

RNI Reg. No : MAHMUL/2015/74000

ISSN : 2395 - 759X

AKANKSHA..... New Directions & Challenges

आकांक्षा..... नवी दिशा आणि आव्हाने

आकांक्षा..... नई दिशा और आव्हाने

Vol.X, Issue II, Febuary 2024

No part of this Journal may be reproduced in any form, by Photostar, Microfilm, Xerography,
Of any other means, of incorporated into any information reteieval system, electronic or
mechanical, without the written permission of the Author, Editor-In-Chief and the Publisher
of this Journal.

Copyright © 2015 by. Prof. Mayur B. Lahane
Inc. All Rights Reserved

Powered By

Editor-In- Chief
Dr. Mayur Lahane

Published By

Akanksha Tankalekhan Mutipurpose Society.
Near Ram Mandir, Peth pura,
At. Post. Hiwarkhed
Tq. Telhara Dist. Akola Maharashtra 444103
Cont :- 9096593842

AKANKSHA..... New Directions & Challenges

आकांक्षा..... नवी दिशा आणि आव्हाने

आकांक्षा..... नई दिशा और आव्हाने

An International Indexed, Refereed, Peer Reviewed, Interdisciplinary,
Multilingual, Multisubject, Monthly Research Journal.

Issue

February 2024

RNI No.

MAHMUL/2015/74000

ISSN

2395-759X

Editor-In-Chief

Dr. Mayur B. Lahane

Cont :- 9096593842

Email :- akankshajournal@gmail.com

lahane_mayur@rediffmail.com

Date of Publication

25th of Every Month

Owner, Printer's, Publisher Name

Dr. Mayur Bandu Lahane

Printed & Published At

Akanksha Tankalekhan Multipurpose Society,

Near Ram Mandir, Peth Pura, At.Post. Hiwarkhed (rup)

Tq. Telhara Dist. Akola Maharashtra 444103.

Single Issue Price

100/-

© All Rights are reserved with the publisher. The opinion expressed are of the authors and the Publisher, Editor-in-Chief, Editorial Board, as well as the peer's committee, Peer Review committee does not hold any responsibility for any of the views expressed.

© मासिकातील मते, संदर्भ, घटना, व अन्वयार्थ हे लेखकांचे स्वतंत्र संशोधन लेखन आहे. या बाबींशी प्रकाशक, मुख्य संपादक, संपादक मंडळ, सल्लागार समिती, समीक्षक मंडळ सहमत असेलच असे नाही.

© मुख्य संपादक — प्रा. मयुर लहाने का मानद पद एवं कार्य पूर्णतः अवैतनिक है । इस शोध पत्रिका के प्रकाशन, सम्पादन, एवं मुद्रण में पूर्णतः सावाधानी बरती गई है। किसी भी प्रकार की त्रुटि महज मानवीय भूल मानी जाए । त्रुटी हेतु संपादक, प्रकाशक एवं मुद्रक जिम्मेदार नहीं होगा ।



**NATIONAL INSTITUTE OF SCIENCE COMMUNICATION
AND INFORMATION RESOURCES**
(Council of Scientific and Industrial Research)
14, Satsang Vihar Marg, New Delhi 110 067

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

G. Mahesh, Ph.D.
Head, National Science Library
Phone: 91-11-26863759
E-mail: gmahesh@niscair.res.in website: <http://nsl.niscair.res.in>

NSL/ISSN/INF/2015/1182

Dated: May 29, 2015

Mayur Bandu Lahane
Akansha Tankalekhan Multipurpose Society
Hiwarkhed (Rup) Tq. Telhara
Dist. Akola 444 103

Dear Sir/Madam,
महोदय /महोदया

We are happy to inform you that the following serial(s) published by you has been registered and assigned ISSN (Print)

हमें आपको यह सूचित करते हुए प्रसन्नता हो रही है कि निम्नलिखित प्रकाशन पंजीकृत कर लिए गये हैं एवं (प्रिंट) आई.एस.एस.एन. आबंटित कर दिये गये हैं

ISSN 2395- 759X

Akansha....Navi Disha ani Aavhane
आकांक्षानवी दिशा आणि आवन्हे

It is important that the ISSN should be printed on every issue preferably at the right hand top corner of the cover page.

प्रकाशन की प्रत्येक प्रति के कवर पेज के दाहिने और के ऊपरी सिरे पर आई.एस.एस.एन. छपा होना आवश्यक है।

We will be responsible for monitoring the use of ISSN assigned to Indian Serials and for supplying up to-date data of the same to the International Centre for ISSN, Paris. For this purpose we request you to send us the forth coming issue of your serial on complimentary basis.

भारतीय राष्ट्रीय केंद्र की जिम्मेदारी होगी कि वह भारतीय पत्रिकाओं को आबंटित आई.एस.एस.एन. की जांच करेगा एवं उद्यतन डाटा की जानकारी इंटरनेशनल सेंटर फॉर आई.एस.एस.एन. पेरिस को भेजेगा। अतः आपसे अनुरोध है कि इस कार्य हेतु प्रकाशन की एक प्रति आई.एस.एस.एन. प्रिंट करके सम्मानार्थ भेंट हमें भेजे।

We solicit your co-operation in this regard.

आपके सहयोग के लिए हम आभारी रहेंगे।

भवदीय

(जी महेश)

हेड

नेशनल साइंस लाइब्रेरी एवं आई. एस. एस. एन.

Review Process

1. Each Manuscript will be primarily examined by the editor, and then forwarded to one/two referee(s) for blind review. The Research Paper shall be published subject to recommendation of referees. The Review process may take up to 2-3 days. (Maximum two weeks in extra ordinary circumstances).
2. The authors shall be informed about the selection/rejection of the article/paper by e-mail only. However the journal shall publish the article/ papers of the authors completing the formalities in due time mentioned as per our norms. The rejected papers shall not be returned.
3. In case of acceptance of the article and completion of publication formalities by the author, journal reserves the right of making amendments in the final drafts of the research paper to suit the journal's requirement.
4. Editing of the Research Journal is processed without any remittance. The Selection and publication is done after recommendation of subject expert referee.
5. Thoughts, language vision and example in published research paper are entirely of author of research paper. It is not necessary that both editor and editorial board are satisfied by research paper. the Responsibility of the matter of research paper is entirely of author.
6. Along with the paper it is compulsory to send Membership form and copyright form.
7. In any condition if any National/International university denies to accept the research paper published in the journal then it is not the responsibility of Editor, Publisher and Management.
8. Before re-use of published research paper in any manner, it is compulsory to take written acceptance from Chief Editor unless it will be assumed as disobedience of copyright rules.
9. All the legal undertaking related to this research journal are subjected to be hearable at Akot jurisdiction only.
10. The research journal will be sent by normal post. If the journal is not received by the author of research paper then it will not be responsibility of Editor and Publisher.
11. The Editor-in-Chief is the final authority for publish the paper in any journal under the Head of आकांक्षा..... नवी दिशा आणि आव्हाने.

AKANKSHA..... New Directions & Challenges

आकांक्षा..... नवी दिशा आणि आव्हाने

आकांक्षा..... नई दिशा और आव्हाने

An International Indexed, Refereed, Peer Reviewed, Interdisciplinary,
Multilingual, Multisubject Monthly Research Journal.

Editor-In-Chief

Dr. Mayur B. Lahane

Editorial Board

Dr. Gopal J. Dhole

Dr. Gopalrao Khedkar Mahavidyalay Gadegaon, Telhara.

Dr. Gajanan A. Wagh

Shri Shivaji Science College, Amaravati.

Dr. Suresh T. Kotawani

Savitribai Phule College of Education, Akot

Advisory Committee

Dr. Vikas Singhal
Assistant Regional Director,
Indira Gandhi National Open University,
Nagpur.

Dr. Pranay R. Malviya
Principle,
Dr. Panjabrao Deshmukh College of Law,
Amravati

Dr. S. K. Deshmukh
Principle,
College of Engineering and Technology,
Akola.

Dr. Shubhash S. Gawai
Head, Department of Pol. Science,
Bhartiya Mahavidyalay, Raja Peth,
Amravati.

Dr. Rama R. Fuke
Head, Department of Education
Priyadarshini College of Education, Nagpur.

Prof. Vivek H. Hiware
Head, Department of English
Shri Shivaji College, Akola

Peer Committee

Prof. Ille C. Gebeshuber
Professor of Physics
Vienna University of Technology
Austria (Europe)

Prof. Diana L. Gustafson
Faculty of Medicine,
Memorial University of Newfoundland,
Canada

Dr. Richard Clay
Department of Art History,
University of Birmingham,
Edgbaston UK

Dr. Mutavalli Maizoddin Mainoddin,
Department of Marathi
Ranichananama University
Belgaon Karnataka

Dr. Sanjay M. Ayade
Govt. College of Education Bilaspur,
Chhattisgarh

Dr. Dilip Alone
Department of Marathi
L.T.M. College Wani

Peer Review Committee

Dr. Vilas V. Tayde
Department of Marathi
Shri Shivaji Arts, Comm. & Science College,
Akot.

Dr. Kamlakar Payas
Department of Marathi
Takshashila College, Amravati

Dr. Sunanda K. Reose
Department of Marathi
Shri Pundalik Maharaj Mahavidyalay
Nandura Railway Dist Buldhana

Dr. Dnyaneshwar S. Shambharkar
Head, Department of Pol. Science,
S.B. Mahila Mahavidyalay Mahal,
Nagpur.

Dr. G. L. Gulhane
Head, Department of Education
Sant Gadage Baba Amravati University
Amravati.

Dr. Santosh N. Tade
Head, Department of Economics
Shri Narshing College, Akot

Dr. Basant Tripathi
Head, Department of Hindi,
S.B. Mahila Mahavidyalay Mahal,
Nagpur.

Dr. Suvarna Shinde
Head, Department of English,
Arts & Commerce College for Women
Deopur, Dhule.

