2020 organized by High Altitude Regional Centre, Zoological Survey of India, Solan.
28. **2020.** One day webinar on "What soldier and super soldier Ants teach us about development and evolution" 30<sup>th</sup> July, 2020 organized by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
29. **2020.** One Day National Webinar on “Aquatic Faunal Diversity of Arunachal Pradesh” on 20<sup>th</sup> August, 2020 organized by ZSI, Arunachal Pradesh Regional Centre, Itanagar.
30. **2020.** One day webinar on "Major transition in fungus growing Ant agriculture" on 25<sup>th</sup> August, 2020 organized by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
31. **2020.** One day webinar on "How hybridization facilitates adaptive radiations in Cichlid fishes and Heliconius butterflies" on 4<sup>th</sup> September, 2020 organized by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
32. **2020.** Webinar on the theme “Ozone for Life” held on the occasion of ‘World Ozone Day’ on 16<sup>th</sup> September, 2020 organized by ENVIS centre on Biodiversity (Fauna), Zoological Survey of India, Kolkata.
33. **2020.** One Day National Webinar on ‘Impact of Climate Change on Pollinators of High Altitude of North-West Himalaya’ on 16<sup>th</sup> September, 2020 organized by High Altitude Regional Centre, Zoological Survey of India, Solan.
34. **2020.** Online webinar on “Ozone for Life” on 16<sup>th</sup> September, 2020 organized by School of Environmental Sciences, Jawaharlal Nehru University, Delhi.
35. **2020.** Training on “Online Health Educator Training Program (COVID-19)” on 19<sup>th</sup> November, 2020 organized by Heart Care Foundation of India.
36. **2020.** Webinar on “The Next Steps in Tackling AMR” on 23<sup>rd</sup> November, 2020 organized by Science Serving Society, (TIGS).
37. **2020.** Live Masterclass on Patent Drafting on 28<sup>th</sup> November, 2020 organized by Turnip innovations, Mumbai.
38. **2020.** Webinar on “Gene Editing for Agriculture, Sustainable Development: Prospects and Perspectives.” On 15<sup>th</sup> December, 2020 organized by Science Serving Society, (TIGS).
39. **2020.** Webinar on “Gene Editing for Agriculture, Sustainable Development: Prospects and Perspectives.” On 15<sup>th</sup> December, 2020 organized by Science Serving Society, (TIGS).

40. **2021.** Live Masterclass on Essentials of Patent Analytics on 6<sup>th</sup> February, 2021 organized by Turnip innovations, Mumbai.
41. **2021.** Online Seminar on “Precautions to be observed on reopening of schools” on 11<sup>th</sup> February, 2021 organized by Heart Care Foundation of India.
42. **2021.** Webinar on “Gene Editing Research in Agriculture: Key Initiatives in India”, on 17<sup>th</sup> February, 2021 organized by Science Serving Society, (TIGS).
43. **2021.** “CII Catch-up Campaign- Response to Covid-19 Crisis and School Closure for Re-Building Foundational Reading Arithmetic Skills of Primary School Children” on 26<sup>th</sup> February, 2021 organized by Confederation of Indian Industry (CII).
44. **2021.** “CII Conference on Re-Building India’s Growth Story” from 22<sup>nd</sup> to 23<sup>rd</sup> March, 2021 organized by Team CII-NR.
45. **2021.** “World IP Day Webinar” on 26<sup>th</sup> April, 2021 organized by Turnip Innovations.
46. **2021.** One day webinar on “An inordinate fondness for insects” on International day for biological diversity on 22<sup>nd</sup> May, 2021 organized by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
47. **2021.** Webinar titled “National Moth Week 2021 Inauguration” on 11<sup>th</sup> July, 2021 organized by NMNC.
48. **2021.** Live Webinar on “IPR Strategy and Cleantech Innovation” on 16<sup>th</sup> July, 2021 organized by Turnip innovations, Mumbai.
49. **2021.** One day webinar on "Ecosystem Restoration” on World Environment day on 5<sup>th</sup> June, 2021 organized by Department of Zoology and Environmental Sciences, Punjabi University Patiala.
50. **2021.** Talk on “Native plants for birds and butterflies” on 24<sup>th</sup> July, Organized by WICCI DELHI Sustainable Businesses Council.

