

S N: 57

● Volume 13, Issue 1, January-April 2019 ● Print - ISSN : 0974-5041 ● Online - ISSN : 2249-0035

यू०जी०सी० – एच०आर०डी०सी०, नैनीताल

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शोध पत्रिका

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Indexed/Abstracted with:

- Index Copernicus International (2015, ICV - 72.26)
- Scientific Journal Impact Factor (SJIF - 6.502)
- EBSCO Discovery
- Indian Science
- Cite Factor
- Summon (ProQuest)
- I2OR
- ISRA-JIF

- NAAS Rating 2018 - 3.61
- Indian Citation Index
- Primo and Primo Central
- ESJI
- IJIF
- InfoBase Index (IB Factor - 2.6)
- Google Scholar
- Indian Science Abstracts
- J-Gate
- CNKI Scholar
- DRJI

Print ISSN : 0974-5041
Online ISSN : 2249-0035

क्वैस्ट-शोध पत्रिका

यू0जी0सी0-एच0आर0डी0सी0, कुमाऊँ विश्वविद्यालय, नैनीताल
Volume 13, Issue 1, January-April 2019

नोट: प्रस्तुत शोध पत्रिका में संकलित आलेखों/शोध पत्रों में व्यक्त किये गये विचार लेखकों के स्वयं के हैं। सम्पादक अथवा यू0जी0सी0-एच0आर0डी0सी0, कुमाऊँ विश्वविद्यालय, नैनीताल की उन विचारों से सहमति अनिवार्य नहीं है। साथ ही वे लेखकों द्वारा अभिव्यक्त किये विचारों के लिए उत्तरदायी भी नहीं होंगे। इस शोध पत्रिका में प्रस्तुत सामग्री का लेखक की अनुमति और उल्लेख के बिना प्रकाशन अनुमान्य नहीं होगा। सर्वाधिकार सुरक्षित।

क्वैस्ट-यू0जी0सी0-एच0आर0डी0सी0, कुमाऊँ विश्वविद्यालय, नैनीताल
Volume 13, Issue 1, January- April 2019

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शोध पत्र

पंडित शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के रूप में पंडित कुमार गन्धर्व का स्थान

रवि जोशी

Received: 08-09-2018; Accepted: 16-01-2019

सारांश

पंडित कुमार गन्धर्व इस युग के सर्वाधिक लोकप्रिय एवं विवादास्पद कलाकार रहें हैं। परम्परागत रूप से चले आ रहें भारतीय शास्त्रीय संगीत में अपने नवीन प्रयोगों एवं रचनाशीलता के फलस्वरूप उन्होंने भारतीय शास्त्रीय संगीत को एक नया सौंदर्यशास्त्र प्रदान किया।

भारतीय संगीत में रचनाकारों अथवा वाग्गेयकारों की एक सुदृढ़ परम्परा मध्यकाल से चली आ रही है जिसका उदहारण नायक बैजू, नायक बक्सू अथवा तानसेन इत्यादि द्वारा रचित ध्रुपदों में हमें आज भी देखने को मिलता है। इसी क्रम में 18वीं शताब्दी पूर्व के वाग्गेयकार सदारंग 'नियामत खां' तथा अदारंग 'फिरोज खां' (18वीं शताब्दी) की बंदिशे आज भी विभिन्न घरानों तथा शिक्षण संस्थानों में गाई व सिखाई जाती है। उत्तम वाग्गेयकारों का यही क्रम हमें बड़े मुहम्मद खां 'हररंग', मुहम्मद अली खां 'मनरंग', उस्ताद फैयाज खां 'प्रेम पिया' (1880-1950) तथा उस्ताद बड़े गुलाम अली खां 'सबरंग' (1902-1968) आदि की रचनाओं में देखने को मिलता है।

पंडित कुमार गन्धर्व आधुनिक काल के एक उत्कृष्ट रचनाकार थे जिनमें, पं शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के लगभग समस्त गुणों का समन्वय था।

प्रस्तुत शोध पत्र में पंडित कुमार गन्धर्व तथा उनकी रचनाओं को 13वीं शताब्दी में पं शारंगदेव द्वारा रचित, संगीत रत्नाकर ग्रन्थ में वर्णित उत्तम वाग्गेयकार के लक्षणों से तुलनात्मक विवेचन करने का प्रयास किया गया है।

मुख्य शब्द: संगीत रत्नाकर, शारंगदेव, वाग्गेयकार, बंदिश, पं कुमार गंधर्व

13वीं शताब्दी में पं शारंगदेव द्वारा रचित संगीत रत्नाकर ग्रंथ, भारतीय संगीत के इतिहास को जानने-समझने की एक महत्वपूर्ण ऐतिहासिक कड़ी है। प्रसिद्ध इतिहासकार श्री उमेश जोशी के अनुसार, "पं शारंगदेव का समय 1210 से 1247 ई० के मध्य का माना जाता है। यह देवगिरी (दौलताबाद) के यादववंशीय राजा के दरबारी संगीतज्ञ थे"।