Index

Sr. No.	Contents	Page No.
१.	उत्तर भारतीय संगीत में ग्वालियर घराने का उद्भव, विकास एवं विस्तृत गुरु-शिष्य शृंखला - डॉ. आशिक कुमार	1-12
२.	Use Of Beverages For Analysis Of Plasmid And Genomic Dna Among Wild And Mutant Dh5α Host System - Mahathi Gummavajjala	13-17
३.	Home as the Site of Violence: Social and Judicial Ambience and the Role of Curriculum - Mousumi Chowdhury	18-31
4.	Research Progress on Driving Factors of Species Diversity of Grassland Insects - Dr. Mamta R Yeotkar	32-48

1. उत्तर भारतीय संगीत में ग्वालियर घराने का उद्भव, विकास एवं विस्तृत गुरु—शिष्य श्रृंखला

डॉ. आशिक कुमार

अतिथि प्राध्यापक

संगीत एवं ललित कला संकाय,

दिल्ली विश्वविद्यालय, दिल्ली

सार

संगीत के क्षेत्र में ग्वालियर और वहाँ के राज दरबार का महत्वपूर्ण स्थान रहा है। ग्वालियर संगीत परंपरा के संस्थापक राजा मानसिंह तोमर (1486–1516) माने जाते हैं, जिन्हें ध्रुपद गायन शैली का पितामह भी कहा जाता है। तोमर वंश के सूर्यास्त के पश्चात् सिंधिया राजवंश का ग्वालियर में आगमन हुआ। श्रीमंत दौलतराव (1794–1827) के दरबार में तथा श्रीमंत जयाजीराव सिंधिया (1843–1886) के संरक्षण में ही ग्वालियर की ख्याल गायन शैली जन्मी तथा विकसित हुई। ग्वालियर घराने की नींव डालने का श्रेय नत्थन पीरबख्श को जाता है। इन्होंने अपने तीनों पोतों हस्सू—हद्दू—नत्थू खाँ को संगीत की विधिवत तालीम दी।

हस्सू—हद्दू ने उस समय के दरबारी गायक बड़े मोहम्मद खाँ की गायकी की खूबियों तथा अपनी ख्याल गायकी दोनों को मिश्रण कर एक नयी गायकी का निर्माण किया जिसे अष्टांग गायकी का नाम दिया गया।

हस्सू—हद्दू—नत्थू खाँ ने अपने संगीतोपासना से ग्वालियर परंपरा को चरम सीमा तक पहुँचाया। देश के कोने—कोने से संगीत प्रेमी उनसे शिक्षा लेते रहे और उनकी एक विशाल शिष्य—परंपरा निर्मित हुई।

ग्वालियर घराने की उत्पत्ति, विकास एवं विस्तृत गुरु—शिष्य श्रृंखला

को विस्तार से समझने के लिए प्राथमिक तथा द्वितीयक स्रोत का प्रयोग किया गया। प्राथमिक स्रोत के अंतर्गत ग्वालियर घराने के प्रतिष्ठित कलाकारों का साक्षात्कार लिया गया। द्वितीयक स्रोत के तहत ग्वालियर घराने से संबंधित कई पुस्तकों, आलेखों का भी अवलोकन किया गया तथा उससे संबंधित जानकारीयाँ प्राप्त की गई।

मुख्य शब्द — ग्वालियर घराना, मानसिंह तोमर, सिंधिया राजवंश, नत्थन पीरबख्शा, हस्सू-हद्दू-नत्थू खाँ।

शोध पत्र

सिंधिया वंश के अध्ययन से हमें यह प्रमाणित होता है कि ग्वालियर घराने की स्थापना, ध्रुपद से ख्याल शैली का प्रादुर्भाव, अनेक महान संगीतज्ञों को आश्रय देना आदि में सिंधिया वंश के महाराजाओं का महत्वपूर्ण योगदान रहा है।

ग्वालियर घराने का उद्भव, विकास एवं उसकी विस्तृत गुरु-शिष्य शृंखला

ग्वालियर घराने की ख्याल गायकी की परंपरा की शुरुआत लखनऊ से होती है। गुलाम रसूल लखनऊ के बहुत मशहूर कव्वाल थे जो कव्वाल बच्चों के घराने से संबंध रखते थे।

दिल्ली आने से पहले गुलाम रसूल लखनऊ के नवाब आसिफुद्दौला के दरबार में नायक (जो उच्च कोटि के ध्रुपद गायक भी थे) के पद पर नियुक्त थे। गुलाम रसूल ने अनेक ख्याल गीतों की भी रचना की और उसका प्रचार-प्रसार भी किया। इनके गाने से बुलबुल पक्षी आ जाते थे, ऐसा बुजुर्गों का कहना है। इन्हीं के पुत्र गुलाम नबी जो टप्पा गायन शैली के प्रवर्तक थे और शोरी मियाँ के नाम से प्रसिद्ध हुए।¹

गुलाम रसूल के दो प्रमुख शिष्य थे —

(1) शक्कर खाँ (2) मक्खन खाँ।

शक्कर खाँ के सुपुत्र बड़े मोहम्मद खाँ थे जो लखनऊ के कव्वाल खानदान के ख्याति प्राप्त कलाकार थे। शक्कर खाँ और मक्खन खाँ में

व्यवसायिक प्रतिद्वंद्विता थी। शक्कर खाँ ज़रा तीखे मिजाज़ के थे तथा मक्खन खाँ बड़े ही नम्र स्वभाव के थे।²

मक्खन खाँ को गुलाम रसूल से विशेष तालीम मिली थी और उन्होंने गुलाम रसूल के शिष्यों में सबसे अधिक ख्याति अर्जित की थी। शक्कर और मक्खन खाँ के इन आपसी ईर्ष्या के कारण मक्खन खाँ के परिवार को लखनऊ छोड़कर ग्वालियर आना पड़ा।³

मक्खन खाँ के पुत्र थे – नत्थन पीरबख्श जो एक उच्च कोटि के गायक एवं शिक्षक थे। इनके ख्याल गायकी में ध्रुपद अंग की गंभीरता और गहराई की स्पष्ट झलक दिखाई पड़ती थी। इन्हें ग्वालियर में महाराज दौलतराव सिंधिया के दरबार में आश्रय मिला था।

नत्थन पीरबख्श के दो पुत्र थे – कादरबख्श और पीरबख्श। कादरबख्श के तीन पुत्र थे – हस्सू, हद्दू और नत्थू खाँ। पीरबख्श की कोई संतान नहीं थी। ऐसा कहा जाता है कि शक्कर खाँ और उनके सुपुत्र बड़े मोहम्मद खाँ के चाहने वालों ने कादरबख्श पर जादू-टोना करके उन्हें समाप्त करवा दिया। कादरबख्श युवावस्था में ही स्वर्गवासी हो गये।⁴

कादरबख्श की मृत्यु के बाद उनके सुपुत्र हस्सू-हद्दू एवं नत्थू खाँ को अपने दादाजी नत्थन-पीरबख्श से संगीत की विधिवत तालीम प्राप्त हुई। इधर बड़े मोहम्मद खाँ की गायकी से प्रभावित होकर तथा हस्सू-हद्दू खाँ के अल्पायु होने की वजह से महाराज दौलतराव सिंधिया ने बड़े मोहम्मद को राज्य गायक नियुक्त किया।

महाराज को बड़े मोहम्मद खाँ की तानें विशेष रूप से पसंद थी। वे चाहते थे कि हस्सू-हद्दू-नत्थू खाँ के गले में भी ये बारीकियाँ आए। इसलिए महाराज ने नत्थन पीरबख्श से हस्सू-हद्दू-नत्थू खाँ को बड़े मोहम्मद खाँ की गायकी का अनुकरण करवाने के लिए कहा। इसके लिए महाराज ने खुद एक ऐसी व्यवस्था की जिससे ये तीनों बंधु बड़े मोहम्मद खाँ का गाना सुन सवेंफ। छिपकर लगभग 4-6 महीने तक तीनों बंधुओं ने बड़े मोहम्मद खाँ

की गायकी सुनी और उसपर खूब अभ्यास भी किया।⁵

इस प्रकार हस्सू-हद्दू-नत्थू खाँ ने बड़े मोहम्मद खाँ की गायकी की बारीकियों को अपने ख्याल गायकी में मिलाकर एक अनूठी गायकी पैदा की जिसने आगे चलकर ग्वालियर घराने और उसकी ख्याल गायकी को जन्म दिया।

इस प्रकार हम यह कह सकते हैं कि ग्वालियर घराने की नींव डालने का श्रेय नत्थन-पीरबख्श को जाता है। इन्होंने ही अपने पौत्र हस्सू-हद्दू-नत्थू खाँ को ख्याल गायकी की विधिवत तालीम दी, जिन्होंने आगे चलकर अपनी एक अलग गायकी बनाई और ग्वालियर घराने और उसकी गुरु-शिष्य परंपरा को आगे बढ़ाया। नत्थन पीरबख्श से आगरा के घग्घे खुदाबख्श ने भी ख्याल गायन शैली की तालीम प्राप्त की थी। बाद में बड़े मोहम्मद खाँ ने आपसी ईर्ष्या-द्वेष के कारण दरबार छोड़ दिया और रीवा दरबार में चले गये। पिफर महाराज दौलतराव सिंधिया ने हस्सू-हद्दू-नत्थू खाँ को ग्वालियर का राजगायक नियुक्त कर दिया।

हस्सू खाँ एवं उनकी विस्तृत गुरु-शिष्य परंपरा-

हस्सू खाँ महाराज दौलतराव सिंधिया के दरबारी गायक थे। अपने पिता कादरबख्श की असामयिक मृत्यु के कारण हस्सू खाँ ने संगीत की विधिवत तालीम अपने दादा नत्थन पीरबख्श से प्राप्त की। साथ ही साथ हस्सू खाँ ने बड़े मोहम्मद खाँ की गायकी की बारीकियों को अपने गायकी में मिलाकर ख्याल गायन शैली को एक नया रूप भी प्रदान किया।

हस्सू खाँ के एक पुत्र थे जिनका नाम गुलाम इमाम खाँ था। गुलाम इमाम खाँ भी अपने पिता की तरह उस समय के प्रख्यात ख्याल गायक थे। हस्सू खाँ ने गुरु-शिष्य परंपरा के तहत अनेक शिष्य तैयार किये एवं उन्हें मुक्तहस्त से ग्वालियर की ख्याल गायन शैली को सिखाया।