#### **19. International/ National Conferences/ Workshops organized:**

1. As Member Registration committee and Accommodation & Transport Committee **National Conference on Man and Environment** held at Punjabi University, Patiala from 15<sup>th</sup>–16<sup>th</sup> October, **2012**
2. As Joint Secretary of the Organizing Committee, **International Conference on Entomology** held at Punjabi University, Patiala from 21<sup>st</sup>–23<sup>rd</sup> February, **2014**.
3. As Member Registration committee and Accommodation & Transport Committee **International Conference on Entomology** held at Punjabi University, Patiala from 21<sup>st</sup>–23<sup>rd</sup> February, **2014**
4. As Organizing Secretary, Workshop on **Insect Taxonomy** organized by Association of Entomologists held at Punjabi University, Patiala from 9<sup>th</sup> March, **2015**.



5. As Organizing Secretary, **National Conference on Entomology** held at Punjabi University, Patiala from 29<sup>th</sup>–30<sup>th</sup> October, **2015**.
6. As Member Registration committee and Accommodation & Transport Committee **National Conference on Entomology** held at Punjabi University, Patiala from 29<sup>th</sup>–30<sup>th</sup> October, **2015**.
7. As Member Registration committee and Publication & Cultural Committee **International Conference on Entomology** held at Punjabi University, Patiala from 3<sup>rd</sup>-5<sup>th</sup> December, **2016**.
8. As Organizing Secretary, **International Conference on Entomology** held at Punjabi University, Patiala from 3<sup>rd</sup>-5<sup>th</sup> December, **2016**.
9. As Organizing Secretary, **Workshop on order Lepidoptera** organized by Association of Entomologists held at Punjabi University, Patiala from 21<sup>st</sup>- 23<sup>rd</sup> September, **2017**.
10. As Incharge, Symposium on Entomology, **International Conference in Zoological Sciences** held Punjabi University, Patiala from 26<sup>th</sup> -28<sup>th</sup> October, **2017**.
11. As Member Accommodation, Transport & Cultural Committee **International Conference in Zoological Sciences** held at Punjabi University, Patiala from 26<sup>th</sup>-28<sup>th</sup> October, **2017**.
12. As Member, Programme Committee, **First Online International Conference on Biological Sciences** from 3<sup>rd</sup> -7<sup>th</sup> November, **2017**.
13. As Member, Programme Committee, **Second Online International Conference on Biological Sciences** held on 22<sup>nd</sup> July, **2018**.
14. As Organizing Secretary, Children Science Congress, Indian Science Congress Association, 27<sup>th</sup> January, **2020**.
15. As Organizing Secretary, **International Conference on Insect Systematics and Evolutionary Biology** held at Punjabi University from 16-18<sup>th</sup> February, 2022
16. As Member Organizing Committee and Editorial Committee, International Conference on the growth of Biological Sciences in 21<sup>st</sup> century held at Punjabi University, Patiala from 2-4<sup>th</sup> March, 2023.

#### **19. Editorial responsibilities:**

- a) Member Editorial Board of Journal of Environmental and Social Sciences.
- b) Member Editorial Board of Journal of Zoological and Bioscience Research.
- c) Member, Editorial Board, Journal Punjab Academy of Sciences
- d) Reviewer: Indian journal of Forestry, Journal of Threatened Taxa, National Geographic magazine, Plant Science and Research, Journal of Zoological Science, Bulletin of Pure and Applied Science, Journal of Environmental Studies, Indian

Journal of Natural Products and Resources, Annals of Entomology, Journal of Environmental and Social Sciences, International Journal of Plant & Soil Science, Biotechnology Research, Geobios, Uttar Pradesh Journal of Zoology

e) Reviewer and Editorial member: Bioinfo Publications

**20. Membership of Professional organizations bodies/ Organizations:**

- a) President, Balbir Memorial Educational Society, Patiala
- b) Joint Secretary, Association of Entomologists, Patiala
- c) Executive & Life Member, Punjab Academy of Sciences, Patiala.
- d) Member, Apna Punjab Foundation
- e) Life Member, Indian Science Congress Association, Kolkata
- f) Life Member, Association for the Advancement of Entomology, Trivandrum

**21. Technical Proficiency:** The undersigned is a trained taxonomist on insects of order Lepidoptera and can identify majority of Indian species referable to ditrysian moth fauna, having thirty years of research/teaching experience in the field of taxonomy/systematics, molecular biology, avian diversity and environmental sciences. I worked in all the three National Museums i.e. Zoological Survey of India, Kolkata; Indian Agricultural Research Institute, New Delhi and Forest Research Institute, Dehradun. I am recipient of different awards/ fellowships from CSIR and DST, New Delhi.

Date: 23<sup>rd</sup> September, 2023

(Amrit Pal Singh Kaleka)