Report of NATIONAL WORKSHOP ON GENETICS CELEBRATING 100 YEARS OF SCIENTIST Dr. G.N. RAMCHANDRAN & Dr. H G KHORANA (25 March 2023 & 26 March 2023)

Submitted to The DIRECTOR VIGYAN PRASAR

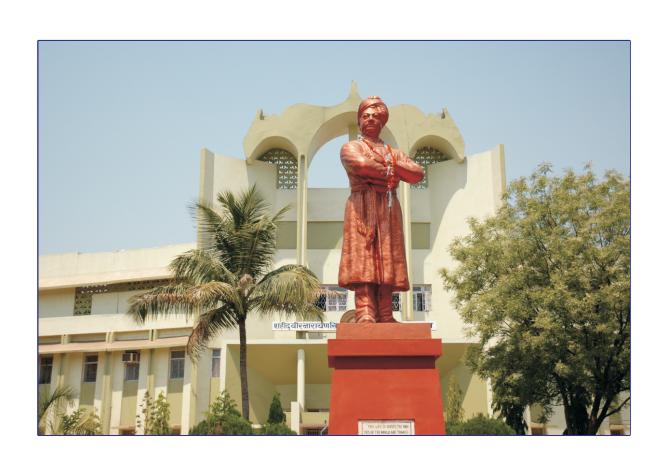
Technology Bhawan, New Delhi

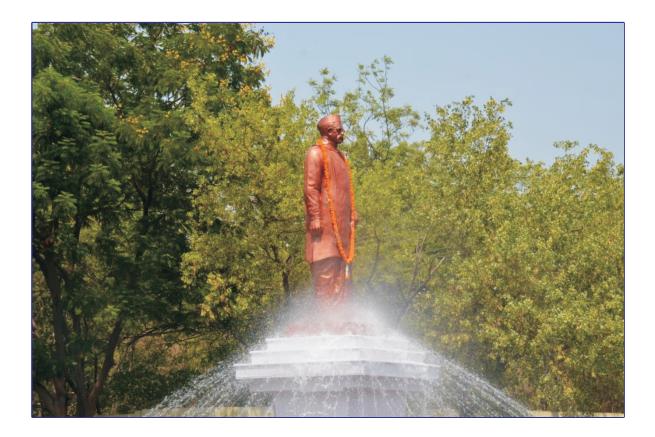
Submitted By

SoS of ANTHROPOLOGY Pt. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR (C.G.)

&

CHHATTISGARH VIGYAN SABHA Shankar Nagar, RAIPUR





National workshop

on

GENETICS, Celebrating 100 years of scientist Dr. G.N. Ramchandran and Dr. H.G. Khorana

BACKGROUND : On our joint request Vigyan Prasar, by its letter no. VP/SciCom/3006/Centenarian-Genetics/2023 Dated: March 14, 2023 sanctioned our proposal to organize a National Workshop on Genetics to celebrate 100 years of scientist Dr. G.N. Ramchandran and Dr. H G Khorana. After receiving it, we have requested science communicators to participate in this workshop all over the country. Parallel to it, we have tried several resource persons to deliver lectures and presentations during this workshop resulting a good participation from all over India.

VENUE OF THE WORKSHOP: Seminar Hall, Arts Block of Pt. Ravishankar Shukla University, Raipur (C.G.) of a capacity of 150 participants.

INAUGURAL SESSION: Dr K Subramanyam IFS, member of the State Planning Commission, Chhattisgarh and former Director General of Chhattisgarh Council of Science and Technology has inaugurated the National Workshop on the morning of 25th March 2023. The inaugural session was presided over by the honorable Vice Chancellor Prof. Kesari Lal Verma of the host Pt. Ravishankar Shukla University, Raipur (C.G.). Former Vice Chancellor of PRSU Prof. S K Pandey, Senior Scientist from Vigyan Prasar Dr T V Venkateshwara, resource person from Kolkata University Dr Arunabh Mishra and resource person from Bhopal Dr S R Azad have associated as the Special Guest in the inaugural session. Dr. Ashok Pradhan, Professor and Head, School of Studies in Anthropology, Pt. Ravishankar Shukla University (C.G.) has given a welcome speech just after candle lighting on the portrait of Gregor Mendel, Dr. GN Ramachandran and Dr. HG Khorana.