हस्सू खाँ के सभी शिष्य उस समय के प्रख्यात ख्याल गायक थे, परंतु उनमें से विशेष प्रसिद्ध वासुदेव जोशी एवं देवजी बुवा परांजपे को मिली थी।

वासुदेव बुवा जोशी जी की विस्तृत गुरु—शिष्य परंपरा में जिन्होंने सबसे अधिक ख्याति प्राप्त की उनका नाम था—गायनाचार्य बालकृष्ण बुवा इचलकरंजीकर।

पंडित विद्याधर व्यास जी के अनुसार — पंडित बालकृष्ण बुवा इचलकरंजीकर जी ने ही महाराष्ट्र में ग्वालियर गायकी को लाया। वे महाराष्ट्र के इचलकरंजी नामक गाँव के निवासी थे। इन्हें संगीत का बहुत शौक था। वे 4 महीने तक पैदल की यात्रा करके अपने गाँव से ग्वालियर पहुँचे। ग्वालियर में इन्होंने वासुदेव जोशी जी से संगीत की तालीम ली। उसके बाद वे ग्वालियर से महाराष्ट्र वापस चले गये और वहीं रहकर संगीत का प्रचार—प्रसार किया तथा अनेक शिष्य भी तैयार किये। वे विभिन्न संस्थानों में भी दरबारी गायक के पद पर कार्यरत रहे।⁶

पं. बालकृष्ण बुवा इचलकरंजीकर (1849—1926) के प्रमुख शिष्य —

- | | |
|--------------------------|---------------------------|
| (1) गुंडो बुवा इंगले | (2) विष्णु दिगंबर पलुस्कर |
| (3) अनंत मनोहर जोशी | (4) नीलकंठ बुवा जंगम |
| (5) वामणबुवा चाफेकर | (6) तातोबा पेंडसे |
| (7) अण्णबुआ (पुत्र) | (8) यशवंत बुवा मिराशी |
| (9) भाटे बुवा | (10) काले बुवा |
| (11) कृष्णय्या बीजापुरकर | (12) चंद्रबुवा बापट |
| (13) सखाराम म्हैसकर। | |

गुंडोबुआ के प्रमुख शिष्य —

- | | |
|----------------------------|------------------|
| (1) केशव बुआ इंगले (पुत्र) | (2) श्रीधर बुवा। |
|----------------------------|------------------|

अनंत मनोहर जोशी के प्रमुख शिष्य —

- | | |
|-----------------------------------|----------------|
| (1) गोडबोले बुवा | (2) गोखले बुवा |
| (3) शुक्ल बुवा | (4) देव बुवा |
| (5) पंडित गजानन राव जोशी (पुत्र)। | |

नीलकंठ बुवा जंगम के प्रमुख शिष्य —

(1) मल्लिकार्जुन मंसूर (2) बसवराज राजगुरु ।

यशवंत बुवा मिराशी के प्रमुख शिष्य –

- | | |
|--------------------|-----------------------------------|
| (1) उत्तरकर बुवा | (2) पराडकर बुवा |
| (3) पंडितराव नगरकर | (4) गंगुबाई इनामदार |
| (5) यशवंत ही. जोशी | (6) सी.आर. व्यास |
| (7) दयानंद कामथ | (8) मालिनी जोशी |
| (9) शंकरराव पवार | (10) विष्णु मिराशी । ⁷ |

पंडित बालकृष्ण बुवा इचलकरंजीकर जी के सभी शिष्यों में जिन्होंने सबसे अधिक ख्याति प्राप्त की वो थे – पंडित विष्णु दिगंबर पलुस्कर जी ।

संगीत की तालीम पूर्ण करने के बाद इन्होंने सबसे पहले महाराष्ट्र और पिनर गुजरात की यात्रा की। इस दिशा में उन्होंने सबसे पहला काम यह किया कि गीतों में से श्रृंगार रस के अश्लील शब्दों को हटाकर भक्ति और करुण रस को स्थान दिया ।⁸

उन्होंने 5 मई 1901 को लाहौर में सर्वप्रथम गांधर्व महाविद्यालय की स्थापना की। लाहौर के बाद 1908 में वे मुंबई आ गए, जहाँ उन्होंने गंधर्व महाविद्यालय की एक और शाखा खोली ।

पं. विष्णु दिगंबर पलुस्कर के प्रमुख शिष्य –

- | | |
|------------------------------|-------------------------------|
| (1) श्रीकृष्ण हेल्लेकर | (2) वि.ए. कशालकर |
| (3) केशवराव दातार | (4) धुंडीराज पलुस्कर |
| (5) शंकरराव व्यास | (6) बी.आर. देवधर |
| (7) बाबूराव गोखले | (8) शंकरराव बोडस |
| (9) गोविंदराव पटवर्धन | (10) नारायण मोरेश्वर खरे |
| (11) श्रीमती अंबूताई पटवर्धन | (12) ओंकारनाथ ठाकुर |
| (13) नारायण राव व्यास | (14) विनायकराव पटवर्धन |
| (15) वामनराव ठकार | (16) लक्ष्मणराव बोडस |
| (17) रघुनाथ राव पटवर्धन | (18) श्रीमती अनुसूयाबाई आठवले |

(19) भगवती प्रसाद त्रिवेदी (20) वामनराव सांडोलीकर

(21) चिंतामणराव पलुस्कर ।

ओंकारनाथ ठाकुर उच्चकोटि के संगीतज्ञ, संगीत के अनेक ग्रंथों के रचनाकार तथा शिक्षक थे। वे कहा करते थे, फ़जो संगीतकार सुर की भाषा नहीं जानता, वह कलाकार नहीं बन सकता। जैसा राग हो, वैसा ही गाना चाहिए।⁹ उन्हें संगीत मार्तण्ड (1940), संगीत—सम्राट (1993), संगीत नाटक अकादमी पुरस्कार और पद्मश्री (1955) से अलंकृत किया गया।

ओंकारनाथ ठाकुर के प्रमुख शिष्य —

- | | |
|---------------------------------------|------------------------------|
| (1) पंडित बलवंतराय भट्ट | (2) पंडित कनकराय त्रिवेदी |
| (3) एम.एस. गोपालकृष्ण अय्यर | (4) श्रीमती फ़िरोज के दस्तूर |
| (5) डॉ. कृ. प्रेमलता शर्मा | (6) डॉ. श्रीमती एम. राजम |
| (7) डॉ. प्रदीप कुमार दीक्षित इत्यादि। | |

पं. विनायक राव पटवर्धन जी ने अनेक बंदिशों की रचना की। वे गायन में निरर्थक बोलों की जगह काव्यात्मक बंदिशें चुनते थे। इनके तराने बहुत ही तैयार आड़ी लय से पूर्ण तथा बंदिशपूर्ण होते थे। इन्होंने राग—विज्ञान, बाल—संगीत, तबला मृदंग वादन प(ति आदि पुस्तकें तथा गुरु विष्णु दिगंबर पलुस्कर की जीवन कथा भी लिखीं। 1972 में उन्हें पद्मभूषण से सम्मानित किया गया।¹⁰

विनायकराव पटवर्धन के प्रमुख शिष्य —

- | | |
|---|---------------------------------|
| (1) डी.वी. पलुस्कर | (2) विनयचंद्र मौदगल्य |
| (3) नारायणराव पटवर्धन (पुत्र) | (4) वि.रा. आठवले |
| (5) स.भ. देशपांडे | (6) विठ्ठलराव घाटे |
| (7) मुकुंदराव गोखले | (8) रामचंद्रराव पटवर्धन (पुत्र) |
| (9) सुनंदा पटनायक | (10) श्रीमती कमल केलकर |
| (11) शंकरराव कोल्हटकर | (12) वंसतराव गोसावी |
| (13) मधुसूदन पटवर्धन (पुत्र) इत्यादि। ¹¹ | |

नारायणराव व्यास के प्रमुख शिष्य —

- (1) वसंतराव राजोपाध्ये (2) पं. विद्याधर व्यास हैं।

बी.आर. देवधर के प्रमुख शिष्य —

- (1) पं. कुमार गंधर्व (2) श्याम गोगटे (3) लीला अडसूले।

उपर्युक्त सभी शिष्यों ने पूरे विश्वभर में संगीत का प्रचार—प्रसार करने में महत्वपूर्ण भूमिका निभाई।

हददू खाँ एवं उनकी विस्तृत गुरु—शिष्य परंपरा

हददू खाँ ग्वालियर परंपरा के प्रख्यात ख्याल गायक थे एवं हस्सू खाँ के भाई भी थे। इन्होंने भी अपने संगीत की विधिवत तालीम अपने दादा नथन पीरबख्श से प्राप्त की। साथ ही साथ हददू खाँ ने भी बड़े मोहम्मद खाँ के गायकी की बारीकियों को अपने गायकी में मिलाकर एक अनूठी ख्याल गायका का निर्माण किया। अपने भाई हस्सू खाँ की तरह, हददू खाँ भी ग्वालियर दरबार में नियुक्त थे।

हददू खाँ ने दो शादियाँ की थी। पहली पत्नी से उनके दो पुत्र थे — (1) छोटे मोहम्मद खाँ (2) रहमत खाँ। दूसरी पत्नी से उनके दो लड़कियाँ थी एक का विवाह इनायत हुसैन खाँ से हुआ था और दूसरी का विवाह बन्दे अली खाँ से हुआ था।¹²

बंदे अली खाँ हददू खाँ के शिष्य भी थे तथा वे बीन के बादशाह माने जाते थे। एक बार दरबार में उन्होंने चुन्ना (जो उस समय ग्वालियर की मशहूर गायिका थी) को मांग लिया और बाद में चुन्ना को लेकर बंबई चले गये।