"शारंगदेव संगीत के विद्वान थे। संस्कृत भाषा में लिखित इस ग्रन्थ के रचयिता कश्मीरी ब्राह्मण थे और गोत्र वृषगन था। उनका पूरा नाम निःशंक शारंगदेव है। उनके पितामह भास्कर ग्यारहवीं अथवा बारहवीं शताब्दी में आक्रमणों (उत्तर पश्चिम से तुर्क तथा मंगोलों) के कारण देवगिरी (दक्षिणी) चले आए। यहाँ यादव नरेश भिल्लम के राजाश्रय में चले गए। यादव वंश कला एवं आयुर्वेद का संरक्षक रहा है। उसी समय भास्कर के पुत्र सोदल देवगिरी राज्य में

¹भारतीय संगीत का इतिहास, उमेश जोशी, पृष्ठ-183

महालेखापाल नियुक्त हुए। भिल्लम का पुत्र जैत्रपाल, फिर उनके पुत्र सिंघल (1210-1247) ने शासन किया जो विद्या एवं कला प्रेमी था। सोदल के पुत्र शारंगदेव ने महालेखापाल के पद पर रहते हुए इस ग्रन्थ की रचना की।¹²

संगीत रत्नाकर ग्रंथ को कर्नाटक एवं हिन्दुस्तानी संगीत के विद्वान संगीत का आधार ग्रंथ मानते आए हैं। पं शारंगदेव कृत संगीत रत्नाकर में नाद, श्रुति, स्वर, ग्राम, मूर्च्छना, जाति इत्यादि का विवेचन भली प्रकार दिया गया है। संगीत रत्नाकर में गायन, वादन तथा नृत्य तीनों का वृहद् वर्णन किया गया है। संगीत रत्नाकर में 7 अध्याय हैं यहीं कारण है कि इसे "सप्ताध्यायी" भी कहा जाता है।

संगीत रत्नाकर के सात अध्याय इस प्रकार हैं -

- (1) स्वरगताध्याय (2) रागाविवेकाध्याय (3) प्रकीर्णकाध्याय (4) प्रबंधाध्याय (5) तालाध्याय (6) वाद्याध्याय (7) नर्तनाध्याय

संगीतरत्नाकर के तीसरे अध्याय अर्थात् "प्रकीर्णकाध्याय" में वाग्गेयकार के लक्षण, गीत के गुण दोष, गायक-वादक के गुण दोष तथा स्थायी इत्यादि का वर्णन प्राप्त होता है। "वाक्" "गेय" "कार" इन तीनों के सामंजस्य से वाग्गेयकार दिग्दर्शित होता है। "वाक्" का अर्थ है वाणी, वाक्य, कथन इत्यादि। "गेय" के अर्थ में गीत अथवा गाये जाने वाला काव्य तथा ताल शब्द के नियमों के साथ शब्दोच्चारण करना इत्यादि भाव लिए जा सकते हैं। अंत में "कार" शब्द कर्ता का अर्थ प्रकट करता है। इस प्रकार पद रचना तथा स्वर रचना को आकार देने वाला वाग्गेयकार कहलाता है। दूसरे शब्दों में कहा जा सकता है कि "वाक्" अर्थात् भाषा साहित्य तथा गेय अर्थात् स्वर विशेष इन दोनों पक्षों में सिद्ध रचनाकार को शास्त्रों में वाग्गेयकार की संज्ञा दी गयी है। वाक् को "मातु" तथा गेय को "धातु" कहते हैं। जो वाक् और गेय दोनों की रचना करता वह वाग्गेयकार कहलाता है।

संगीत रत्नाकर के तृतीय अध्याय अर्थात् "प्रकीर्णकाध्याय" में वाग्गेयकार की परिभाषा इस प्रकार उल्लेखित है-

"वाङ्मातुरुच्यते गेयं धातुरित्यभिधीयते ।
वाचं गेयं च कुरुते यः स वाग्गेयकारकः" ॥ 2 ॥¹³

अर्थात् जो वाक् अर्थात् मातु और गेय अर्थात् धातु का कर्ता है अर्थात् जो पद्य-रचना और स्वर रचना का ज्ञाता है वह वाग्गेयकार है। इस प्रकार उपरोक्त परिभाषा से स्पष्ट है कि वाग्गेयकार को "धातु" एवं "मातु" अर्थात् पद रचना व स्वर रचना का ज्ञान होना नितांत आवश्यक है।