In his inaugural speech, Chief Guest Dr. K Subramanyam explained thoroughly the works of Gregor Mendel on the different trends of pea plants. He has explained the historical development of genetics from Gregor J Mendel to current developments. He said that Dr H G Khorana, who studies Chemistry an M. Sc. and PhD in Organic Chemistry has developed a synthetic gene in a bacteria. His basic work is Pathfinder and used by modern scientists in genetics. He emphasizes that we are advancing from GENETICS to GENEMIX structures. Today we are using genetic breakup in chemotherapy to treat cancer disease. He appeals to the participants to disseminate knowledge of Genetics among common people.

In his presidential speech, Vice Chancellor Prof. Kesari Lal Verma thanked Vigyan Prasar for providing an opportunity to organize this workshop at this University. He said that our scientists have played a very important role in the development of the nation. Professor Ramachandran and Dr Khorana are some of those who have done excellent work in the field of Genetics. He emphasizes the dissemination of knowledge of modern findings of science in our languages. He explained his role in publishing so many books in local languages when he was posted in the Commission for Scientific and Technical Terminology of the Government of India. Joint Secretary of Chhattisgarh Vigyan Sabha Mr. Anupam Jopher has delivered the vote of Thanks to all the guests and participants.

Outcome of the Workshop : A Total of 113 participants attended this workshop out of which 42 one from outside of the Chhattisgarh state and the rest were from various districts of Chhattisgarh. Most of the participants are from academic backgrounds from different Universities and education Institutions. The following are the major outcomes of the workshop -

- Knowledge sharing about GENETICS.
- Knowledge of the Historical Development of GENETICS.
- Knowledge sharing about Dr. G.N. Ramachandran, Dr. H.G. Khorana and Gregor Mendel.
- Learning about the rules of Genetics is very simple and easy way.
- Development of so many resource persons to teach Genetics in their respective institutions.
- Development of a knowledge-sharing Network among participants.

DETAILS OF TECHNICAL SESSIONS

25.03.2023 (First Day)

- A. Registration: 10.00 am to 11:00 am
- B. Inaugural Session: 11.00 am to 12:00 Noon

Inauguration by Chief: Dr. K. Subramanyam, IFS, Member, State Planning Commission

Chaired by: Prof. Keshri Lal Verma Verma, Vice Chancellor, Pt. Ravishankar Shukla University, Raipur (C.G.)

Special Guests:

- 1. Dr. T. K. Venkateshwara, Senior Scientist, Vigyan Prasar, DST, New Delhi
- 2. Dr M.L. Naik, President, Chhattisgarh Vigyan Sabha
- 3. Dr. S. K. Pandey, Former Vice Chancellor, Pt. Ravishankar Shukla University, Raipur
- 4. Dr. Arunabha Mishra, Vidyasagar College, Kolkata
- 5. Ms. Asha Mishra, Senior Science Activist, AIPSN

Welcome Address: Dr. Ashok Pradhan, Professor & Head, SoS in Anthropology, Pt. RSU, Raipur

Addressed by: Dr. K. Subramanyam, IFS, Member, State Planning Commission

Addressed by Chair Person: Prof. Keshri Lal Verma Verma, Vice Chancellor, Pt. Ravishankar University, Raipur (C.G.)

Vote of Thanks: Anupam Jofer, Joint Secretary, Chhattisgarh Vigyan Sabha

Tea Break

12:00 Noon to 01:00 pm

Technical Session I: Evolution and Development of Genetics

Chairperson: Ms Nidhi Singh, Joint Secretary, Chhattisgarh Vigyan Sabha

Speaker: Dr T V Venkateshwara (Vigyan Prasar) - Mendel, heredity and the emergence of Genetics

Speaker: Dr Prabha Chaudhary (Indira Gandhi Krishi Vishvavidyalay) - Basics of Genetics and its Historical Development

MENDEL, HEREDITY ORIGIN OF GENETICS : Dr. T. V. Venkateshwara using a very attractive and informative PPT, Dr. T.V. Venkateshwara explained the story of Mendel's rule of hereditary. He has shown the chronological development of genetics slide by slide and the final/status, we are experiencing nowadays. Many questions were asked by the participants. Dr. T. V. Venkateshwara replied and satisfied them with his wise answers.

BASICS OF GENETICS : Prof. Prabha Choudhary from Indira Gandhi Krishi Vishwavidyalaya has delivered a beautiful lecture on the subject "Basics of Genetics". She showed lots of slides by which she explained the basic principles of science.