हददू खाँ के प्रमुख शिष्य —

- | | |
|------------------------------|----------------------------|
| (1) बड़े बालकृष्ण बुवा (अंध) | (2) रामभाऊ सावेरकर (अंध) |
| (3) बंदे अली खाँ | (4) छोटे मोहम्मद खाँ |
| (5) रहमत खाँ | (6) इनायत हुसैन खाँ |
| (7) विष्णुपंत छत्रे | (8) बन्ने खाँ (मानस पुत्र) |
| (9) अलीबख्श | (10) बालासाहेब गुरुजी। |

उपर्युक्त सभी शिष्यों में छोटे मोहम्मद खाँ, रहमत खाँ, बंदे अली खाँ, इनायत हुसैन खाँ को सबसे अधिक प्रसिद्धि प्राप्त हुई।

नत्थू खाँ एवं उनकी विस्तृत गुरु-शिष्य परंपरा

नत्थन पीरबख्खा के दो पुत्र थे – कादरबख्खा और पीरबख्खा। कादरबख्खा के तीन पुत्र थे—हस्सू, हद्दू एवं नत्थू खाँ। पीरबख्खा को कोई संतान नहीं था, इसलिए उन्होंने नत्थू खाँ को गोद ले लिया था।

नत्थू खाँ ने हस्सू-हद्दू खाँ के साथ ही अपने संगीत की विधिवत तालीम नत्थन पीरबख्खा से प्राप्त की। नत्थू खाँ महाराजा जयाजीराव सिंधिया के संगीत गुरु भी थे। नत्थू खाँ के पास तराना एवं त्रिवट का अपार भंडार था।

नत्थू खाँ को कोई संतान नहीं था, इसलिए उन्होंने उस्ताद निसार हुसैन खाँ को गोद ले लिया था और उन्हें संगीत की विद्या अपने मुक्तहस्त से प्रदान की।

नत्थू खाँ के प्रमुख शिष्य –

- (1) निसार हुसैन खाँ (2) नब्बू खाँ
- (3) जयाजीराव सिंधिया।

इनमें से निसार हुसैन खाँ को सर्वाधिक प्रसिद्धि प्राप्त हुई।

निसार हुसैन खाँ की शिष्य परंपरा

निसार हुसैन खाँ विलक्षण प्रतिभा के ख्याल गायक थे। उन्होंने संगीत की तालीम अपने दत्तक पिता नत्थू खाँ से प्राप्त की। नत्थू खाँ के मृत्यु (1884/1870) के पश्चात् निसार हुसैन खाँ को श्रीमंत जयाजीराव सिंधिया के दरबार में नियुक्त हुए।

निसार हुसैन खाँ को हजारों ख्याल और तरानें कंठस्थ थे। इसी विलक्षण स्मरणशक्ति के कारण इन्हें 'कोठी वाले गवई' की संज्ञा भी प्राप्त थी।¹³

निसार हुसैन खाँ के प्रमुख शिष्य –

- | | |
|-------------------|------------------------|
| (1) शंकरराव पंडित | (2) एकनाथ पंडित |
| (3) गणपतराव पंडित | (4) रामकृष्णबुवा वझे |
| (5) मेंहदी हुसैन | (6) नजीर खाँ (जोधपुर)। |

एकनाथ पंडित के प्रमुख शिष्य –

- | | |
|-----------------------|--------------------------|
| (1) शरदचंद्र आरोलकर | (2) भैय्या साहेब मालवणकर |
| (3) डॉ. मोघे (मुंबई)। | |

एकनाथ पंडित जी बीनकार भी थे। वे मुंबई में खार में अपने शिष्य डॉ. मोघे के यहाँ रहते थे। इन्होंने बीन की शिक्षा उस्ताद बंदे अली खाँ से प्राप्त की।

राकृष्णबुवा वझे के प्रमुख शिष्य –

- | | |
|-------------------------------------|-------------------------|
| (1) केशवराव भोंसले | (2) बापू साहेब पेंढारकर |
| (3) मास्टर दीनानाथ | (4) गुरुराव देशपांडे |
| (5) शिवरामबुवा वझे (पुत्र) इत्यादि। | |

निसार हुसैन खाँ के सभी शिष्यों में शंकरराव पंडित जी को असाधारण ख्याति प्राप्त हुई।

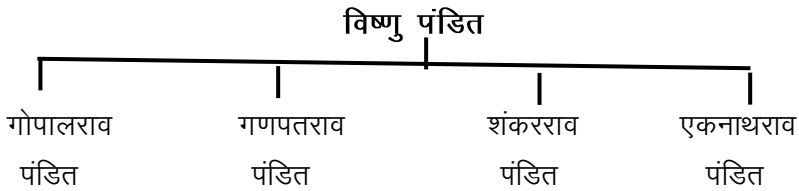
पंडित परिवार का ग्वालियर आगमन तथा शंकर पंडित जी की शिष्य-परंपरा

पंडित रामचंद्र चिंचवड़कर पूना (महाराष्ट्र) के पास चिंचवड़ नामक जगह के निवासी थे। वे संस्कृत के प्रकांड विद्वान तथा वेद शास्त्र निपुण थे। साथ ही साथ वे बहुत बड़े कीर्तनकार भी थे।

ऐसा कहा जाता है कि सिंधिया वंश के ग्वालियर पर साम्राज्य स्थापित करने के बाद बहुत सारे परिवार महाराष्ट्र से ग्वालियर आए थे।

पं. रामचंद्र चिंचवड़कर भी लष्कर (ग्वालियर) आ गए। इनके पुत्र विष्णुशास्त्री चिंचवड़कर बहुत बड़े संस्कृत के विद्वान तथा कीर्तनकार भी थे। बाद में इनका उपनाम शास्त्री से बदलकर पंडित हो गया। तब से ये विष्णु पंडित के नाम से प्रसिद्ध हो गये।

ग्वालियर में विष्णु पंडित का संबंध नत्थन पीरबख्श से स्थापित हुआ।
विष्णु पंडित के चार पुत्र थे।



ये चारों पुत्र विष्णु पंडित जी के साथ कीर्तन में भाग लेते थे। कोई तबला बजाता, कोई पखावज, कोई हारमोनियम तो कोई तानपुरा। विष्णु पंडित जी को अपने बेटों में सांगीतिक प्रतिभा की झलक दिखाई पड़ने लगी। विष्णु पंडित जी ने हद्दू ख़ाँ से प्रार्थना की कि वे उनके चारों सुपुत्र को गाना सिखाए।

हद्दू ख़ाँ ने चारों सुपुत्रों का गाना सुना। शंकरराव पंडित जी की आवाज़ में जो लपक थी, वो हद्दू ख़ाँ को बहुत पसंद आई। हद्दू ख़ाँ ने चारों सुपुत्रों की प्रतिभा को देखकर सिखाने की स्वीकृति दे दी। हद्दू ख़ाँ उस समय ग्वालियर में चावड़ी बाज़ार में रहते थे। अपने बाड़े के तलघर में ही वे रियाज़ किया करते थे। वहीं पर पंडित बंधुओं की संगीत की तालीम शुरू हुई।

शंकर राव पंडित (1862–1917) की शिष्य परंपरा

विलक्षण प्रतिभा के धनी पं. शंकरराव पंडित जी ने सर्वप्रथम उ. हद्दू ख़ाँ और फिर उनके भाई नत्थू ख़ाँ के दत्तक पुत्र उ. निसार हुसैन ख़ाँ से संगीत की शिक्षा ग्रहण की। टप्पा गायन की तालीम उन्होंने देवजी बुआ से ली। मधुर आवाज़ और प्रभावशाली तानों के धनी पं. शंकरराव पंडित एक ही राग को विविध प्रकार से घंटों तक गाने में अत्यंत कुशल थे। इनके सुयोग्य शिष्यों में इनके पुत्र कृष्णराव पंडित, राजाभैया पूँछवाले, काशीनाथ मुले और बालाभाऊ उमडेकर आदि के नाम उल्लेखनीय हैं।

निष्कर्ष — हिन्दुस्तानी शास्त्रीय संगीत के ख्याल शैली के

प्रचार—प्रसार में ग्वालियर घराने का महत्वपूर्ण योगदान है। ग्वालियर घराने के संस्थापक नत्थन पीरबख्श की विस्तृत गुरु—शिष्य शृंखला के द्वारा विभिन्न घरानों का निर्माण हुआ। ग्वालियर घराने की शैली तथा तकनीक का प्रयोग कर सभी कलाकारों ने शास्त्रीय संगीत की विधा को आगे बढ़ाया।

संदर्भ ग्रंथ सूची

1. भारतीय संगीत के अमर साधक कृष्णराव शंकर पंडित, पं. लक्ष्मणकृष्ण राव पंडित, पृ.सं.—3
2. वही, पृ.सं.—4
3. संगीत शास्त्रकार व कलावंत यांचा इतिहास, लक्ष्मण दत्तात्रेय जोशी, पृ.सं.—12
4. भारतीय संगीत के अमर साधक कृष्णराव शंकर पंडित, पं. लक्ष्मणकृष्ण राव पंडित, पृ.सं.—4
5. वही, पृ.सं.—4
6. ग्वालियर घराना, बैठक सीरिज, दूरदर्शन, दिल्ली
7. ग्वालियर की संगीत परंपरा, डॉ. अरुण बांगरे, पृ.सं.—214—215
8. वही, पृ.सं.—14
9. ग्वालियर घराना, अरुण बांगरे, पृ.सं.—14, 22
10. वही, पृ.सं.—14
11. ग्वालियर की संगीत परंपरा, अरुण बांगरे, पृ.सं.—216—217
12. वही, पृ.सं.—218
13. वही, पृ.सं.—221

2. Use Of Beverages For Analysis Of Plasmid And Genomic Dna Among Wild And Mutant Dh5 α Host System

Mahathi Gummavajjala

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation,
Guntur, Andhra Pradesh, India.

Introduction :

Most vectors are hybrids between bacterial and yeast sequences, possessing an origin of replication for *E. coli* and selection markers [1]. The plasmids also contain a multiple cloning site (MCS)[2]. To successfully perform molecular genetic techniques, it is essential to have a full understanding of the properties of the various *Escherichia coli* host strains commonly used for the propagation and manipulation of recombinant DNA[3]. *E. coli* is an enteric rod-shaped Gram-negative bacterium with a circular genome of 4.6 Mb[4]. It was originally chosen as a model system because of its ability to grow on chemically defined media and its rapid growth rate[5]. In rich media, during the exponential phase of its growth, *E. coli* doubles every 20–30 min; thus, during an overnight incubation period, single selected organisms will double enough times to yield

a colony on an agar plate or 1–2 billion cells per milliliter of liquid media[6-8]. any useful strains are available through the American Type Culture Collection (ATCC) and the *E. coli* Genetic Stock Center at Yale, as well as from commercial suppliers such as Stratagene, Fermentas, Promega, Novagen, Invitrogen and New England Biolabs. *E. coli* is a popular host for the overexpression of recombinant proteins[9]. There are a number of factors that can influence protein yields and careful strain choice can greatly improve the chance of successful expression[10].

Materials & Methods:-

Plasmid preparation

Single cell colonies were picked and streaked out on selective LB-agar plates and further transferred to 2 mL selective LB-medium for 24 h at 37°C[11]. The master LB-agar plate was stored at 4°C, whereas the overnight culture was used for plasmid Mini-Prep (GeneJET Plasmid, fermentas) as per the manufacturer's instructions[12]. Plasmids were eluted in 40 µL 1 mM Tris/HCl pH 8, or sterile ddH₂O.

Restriction Analysis

Analytical restriction digestions with specific restriction endonucleases (supplied by Fermentas or New England BioLabs) were performed for verifying the expected plasmid by means of the DNA-fragments

analyzed with gel electrophoresis[13-14]. After visualizing the correct band pattern for the estimated plasmid size within one or more clones, the respective clone was used for inoculation of approximately 100 mL selective LB-medium and incubated overnight at 37°C under shaking[15].

Results And Discussions :

Restriction Analysis

In this gel plasmid and genomic DNA is seen effected by the different types of beverages. By doing this we observed that only the Pepsi and coke was affected so coke and Pepsi was under gone restriction digestion for specific identity [figure-1A]. In this gel genomic and genomic DNA is seen effected by the different types of beverages. By doing this we observed that only the Pepsi and coke was affected so coke and Pepsi was under gone restriction digestion for specific identity [figure-1B]. We have observed only digestion in the Pepsi EcoRI and BamHI enzymes

Quantification of gel band

Analysis of ECL image was performed using the public domain Image J program (developed at the National Institutes of Health and available at <http://rsb.info.nih.gov/ij/>), using the “measure” functions. Results of the analysis is a value for each band which is proportional to

the Integrated Density Value (IDV) of the band. All images were treated in a way that avoids loss of information.

Conclusion :

With the choice of several beverages in the isolation of genomic and plasmid DNA of bacterial cells, the choice of Pepsi as beverage proved that the recovery of DNA is highly adequate and however the role of these beverages to be further studied to understand the recovery process and any changes or modifications to be known if various other recombinant technology methods are carried out.

Conflict of interest

The authors declare that there are no conflicts of interest exist among them regarding the publication of this paper.

Reference:-

1. Sikorski RS, Hieter P. A system of shuttle vectors and yeast host strains designed for efficient manipulation of DNA in *Saccharomyces cerevisiae*. *Genetics*. 1989 May 1;122(1):19-27. Jobling MG, Holmes RK. Construction of vectors with the p15a replicon, kanamycin resistance, inducible lacZ alpha and pUC18 or pUC19 multiple cloning sites. *Nucleic Acids Res*. 1990;18(17):5315.
2. Martinez E, Bartolomé B, de la Cruz F. pACYC184-derived cloning vectors containing the multiple cloning site and lacZa reporter gene of pUC8/9 and pUC18/19 plasmids. *Gene*. 1988;68(1):159-62.
3. Copeland NG, Jenkins NA, Court DL. Recombineering: a powerful new tool for mouse functional genomics. *Nat Rev Genet*. 2001;2(10):769-79.
4. Chan KG, Wong CS, Yin WF, Sam CK, Koh CL. Rapid degradation of N-3-oxo-acylhomoserine lactones by a *Bacillus cereus* isolate from Malaysian rainforest soil. *Antonie Van Leeuwenhoek*. 2010;98(3):299-305.

5. Colter DC, Class R, DiGirolamo CM, Prockop DJ. Rapid expansion of recycling stem cells in cultures of plastic-adherent cells from human bone marrow. *Proc Natl Acad Sci US A*. 2000;97(7):3213-8.
6. Funchain P, Yeung A, Stewart JL, Lin R, Slupska MM, Miller JH. The consequences of growth of a mutator strain of *Escherichia coli* as measured by loss of function among multiple gene targets and loss of fitness. *Genetics*. 2000;154(3):959-70.
7. Shi H, Colavin A, Lee TK, Huang KC. Strain Library Imaging Protocol for high-throughput, automated single-cell microscopy of large bacterial collections arrayed on multiwell plates. *Nat Protoc*. 2017;12(2):429-38
8. Degnen GE, Cox EC. Conditional mutator gene in *Escherichia coli*: isolation, mapping, and effector studies. *J Bacteriol*. 1974;117(2):477-87.
9. Swarts DC, Jore MM, Westra ER, Zhu Y, Janssen JH, Snijders AP, Wang Y, Patel DJ, Berenguer J, Brouns SJ, van der Oost J. DNA-guided DNA interference by a prokaryotic Argonaute. *Nature*. 2014;507(7491):258-61.
10. Daly R, Hearn MT. Expression of heterologous proteins in *Pichia pastoris*: a useful experimental tool in protein engineering and production. *J Mol Recognit*. 2005;18(2):119-38.
11. Römling U, Sierralta WD, Eriksson K, Normark S. Multicellular and aggregative behaviour of *Salmonella typhimurium* strains is controlled by mutations in the *agfD* promoter. *Mol Microbiol*. 1998;28(2):249-64.
12. Ghosal A, Vitali A, Stach JE, Nielsen PE. Role of *SbmA* in the uptake of peptide nucleic acid (PNA)-peptide conjugates in *E. coli*. *ACS Chem Biol*. 2013 Feb 15;8(2):360-7.
13. Engler C, Kandzia R, Marillonnet S. A one pot, one step, precision cloning method with high throughput capability. *PloS one*. 2008;3(11):e3647.
14. Hertwig S, Klein I, Lurz R, Lanka E, Appel B. PY54, a linear plasmid prophage of *Yersinia enterocolitica* with covalently closed ends. *Mol Microbiol*. 2003;48(4):989-1003.
15. Chauhan N, Hatlem D, Orwick-Rydmark M, Schneider K, Floetenmeyer M, van Rossum B, Leo JC, Linke D. Insights into the autotransport process of a trimeric autotransporter, *Yersinia Adhesin A* (YadA). *Mol Microbiol*. 2019;111(3):844-62.

3. Home as the Site of Violence: Social and Judicial Ambience and the Role of Curriculum

Mousumi Chowdhury

Sinnar College Aurangabad

As an ideological state apparatus, family, the fundamental unit of a patriarchal society, perpetrates violence against women and becomes the most effective tool to perpetuate the subordination of women. Till the mid 20th century domestic violence was viewed as a private family matter that need not involve the Govt. or criminal justice. But off late the Govt. has admitted barefaced that domestic violence is a serious deterrent to development of women and in 2005 India Govt. has framed a law to protect women from it. The umbrella term Domestic Violence refers to all sorts of physical, verbal, sexual, psychological and emotional violence against women (perpetrated both by women and men) living in a domestic relationship. Research centre for women's studies, SNDT, Mumbai elaborates the term as

“... All acts perpetrated in the private domain of the home to secure women's subordination and which is

rationalized and sanctioned by the prevailing gender ideology”

Domestic Violence act, 2005 redefines violence against women in their intimate relationship and marks almost a shift in the paradigm of violence, since, the earlier criminal law left outside its ambit the non-physical forms of violence of everyday life and the present law prohibiting domestic violence terms any misdeed as violence that stands in the way of enjoying basic human rights. The insidious nature of domestic violence has been documented across nations and cultures worldwide. The Vienna Accord of 1994 and the Beijing Declaration and the platform for Action (1995) have acknowledged it as a serious social nuisance. The United Nations Committee on Convention For Elimination for All Forms of Discrimination Against Women (CEDAW) in its General Recommendation No XII (1989) has recommended that state parties should act to protect women against violence of any kind especially that occurring within the family.

Home as the Site of Violence :

Oppression of a woman in the very sanctuary of her own home was seriously undertheorized until feminists addressed it. The wider intellectual sphere also consciously evaded the issue. Though liberal humanists like Rammohun Roy voiced his protest against gender

inequality and oppression in the intimate relationship, the muffled voices of terror and trauma did not reach beyond the threshold. In spite of its wide prevalence, it remained largely invisible in public domain. Domestic Violence dates back to the establishment of family system. Our epics cite innumerable cases of domestic violence. In The Mahabharata we see even before her advent into this world Kunti became a victim of violence, for, she was fated to be „disowned“ by her own father. In the home of her foster father, the father himself led her to a crisis by entrusting her with the charge of highly inflammable Durbasa. Pleased Durbasa’s blessing also was a curse in disguise. Throughout her life she was exploited by males, mostly, the members of her own family. Sakuntala, Satyabati, Amba, Ambika, Ambalika all were victims of violence and in many cases the victimized herself became the victimizer in later life.

In the 19th century India also the basic principle of organizing family life and determining the right conduct for women was shaped by tradition and epics. The Nationalists advocated strongly the essential distinction between the role of men and women in terms of material and spiritual virtues and home became the principal site for expressing the spiritual quality of the national culture and women the protector of it. Creating the binary of

home/world, material/spiritual Indian Nationalists proclaimed the superiority of the East over West. Though in the 19th century education became a project for enlightenment of women, the curriculum was feminine and as Partha Chatterjee says, it was nothing but a project of legitimizing women's subordination under new patriarchy. In 1870s, Bankimchandra, the most eminent *littérateur* of Bengal in the late 19th century criticized this hegemonic male dominated nationalist ideology. He said,

“Self interested men are mindful of the improvement of women only to the extent that it furthers their self interest; not for any other reason ...”