Question & Answer

Vote of Thanks: Dr Sunil Kumar Sahu, Vice President, Chhattisgarh Vigyan Sabha

1.30-2.00 pm: LUNCH

02:00 pm to 03:30 pm

Technical Session II : Human Evolution

Co-Ordinator: Anju Meshram, Treasurer, Chhattisgarh Vigyan Sabha

Speaker: 1. Dr ParthibBasu (Calcutta University) - Darwin and his theory of Human Evolution (Online)

2. Prof. M.L. Nayak, Former Head, Life Science, Pt. Ravishankar Shukla University, Raipur - "Extra nuclear inheritance"

Darwin and his theory of Human Evolution (Online) : Prof. ParthibBasu has briefly described the details of Darwin's Theory of Evolution. By presenting under slides. He has explained the development of evolution step by step.

PExtranuclear inheritance : rof. M.L. Naik, President of Chhattisgarh Vigyan Sabha and former Professor of Life Science at Pt. Ravishankar Shukla University, Raipur (C.G.) has explained evolution and mutation. His lecture was very informative on Extra Nuclear Inheritance refers to the transmission of genetic information that is not encoded in the nuclear DNA of an organism's cells. While the vast majority of an organism's genetic material is located in the cell nucleus, certain genetic information is found outside the nucleus in other cellular structures. Understanding extranuclear inheritance is essential in genetics, as it adds complexity to the inheritance pattern.

Question & Answer

Vote of Thanks: Dinesh Kumar, Chhattisgarh Vigyan Sabha.

03:30 to 04:20 pm

Technical Session III: Dr H G Khorana Memorial Lecture

Chairperson : Anamika Chakravarty, Chhattisgarh Vigyan Sabha

Speaker : Dr Sagarmoy Ghosh, Prof. (Calcutta University) : **Biotechnology and Genetic Engineering for the people: issues and challenges**

GENETICS ENGINEERING: Dr Sagarmoy Ghosh.

In the 3rd technical session, Dr. Sagarmoy Ghosh explained the different aspects of genetic engineering.

He has drawn his views towards new research beneficial for mankind and also explained the dangers of new research such as terminator genes.

Question & Answer

Vote of Thanks : Uma Prakash Ojha, Chhattisgarh Vigyan Sabha

4.20 - 5.10 pm

Technical Session IV: GN Ramachandran Memorial Lecture

Chairperson: Shri H. N. Tandon, C.G. Vigyan Sabha

Speaker : Dr. S.Krishnaswamy (Former Prof. Madurai Kamaraj University, Visiting Prof. Inst.

of Mathematical Science) - GN Ramachandran and his contribution in Biology

Contribution of Dr. G.N.Ramchandran in Genetics : Dr. S. Krishnamurthi explained the works of Dr. G.N.Ramachandran. In his presentation, he showed the research and development of triple helical structure of gene.

Question & Answer

Vote of Thanks: Dipankar Bhowmik.

26.03.2023 (Second Day)

10:00 - 11:30 am

Technical Session V: Genetics and Society

Chairperson : Dr. LaxmikantChawre, CBS, Pt. RSU, Raipur

Speaker : Dr ArunabhaMisra (Vidyasagar College, C U): Myth related to Evolution and Genetics

Speaker: Dr. Ashok Pradhan (Pt. RSU, Raipur) - Common Genetic Diseases

In his explainarysession on different myths related to evolution and genetics, Dr. Arunabha

Mishra-Technical adviser of this workshop has explained the true and false issues of Evolution.

Lots of question were raised by participants during his lecture, whom he satisfied.

Vote of Thanks : Dr. NandkumarChakradhari, Pt. RSU, Raipur

11.45 am - 1.15 pm

Valedictory Session : Summing up and Planning for future

Panelists : Prof. Ashok Pradhan Vishwas Meshram, Asha Mishra, Dr. T V Venkateshwara, ArunabhaMisra, etc

Common Genetical Disease : Prof. Ashok Pradhan

Prof. Ashok Pradhan of Pt. Ravishankar Shukla University, Raipur has given details of common genetic diseases and given details of people suffering from this disease. He showed the geographical distribution of these illnesses and also discussed about the conditions that results from abnormalities in an individual's DNA. These abnormalities can be inherited from parents or occur spontaneously during a person's lifetime. genetic diseases well-known to general public are Cystic Fibrosis, Huntington's disease, Sickle Cell Anemia, Muscular Dystrophy, Hemophilia, Polycystic Kidney diseases etc. Genetic diseases often require medical attention and individuals with family history of such conditions and individuals with the family history of such conditions may benefit from genetic counselling to assess their risk. Early detection and management can play crucial role in improving the quality of individuals affected by these genetic disorders.