A peep into the autobiographies of 19th century „educated women“, more or less a kind of social history of the 19th century Bengal, reveals the extent of deprivation. Shanta Nag in her *‘Purbasmriti’* reveals how she „acquired a skill, namely the ability to read and write , that was meant for „others“. Rassundari's (1809-1900) stories reveal how her movement was restricted, self expressions were monitored and she was forced to live like a „bird in the cage“. An excerpt from her autobiography would reveal how she laments for her daughterhood.

“I tried in so many ways to go and see my mother, but I was not fated to do so. This is not a matter of small regret to me. Oh Lord, why did you give birth to me as a

human being? Compared to all the birds and beasts and other inferior creatures in this world, it is a rare privilege to be granted a human birth. And yet, despite this privilege, I have failed grievously in my duty. Why was I born a woman? Shame on my life! . . . If I had been my mother's son and known of her imminent death, no matter where I happened to be, I would have flown to her side like a bird, Alas, I am only a bird in a cage."

It is really instructive to know how Rassundari and her widowed sisters in law, knowing nothing about the theory of „Sisterhood“ started a „study circle“, procured books from outer quarters and set up an elaborate warning system to prevent discovery and how with the assistance of her sons Rassundari learnt to read and write. The pioneering historian of Bengali literature Dinesh Chandra Sen refers to it as „A true portrait of the traditional Hindu woman“ and „the original picture of the long-suffering, compassionate Bengali woman“ (quoted in Partha Chatterjee, 143). However one notices signs of male hegemony in the praise of this lady. Partha Chatterjee in his essay „Women and the Nation“ says,

“Nationalist of the twentieth Century saw in Rassundari's story only a confirmation of their construction of the true essence of Indian woman-hood: self-sacrificing, compassionate, spiritual, and possessing

great resources of emotional strength drawn from personal faith and devotion. This essence, they thought, needed to be recovered from the morass of bigotry and superstition into which tradition had fallen, and reform and education could accomplish this.” (p-143)

Prasannamayi Devi in her *PurbaKatha* criticizes the hypergamous kulin marriage system in quite unambiguous language

“In their desire to preserve the reputation of their lineages, did not consider the uncertain consequences of giving their daughters in marriages of this sort, although many of these incompatible marriages led to much unhappiness. But it was difficult suddenly to break with a social custom”. (p- 37)

However, she too tries her best to hide these stories behind the closed door and says that

“It is best that this unfortunate history remains unknown to the public.” (P-89)

In the newly independent nation state India, the fruits of liberation were made available only selectively. Freedom from colonial rule did not entail a freedom from patriarchy. The Indian English novels by women writers reveal how the very „home“ remains the principal site for violence. Domestic Violence has tied women to the stake – consumed them in monstrous schematization and deterred

all possibilities of emancipation. Interior colonization of Indian women has pricked the conscience of Indian patriarchy too late and it has saved its face by enforcing an act to provide for more effective protection of the rights of women. But inspite of this attempt of the Govt., Indian women are mile away from their desired goal. Their mobility is restricted, their self expression is monitored and still now girls are victims of forced marriage. Preventing a girl child from attending educational institutions, insults for not having a male child, taking away the income of the partner and such other violence are viewed as socially sanctioned nuisance. Girls have almost no say in the selection of career or partner in marriage. These disempowered women play no role in making a decision. Though the Govt has tried to bolster the confidence of women by framing a law, lack of infrastructure, indifference of the judiciary and above all the deeply entrenched social attitude have nullified the belated attempt of the Govt.

Herein lays the gendered identity of the Nation state and the politics of women empowerment. If the nation state frames a rule that is pro-women it remains a specious one for its repressive state Apparatuses (like army and police) and „ideological State Apparatuses“ (like school, the church, the family and media) assist in the reproduction of

the dominant patriarchal system by „creating“ subjects who are ideologically conditioned to accept the values of the system.

Divide and Rule – A Coercive Machiavellian Strategy :

Playing upon the Machiavellian suggestion that power can be achieved through a combination of coercion and consent, patriarchy keeps up its domination. It practises the coercive method of „Divide & Rule“ and „creates“ subjects who willingly subscribes to the reigning ideologies. The system that depends and thrives on exploitation never grants integration, for, that would result in the collapse of the very exploitative system. Patriarchy engages „patriarchal“ women who according to Tyson are indoctrinated in the reigning patriarchal ideologies, against those who refuse to play the „angel in the house“. The narratives of domestic violence don't constitute a linear plot centred around oppressing men and victimized women, rather patriarchal women's complicity in the infliction of abuse complicates the situation. Patriarchal women work as surrogate agents of male hegemony. In exchange, Patriarchy celebrates these women as „ideal“ through all the ideological state apparatuses and „train“ others in the reigning ideologies and thereby tries their best to undermine women's confidence and assertiveness. Hierarchies created for differential access to material

resources, difference in marital status, status of the natal family creates scope for victimization and women for lack of proper education fall victims to this. A woman, in her search for security for the self and/or her offspring becomes an instrument of Patriarchy, for, she thinks that male, the centre of power only can be her refuge and a female a contestant. The easy, innocent and spontaneous love for the members of her own sex gets lost in the hunt for self-promotion.

Besides, patriarchy „manufactures“ women’s consent to their own subordination through mass ventilation of patriarchal ideologies and naturalization of the violence. Indian Patriarchy in the new nation state has upheld the icon of self-sacrificing, unselfish, constantly slaving wives/mothers to course upper/upper-middle class, upper caste women who in their turn are to course others. Motivated praise of the „sacrificing“ daughter/wife/mother hoodwinks women so much that they unconsciously develop a habit of self-accusation. Coursed in the „Fabricated“ family codes women feel an anxiety disorder for being a „freak“ to traditional codes of conduct and surrender passively to the abettor. As a result of this self accusation syndrome and social anxiety disorder women become victims of depression and low self esteem.

Women's Right to Property- A Neglected Social Question :

Right to property could have been another means of women empowerment. But though women's right to property is protected by law, still now it is a neglected social question. Patriarchy has dissuaded women from claiming their portion by spreading the ideology of „sacrificing“ women. A false sense of honour and pride hinder women to claim the entitled parental property after marriage. Dowry given at the time of marriage often weakens/nullifies their claim though the nature of the two is completely different. Dowry, far from empowering a woman, commodifies her. Patriarchal women, often the senior female members of the family themselves work as agents of patriarchy to spread the notion that a woman who claims the entitled parental property stigmatizes her family or at least the gesture does not become the family. They try to socialize young female members of the family citing precedence of sacrificing women and cursing the „wayward“ women who have claimed the property to realize their dreams. The sons of the family trained in this peculiar „ethics“ think it „unnatural“ for the daughters to claim it. As a result, in spite of the legal protection women's right to property proves itself a fiasco.

Role of the Judiciary :

The role of the police and judiciary is very vital in this context. Since Prejudice against women is entrenched in the very patriarchal structure, as products of this society, policemen also share it. The indifference of the judiciary, their hostility, condescending attitudes towards women, tendency to prioritize „male“ issues are more or less a product of this deeply entrenched societal attitudes. In course of their socialization they have internalized the reigning patriarchal ideology. Moreover as the part and parcel of the Repressive state apparatus, police and judiciary try to manipulate power so as to establish and perpetuate the dominance of men and subordination of women. They believe in the stereotyped gender roles of women and a woman who tries to assert herself naturally incurs their wrath. The tendency to naturalize the violence is conspicuous in the system. Like the society at large they too believe that women must obey the men of their families, they should be polite, obedient, uncomplaining, serviceable to the family members, soft-speaking, dressed traditionally and obviously they are not to value their own desires and individuality and never, on any condition, assert their independence.

I can't refrain myself from sharing my experience in this context. In a Legal literacy programme the advocate after delivering his speech cautioned women not to report

cases of domestic violence to the police, for, that would destroy the peace of the family and slander the family reputation. Those few advocates with whom I have talked so far, in many cases the protection officer himself has told that only „bad women“ are taking help of the law prohibiting Domestic Violence and they are vocal to change this law. Our police system is not yet ready to tackle human rights issues. Recruitment of more females in the police service and gender-related sensitizing programmes and programme on social issues will make the system more responsible and women-friendly. Any radical change of attitude in human beings is too much an expectation. Still we may hope for a gradual change.

Remedies Proposed :

Most women continue to endure violence even while recognizing its criminality because of the absence of the support structure in the community at large. If we can involve the whole community, only then perhaps such an inhuman practice can be checked. We should remember that indifference leads to legitimization of the violence. However, though any radical change in the mindset is impossible to achieve within a day, as Shaw said in his essay *Freedom*, if we can catch them young then perhaps it is possible to effect a change and higher education can be the chief instrument in this regard. Education not only

makes one economically self-reliant but also imparts intelligence and helps to create mental habits which enable people to form sound judgments for themselves. So if the nation wants to make it a democracy in the truest sense of the word and not a camouflage of democracy, it must frame a curriculum that aims at sharpening intelligence besides supplying information.

Incorporation of Gender related texts in the syllabi will give the teachers opportunity to communicate on the related field and equip students with necessary information regarding the history of human civilization which will help them to be „resisting readers“.

Gender related sensitizing programmes for teachers, students and community fellows – three stakeholders for the community are most important. First of all teachers must free themselves from gender biasness. Students who are victims of terrible self conflict will be most profited from such programme. The same programme for community people may bring the desired result. counselors from their own community will help them immensely. We should develop a holistic approach to do away with this social malady. Apart from this the institution of higher education may arrange legal literacy camps along with the NGOs. Women counseling cell of the college may work in tandem with NGOs and serve women by providing

information on legal aid and support structures. NSS programmes can be a useful tool for this purpose. Association with human rights activists may be a great help. If we look forward to a woman friendly society we should try our best to get beyond patriarchal programming and resist the various ways in which patriarchy dictates our lives.

Notes:

1. Raja Rammohun Roy may be termed as the first feminist of India. He opposed the practice of Sati or widow immolation and challenged the putative sacredness of Hindu marriage system in quite unambiguous language. He told “At marriage the wife is recognized as half of her husband, but in conduct they are treated worse than inferior animals” and argued for women’s right to property in his book **Brief Remarks Regarding Modern Encroachment on the Ancient Rights of Females (1822)**
2. Patriarchal Women- by patriarchal women Tyson means those who have internalized the norms and values of patriarchy.

Works Cited:

1. Chatterjee, Partha. The Nation and Its Fragments. Oxford University Press, Calcutta, 1992, Print.
2. Debi, Prasannamayi. Purbba Katha, 1917. Reprint, Calcutta: Subarnarekha, 1982 .Print.
3. Nag, Shanta. Purbasmriti, 1970. Reprint, Calcutta, Papyrus, 1983. Print.
4. Rassundari. Amar Jiban, 1876. Reprint, Calcutta: De Book Store, 1987 .Print.
5. Shaw, Bernard. Freedom, 1935. Print.
6. Tyson, Lois. Critical Theory Today, Routledge, Special Indian Edition, 2008. Print.

4. Research Progress on Driving Factors of Species Diversity of Grassland Insects

Dr. Mamta R Yeotkar

Associate Professor

Smt. Radhabai Sarda Art's

Commerce And Science College

Anjanagaon Surji

Abstract.

Insect species diversity is an important part of biodiversity in grassland ecosystems and a key link in the food chain. It plays an important role in maintaining the function and stability of grassland ecosystems. Studies have shown that grassland insect species diversity is closely related to grazing (strength, combination), climate (light, temperature, precipitation, atmosphere), plant diversity (type, height, coverage, biomass), but The specific mechanisms of grazing, climate, and plant diversity affecting grassland insect species diversity are not clear, especially how different grazing intensity and different grazing combinations drive insect diversity, and how specific grazing mechanisms affect insect species diversity have not been resolved. Moreover, there are few reports on the specific mechanisms of the effects of climate and plant diversity on insect species diversity. This paper collected and compiled 906 research papers on

grassland insect species diversity and its driving factors at home and abroad, which is the future grassland insect species diversity. The research pointed out the direction and further explored the changes of grassland insect species diversity under the influence of grazing, climate, vegetation community and other driving factors in grassland ecosystem, and revealed for the first time the “grazing-plant-soil-grass insects” in grassland ecosystems. The interaction between the two.

Introduction

Grassland insects are an important part of species diversity in grassland ecosystem, which play the role of consumers (herbivores, omnivores and carnivores) or decomposers (saprophagous insects) and play a key role in maintaining ecological stability (Belovsky 2000). The species diversity of insects in grassland is closely related to climate change, grazing conditions, vegetation communities, human activities, etc. The change trend of species diversity of insects is different during grazing of large herbivores. Different grazing and precipitation treatments have a strong impact on the diversity of grassland plants and insects (Zhu 2018). For example, the diversity of LEPIDOPTERA (moths and butterflies) decreased during grazing (Littlewood 2008, Vogel 2007), while the diversity of Diptera (flies) (Barragán 2014) and Coleoptera (beetles) (Yadamsuren 2015) increased. Plant community plays an important role in insect species diversity. Plants provide food resources for herbivorous insects, and at

the same time provide a suitable environment for insect life behavior. Some scholars have identified plant community as the main factor affecting insect species diversity in grassland ecosystem (Moreira 2016, Scherber 2010). There are two main mechanisms to control insect diversity based on the upward effect of plant communities: resource concentration hypothesis (root 1973) and resource specialization hypothesis (strong 1984), and both of them think that grassland insect diversity is positively correlated with vegetation communities. Insects, as the largest biological community on the earth, have gradually declined in species diversity, and the decline rate of insect species diversity is obviously faster than that of vertebrates or plants (Thomas 2004), which is mainly caused by human activities and climate change (Tittensor et al. 2014). Moreover, the protection of biodiversity has always been a hot issue concerned by insect researchers. Although there are a lot of researches on the driving factors of grassland insect species diversity, the researchers are limited to simulation or ecological investigation, and have not created actual economic value. On the basis of collecting and sorting out 906 literatures on species diversity and driving factors of grassland insects at home and abroad, this paper analyzed the research trend of grassland insects in the 34 years from 1985 to 2019, predicted the future research direction, further discussed the change law of species diversity of grassland insects under the influence of driving factors such as grazing, climate, vegetation

community and human activities, and revealed the interaction law of "grazing-plant-soil-grassland insects" in the ecosystem.

Effects of grazing on insect species diversity in grassland

Grazing research on grassland insect species diversity mainly focuses on grazing intensity, grazing methods, grazing groups, and grazing seasons. Studies on the impact of grazing on grassland insect species diversity have both positive effects (Joern et al. 2005, Woodcock and Pywell 2010) and related conclusions (Pöyry et al. 2004, Kruess and Tscharntke 2002a, Kruess) and Tscharntke 2002b), and some believe that grazing has no significant impact on insect species diversity (Bestelmeyer and Wiens 2001, Hofmann and Mason 2006). Differences in grazing methods, intensity, and seasons cause insect abundance to decrease (González-Megías et al. 2004, Joern 2005, Littlewood 2012), increase or not change (Cagnolo et al. 2002, Ryder et al. 2005, Debano 2006, and GARCÍA et al. 2009). Zhu Hui et al. have repeatedly proved that insect species richness has a clear relationship with plant diversity, grazing intensity, and grazing methods (Zhu et al. 2012, Zhu et al. 2015). The effects of grazing activities on the diversity of grassland insect species are divided into direct and indirect effects. They all affect the nonbiological environmental factors, nutritional resources, and trophic level interspecific relationships of insects (Van et al. 2015). Indirect effects Research has increased, gradually shifting to the interaction mechanism of grazing combinations, grazing

livestock, environment and grassland insect diversity
(Burkepile et al. 2017, Liu et al. 2015).

- Direct influence of grazing on species diversity of grassland insects

Feeding, trampling and feces of livestock will directly affect the species diversity of insects (Kangle 1995, Chang Hong et al. 2013, Zhu Hui et al. 2017). Livestock accidentally ate or trampled some insects that inhabit vegetation and have poor mobility, thus reducing the number of such insects. Fecal urine can provide food resources for COLEOPTERA or Diptera insects, and the species richness of COLEOPTERA insect's increases (Van et al. 2015, Gish et al. 2017). Urine can promote the number of termites and provide a large amount of salt for the reproduction of LEPIDOPTERA insects (Eldridge et al. 2017, Kas). Livestock manure provides food for COLEOPTERA insects, which can increase soil fertility after decomposition. Meanwhile, grazing accelerates the nitrogen cycle in soil, changes the physical properties of soil, changes the living environment of insects, and directly affects the activities of insects such as survival, reproduction and spawning (Schrama et al. 2013). There are very few insects in grassland ecosystem, and

the direct impact of grazing on the species diversity may lead to the extinction of this species.

- Indirect effects of grazing on species diversity of grassland insects

The indirect effect of grazing on insect species diversity is mainly caused by changing the habitat quality of insects during grazing. At present, the research in this field mainly focuses on the habitat quality such as plant diversity, food resources, soil environment and community structure (Li Xincheng 2019, Greenwood and MC 2001, Bakker et al. 2006) and the changes of soil environment, compensatory growth of plants and nutrients after livestock eating and trampling (Olff and Ritchie 1998). Grazing animals' eating and trampling reduced plant height, resulting in spatial heterogeneity, which led to the increase of grassland surface temperature, which was beneficial to the oviposition development of insects such as butterflies and locusts (Bourn and Thomas 2002, Roy and Thomas 2003), and indirectly affected insect species diversity. Haddad et al. 2010) found that there was a strong positive correlation between arthropod richness and vegetation community during grazing. The diversity of phytophagous and omnivorous insects increased with the increase of plant diversity, and the insect diversity was more stable and

abundant in the ecosystem with high and stable plant diversity (Ebeling et al. 2012). High intensity grazing seriously reduces insect species diversity, while arthropods have the strongest response to grazing activities in the early growing season (Nickel and Hildebrandt 2003), and the partial eclipse of domestic animals will also increase the heterogeneity of vegetation. All these indicate that plants play an important guiding role in insect species diversity. Livestock can be used as a management tool (Moran 2014), controlling vegetation community and structure can indirectly protect insect species diversity in grassland, regulate grassland nutrition structure and maintain sustainable production in grassland.

- Interaction of grazing on species diversity of grassland insects

The direct effect of livestock on grassland animals is far less than the indirect effect, but the special life history of some insects will make insects have interspecific specificity (Van et al. 2015). The direct and indirect ways of grazing activities often occur simultaneously. For example, it has been found that sheep and locusts have different feeding habits, and the reciprocity can maintain and balance plant diversity. Other studies have found that reducing litter accumulation in cattle is beneficial to the stability of

ant population richness, while increasing ants increases soil N content, which is beneficial to plant growth, which in turn improves cattle's feeding activities. The reciprocal relationship formed by the two regulates the structure and composition of plant communities together (Zhong et al. 2017, Zhong et al. 2014).

Grazing research on grassland ecosystem is not sufficient, especially lack of understanding and understanding of grassland animal species diversity (Li Xincheng 2019). Verdú found that reasonable grazing can protect insect species diversity and maintain the stability of ecosystem function [Verdú et al., 2007]. This study shows that grazing is of great practical significance to the study of species diversity of grassland insects. In the following work, it is necessary to analyze and study more influencing factors, such as environmental factors, interspecific relationships, grazing combinations and so on. By exploring the complex animal relationships in grassland ecosystem and the main influencing factors of grazing on grassland insect species diversity (Rosenblatt and Schmitz 2016), the interaction law between grassland insects and grazing in grassland ecosystem was revealed earlier.