Participants view – Almost all the participants appreciated this workshop and said that this workshop is very use full for them to know about the contribution of Dr. G.N. RAMCHANDRAN & Dr. H G KHORANA. They admired VIGYAN PRASAR for celebrating 100 years of Dr. Ramchandran and Dr. Khorana and giving them opportunity to participate in this National Workshop. They also appreciated the schedule of workshop which engaged top intellectuals of the country in the field of Genetics. All the participants have collected the PPTs of Lectures given by these Resource Persons.

They also appreciated the arrangements done by Pt. Ravishankar Shukla University, Raipur (C.G.) and Chhattisgarh Vigyan Sabha for them including Accommodations, Food, Reading Materials & Travel.

They requested that VIGYAN PRASAR should arrange more workshop like this one every year, so that teachers, research scholars & science activist will be benefited from this knowledge sharing workshop.

Organizer's view – Pt. Ravishankar Shukla University, Raipur (C.G.) & Chhattisgarh Vigyan Sabha is thankful to Vigyan Prasar for this very significant workshop to celebrate 100 years of the great Indian Scientist Dr. Ramchandran and Dr. Khorana. This workshop has open the doors to understand the genius work of Dr. Ramchandran and Dr. Khorana in the field of Genetics. The satisfaction shown by participants gives us strength to arrange this type of workshop again and again. We hope from Vigyan Prasar and Department of Science and Technology to support us in futures for similar workshops in various Universities and Educational Institutions of Chhattisgarh State.

Take home task and future activities -

- A WhatsApp group has created for knowledge sharing and troubleshooting related to issues of GENETICS with mentors of the workshop.
- Sharing of PPT and articles with participants.
- Planning of online lectures on Genetics.
- Local level workshop on Genetics and about the works of Dr. Ramchandran and Dr. Khorana will be planned.

FUTURE ACTIVITIES and FOLLOW UP

- A WhatsApp group has created for knowledge sharing and troubleshooting related to issues of GENETICS with mentors of the workshop.
- Sharing of PPT and articles with participants.
- Planning of online lectures on Genetics.
- Local level workshop on Genetics and about the works of Dr. Ramchandram and Dr. Khorana will be planned.

List of Participants

- 1. Sudesh Ghoderao, Maharashtra
- 2. Sheela Ghoderao, Maharashtra
- 3. Arun Kumar M 62 SFS, Jharkhand
- 4. Anant nathGiri M 19 SFS, Jharkhand.
- 5. Arun Kumar, BGVS Jharkhand
- 6. Sheishankar Prasad, BGVS Jharkhand
- 7. Birju prasad, BGVS Bihar
- 8. Ravi kumar, BGVS Bihar
- 9. Santosh Kar m 45, BGVS Orisha
- 10. Niranjan Mali M 48, BGVS Orisha
- 11. Biratrajpradhan M 46, BGVS Orisha
- 12. Dhiraj Goswami, Ellora vigyan Mancha
- 13. Julhashuddin Ahmed, GVS Assam
- 14. Musaddik Ahmed, GVS Assam
- 15. Milan Gain, PBVM, West Bengal
- 16. Dr P.N. Verma, MPVS
- 17. Ashish Pare, MPVS
- 18. E. Basavaraju, KRVP
- 19. HKS Samay, KRVP
- 20. Vijay Pal M 36, BGVS Uttar Pradesh
- 21. Suneeta F 40, BGVS Uttar Pradesh
- 22. Pushpa F 32, BGVS Uttar Pradesh
- 23. Satbir Nagal, HariyanaBigyan Manch
- 24. Chitra Singh, F, HariyanaBigyan Manch
- 25. Rajender Agnihotri, Haryana GVS
- 26. Ms. Suraj.Haryana GVS
- 27. Dinesh Nagar, MPBGVS
- 28. Shilpa Jain, F, MPBGVS
- 29. Afjal, MPBGVS
- 30. Tohiq Ahmed, BGVS, Uttarakhand
- 31. Dr.Raseena NR, Dept.of Bot, KU, Kssp
- 32. Anju.H,Department of Bot.,KU,Kssp