Effects of climate change on species diversity of grassland insects

The influence of climate (temperature, precipitation, light and atmosphere) on the individual development of

insects can be divided into direct and indirect effects. The change of temperature, precipitation, light and gas will cause the change of species diversity of insects in grassland. Climate change mainly changes the temperature and precipitation of the ecosystem, which are the most important factors affecting the growth and development of insects (Bale et al. 2000), not only affecting the phenological period and life history of insects. In addition, it will also affect insect species diversity and easily increase the outbreak of phytophagous insects (Baldwin et al. 2014). With the increase of temperature, the flowering period and phenological period of plants are advanced, and the number of flower-visiting insects decreases due to lack of nectar (Hegland et al. 2010). Precipitation and high concentration of CO₂ will directly destroy the living environment of insects and change the physiological metabolic function of insects (Hodkinson 2005). The increase of CO₂ concentration changes the chemical composition of plants and indirectly affects herbivorous insects (Ge Feng and Chen Fajun 2006). The influences of climate factors on grassland insects are different. The influences of temperature, precipitation and light can directly change the living environment of grassland insects, while the influences of atmosphere are usually caused by indirectly changing the characteristics of plants or insects.

- Effect of temperature on species diversity of grassland insects

Temperature is the most important abiotic factor for phytophagous insects in climate, which directly affects the growth, reproduction and development of insects (Bale et al. 2002). The developmental threshold temperature and effective accumulated temperature of insects determine the growth and development rate of insects. Temperature change will change the life history strategy of insects (Guo et al. 2009). Under temperature stress, the activities of a series of respiratory metabolic enzymes in the body decrease, the metabolic capacity of insects decreases, and the activity capacity of insects decreases (Chen Juhong et al., 2018). With the increase of temperature, the species richness of insects increased (Hoover et al. 2012), and the number of moths increased greatly (Bale et al. 2002). On the contrary, the insects migrated to high altitude due to the warming of climate (Villalpando et al. 2009). Fan Meiling et al. (Fan Meiling et al. 2009) found through mathematical model fitting that temperature has an impact on generation time, reproductive rate and body weight of insects, which can link temperature with life history of insects and comprehensively simulate climate warming for biological control of pests.

- Effects of precipitation on insect species diversity in grassland

Precipitation is an important ecological factor and a major factor in the growth and development of animals and plants, which plays a more significant role in arid and semi-arid ecosystems (Sponseller 2010). The change of precipitation will reduce the richness of plants, simplify the structure of grassland ecosystem, and lead to a decline in the number of insects (Dang Zhihao and Chen Fajun 2011; Zhu Hui 2012). The increase of precipitation simplifies the food web, reduces the diversity and quantity of insects, which leads to extreme environmental drought, and changes in the relationship between host plants and insects, which leads to the destruction of biodiversity and community stability (Suttle et al., 2007). The increase of precipitation will slow down the growth and development of insects and even lead to the extinction of insects (Xing Wenli 2017). For example, the reproductive development of locusts will be greatly affected by precipitation (Nestel et al. 2010). Climate change directly affects the phenological period and life history of insects, and the influence of climate factors on insect species diversity is usually the result of temperature, CO₂ concentration, fertilization, etc. (Morsello et al. 2008). The research on the specific mechanism of climate change on grassland animal community function is limited by many factors, and the

theoretical and applied research is not perfect, which needs further study (Wang et al. 2018).

Specific mechanism of plant diversity and insect species diversity

There is a close relationship between plants and insects, and plant community composition (such as vegetation height, coverage, richness and nutritional value, etc.) provides food resources or habitat environment for insects, and plays a decisive role in insect species diversity (Dong Zhaoke and Ge Feng 2012). In 2006, Bakker et al. 2006) found that the species richness of grassland animals is related to the vegetation structure and plant types of habitats, and the effects of insects on plants include feeding and parasitism. When plants are harmed by insects, defense or adaptation mechanisms will be generated, and insects will form anti-defense mechanisms (Qin Qiuju and Gao Xiwu 2005, Peng Lu et al. 2010). With the increase of plant species richness and insect species richness, plant biomass has a strong positive impact on insect richness (Perner et al. 2005). The species density and richness of grazing vascular plants increase, while the nutrient content of vascular plants is lower, which leads to the decrease of the richness of grassland insects (Přažský 2006). The increase of plant height, coverage, gene diversity, species and productivity can provide more space for insects (Zhu Hui et al. 2008). For example, species richness of beetles, flies and HYMENOPTERA insects decreased, while species diversity

of Hemiptera insects increased (Debano 2006). The feeding behavior of insects will change the structure of plant community, the rate and direction of plant succession (Xu Rumei 2005). Plant productivity, vegetation structure and physical disturbance of habitat are the factors interacting with plant diversity, and plant community plays an important role in arthropod community (Zhu et al.2017). The maximum species richness of herbivorous insects always shifts to higher vegetation communities (lower disturbance and longer succession age) (Lawton 1983). Pöry observed that the maximum abundance of special butterflies and moths appeared in low vegetation areas (Pöry et al. 2006). This is consistent with the prediction result of "dynamic equilibrium model" described by Huston's (Huston et al. 1996). As a potential predictor, plant diversity has a bottom-up impact on insect diversity (Haddad et al. 2009). Grazing causes the spatial heterogeneity of vegetation structure, which has a strong response to insect species richness, and changes the changing law between plants and insects.

Prospect

- Specific mechanism and application of grazing livestock-vegetation community-insects Grazing livestock, plants and insects are closely related, and the effects of livestock on insects include direct and indirect ones. Feeding, trampling and feces of livestock can directly affect the species diversity of insects, and

can also change the habitat or food of insects indirectly by changing the height, species composition and heterogeneity of plants. The main relationships between insects and plants are feeding and parasitism, and there is an interspecific relationship. The competition between insects and plant niches will affect the relationship between livestock, plants and insects. Grazing activities will cause changes in spatial heterogeneity of plants, while changes in plant height, coverage and biomass will cause changes in insect habitats (Figure 1). In grazing ecosystem, the three factors always interact and influence each other. For this reason, climate, plants, grazing conditions and other influencing factors can be used to predict the species diversity of grassland insects. Understanding the composition of grassland insect species diversity can adjust the dynamic relationship between natural enemy insects and pests by changing the herd structure of pasture, which can be used to protect grassland and insect species diversity, improve the quality of pasture and improve the quality of grazing livestock.

- Prediction of future research direction of grassland insect species diversity In this paper, 906 domestic and foreign literatures about grazing activities, climate change, vegetation community and other factors on grassland insect species diversity from 1985 to 2019

were searched from CNKI and SCIE. From Figure 2, it can be seen that the number of research literatures about grazing activities on grassland insect diversity increased gradually from 1985 to 2019, and the research on climate and vegetation community on grassland insect diversity changed irregularly. In recent years, China has made great efforts to develop animal husbandry. The research on the impact of grazing on insect species diversity has great practical significance, and the published literature has gradually increased. At present, the global warming brings about temperature rise and air pollution, and the biodiversity in grassland ecosystem is greatly destroyed, which can be verified by simulation experiments. Although there are too many interference factors and the experiment is difficult, the research in this field has strong timeliness and can provide a large amount of basic data for the protection and prediction of biodiversity. The vegetation community is more concentrated under a certain vegetation group and then classified and verified. On the contrary, it is easier to control the change of grassland animal species according to grazing activities, which can fully realize the specific mechanism of "grazing-plant-soil-grassland insects" in this process and promote the rapid development of ecological animal husbandry.

- Analysis on the research trend and direction of grassland insect diversity Although the effects of grazing, climate, plant and human activities on grassland insect diversity have been understood, the effects on grassland insect diversity are the results of multiple driving factors, which are different from the results of single factor research. In order to have a more complete and indepth understanding of the mechanism of driving factors of grassland insect diversity, and ensure the accuracy and reliability of the results, we should carry out experimental research on grassland insect diversity in a larger space-time scale. Secondly, as soon as possible, through experiments and statistical means, the dominant factors among the driving factors were explored, and the mechanism of grazing, climate, plant diversity and other driving factors on grassland insect diversity was expounded. The mechanism of "grazing-plant-soil-grassland insects" was combined with the technical concept of biological control to protect the biodiversity of artificial pasture or grassland. The establishment of relevant grassland natural enemy insect research institute is helpful to discover natural enemy insects with great control effect and wide application prospect on grassland, and can provide theoretical guidance for green prevention and control technology system of grassland pests,

grassland ecological restoration and high-quality development of ecological animal husbandry.

References

- [1] Dong Wei, Zhang Pujin, Chang Hong, et al. Effects of different grazing intensities on locust communities in desert steppe [J]. Acta Environmental Entomology, 2013, 35(5):572-577.
- [2] Chen Juhong, Cui Juan, Zhang Jinping, et al. The effect of temperature stress on the key enzyme activities of respiratory metabolism in adult worms of the bee stinkbug [J]. Acta Entomology, 2018, 61(9): 1003-1009.
- [3] Dang Zhihao, Chen Fajun. Response and adaptation of insects to rainfall and drought [J]. Acta Applied Entomology, 2011, 48(5):8-12.
- [4] Dong Zhaoke, Ge Feng. The influence of temperature rise on the occurrence and development of insects [J]. Agricultural Technology and Equipment, 2012, 48(2):1141-1148.
- [5] Fan Meiling, Fang Shuiyuan, Chen Lei, et al. Comparison of relationship models between temperature and insect intrinsic growth rate [J]. Acta Phytophylacica Sinica, 2017, 44(4):544- 550.
- [6] Ge Feng, Chen Fajun. The effect of increased atmospheric CO₂ concentration on insects [J]. Acta Ecologica Sinica, 2006(3): 935-944.
- [7] Kang Le. Locust-plant interaction under grazing disturbance. Acta Ecologica Sinica, 1995, 15(1): 1-11.
- [8] Li Xincheng. The influence mechanism of livestock grazing methods on plateau pikas and arthropods in alpine meadows in the source area of the Three Rivers [D]. Changchun: Northeast Normal University, 2019.
- [9] Peng Lu, Yan Ying, Liu Wanxue, et al. Anti-defense mechanism of herbivorous insects against plants [J]. Acta Entomologica Sinica, 2010, 53(5): 572-580.
- [10] Qin Qiuju, Gao Xiwu. Plant defense response induced by insect feeding [J]. Acta Entomologica Sinica, 2005, 48(1): 125-134.