8

33. Ravi Shankar S, BGVS Karnataka

- 34. Nalinka Shriwastava
- 67. Ravina
- 68. Reena Verma
- 69. Shishupal Bhoi
- 70. Shristi Ware
- 71. Sujit Jangde
- 72. Sushma Pandey
- 73. Swati Chandrakar
- 74. Sweta Verma
- 75. Usha Baghel
- 76. Vibha Belchandan
- 77. Yogita Verma
- 78. Ankit Chandrawanshi
- 79. Bharti Chandrakar
- 80. IndrakantBhuarya
- 81. Jyoti Sahu
- 82. Kajal Tiwari
- 83. NutanSahu
- 84. Pooja Sahu
- 85. PoorviGaharwar
- 86. Pratibha Tripathi
- 87. Priti Pradhan
- 88. Priyanka Nayak
- 89. Priyanka Sonwani
- 90. RajiyaBano
- 91. SaksheeNirmalkar
- 92. Swati Dewangan
- 93. Tilak Ram Vishwakarma
- 94. Venkateshwar
- 95. Yogita Singh
- 96. Mithlesh Sen
- 97. Neelam Sahu
- 98. NitikaBaghel
- 99. Priya Rani Neti

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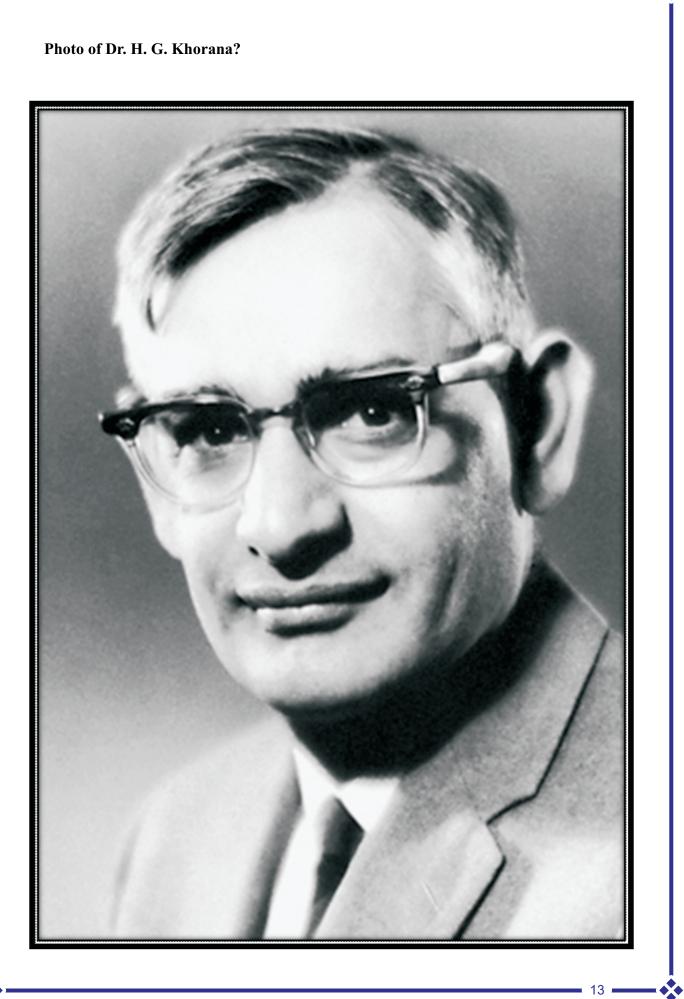
100. Pukh Raj

- 101. Usha Samar Paikra
- 101. Hemant Kumar Joshi
- 102. ShailaMukharjee
- 103. Sunita Sodi
- 104. Prakash Chandra
- 105. VedpradashDhruw
- 106. Bhumika Raj Sonwane
- 107. Oshin Bajrang
- 108. Ankita Bhoi (S)
- 109. Ankita Bhoi (J)
- 110. Sanjana Patel
- 111. Suneel Kumar Mehta
- 112. Krishna Kumar Paikra

Schedule of Workshop (copy from mail) 25.03.2023 (First Day) Registration: 10.00 am to 11:00 am Inaugural Session: 11.00 am to 12:00 Noon Tea Break 12:00 Noon to 01:00 pm Technical Session I : Evolution and development of Genetics 1.30-2.00 pm: LUNCH 02:00 pm to 03:30 pm Technical Session II : Human Evolution 03:30 to 04:20 pm Technical Session III : Dr. H G Khorana Memorial Lecture 4.20 - 5.10 pm

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