संगीत रत्नाकर में वाग्गेयकार के तीन वर्गों का उल्लेख किया गया है -

- (1) उत्तम वाग्गेयकार (2) मध्यम वाग्गेयकार (3) अधम वाग्गेयकार।

संगीत रत्नाकर में उत्तम वाग्गेयकार के लक्षण इस प्रकार वर्णित किए गए हैं-

"शब्दानुशासनज्ञानमभिधानप्रवीणता ।
छन्दः प्रभेदवेदित्वमलंकारेषु कौशलम् ॥ 3 ॥

रसाभावपरिज्ञानं देशस्थितिषु चातुरी ।
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"भावार्थ- उत्तम वाग्गेयकार में निम्नलिखित गुण होने चाहिए-

¹² भारतीय संगीत ग्रंथ (वर्ण्य विषय विश्लेषण) डा. लावण्य कीर्ति सिंह "काव्या" पृष्ठ-115

¹³ शारंगदेवकृत संगीत रत्नाकर, सरस्वती व्याख्या और अनुवाद, डा. सुभद्रा चौधरी पृष्ठ-108

¹⁴ क्रमिक पुस्तक मालिका, सम्पादक डा. लक्ष्मीनारायण गर्ग पृष्ठ-53

पंडित शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के रूप में पंडित कुमार गन्धर्व का स्थान

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2. अभिधानप्रवीणता— अमरकोषादि ग्रंथों का ज्ञान।
3. छंद—प्रभेदवेदित्व— सभी प्रकार के छंदों का ज्ञान।
4. अलंकारकौशल— साहित्यशास्त्र में वर्णित उपमादिक सभी अलंकारों का ज्ञान।
5. रसभावपरिज्ञान— उसी शास्त्र में वर्णित किए हुए श्रृंगारिक रसों तथा विभावादिक भावों का उत्तम ज्ञान।
6. देशस्थितिज्ञान— विभिन्न प्रदेशों के रीति रिवाजों का ज्ञान।
7. अशेषभाषाज्ञान— देश की सभी भाषाओं का ज्ञान।
8. कलाशास्त्रकौशल— संगीतादि शास्त्रों में प्रवीणता।
9. तूर्यत्रितयचातुर्य— गीत, वाद्य, तथा नृत्य तीनों विधाओं में चातुर्य।
10. दृढशारीरशालीता— दृढ अर्थात् मनोहर शरीर जिसे प्राप्त हुआ हो, अर्थात् अधिक श्रम, न करते हुए जिसे राग की अभिव्यक्ति (प्रदर्शन) सरलता से करनी आती है उसे उत्तम शरीर प्राप्त हुआ है ऐसा कहा जाता है। "शरीर" यह पारिभाषिक शब्द है।
11. लयतालकलाज्ञान— लय, ताल, तथा तालाध्याय में वर्णित कलाओं का ज्ञान।
12. अनेककाकुज्ञान— भिन्न—भिन्न स्वर भेदों का ज्ञान। "काकु" यह भी पारिभाषिक शब्द है।
13. प्रभूतप्रतिभोदभेदभाक्त्व— अलौकिक बुद्धि (नए—नए प्रकार जिसे सूझते हैं, ऐसी प्रज्ञा अथवा बुद्धि)।
14. सुभगगेयता— सुखद गायन करने की शक्ति।
15. देशीरागज्ञान— देशी रागों का ज्ञान।
16. वाक् पटुत्व— सभा में विजय पाने योग्य वाक् चातुर्य।
17. रागद्वेषपरित्याग— राग—द्वेष का आभाव।
18. साद्रत्व— सरसता।
19. उचितज्ञता— किस स्थान पर क्या उचित होगा, इसका ज्ञान।
20. अनुच्छिष्टोक्तिनिबन्ध— स्वतन्त्र रचना करने की क्षमता।
21. नूतनधातुविनिर्मितिज्ञान— नई—नई स्वररचना करने का ज्ञान।
22. परचित्तपरिज्ञान— दूसरों के मन का भाव जानने की शक्ति।
23. प्रबंधप्रगल्भता— प्रबंधों का उत्तम ज्ञान।
24. द्रुतगीतविनिर्माण— शीघ्र कविता करने की क्षमता।
25. पदांतरविदग्धता— भिन्न—भिन्न गीतों की छाया का अनुकरण करने का सामर्थ्य।
26. त्रिस्थानगमकप्रेद्धिर्विधायापिनेपुण— तीनों सप्तकों में गमक लेने की शक्ति।
27. आलपिनैपुण— रागालपि तथा—पकालपि का ज्ञान।
28. अवधान— चित्त की एकाग्रता"।^१

पं शारंगदेव के मतानुसार उपरोक्त समस्त गुण जिसमें विद्यमान हों, उसे उत्तम वाग्गेयकार कहते हैं। इसी प्रकार मध्यम एवं अधम वाग्गेयकार का वर्णन संगीत रत्नाकर में निम्नवत् है—

"विदधानोऽधिकं धातुं मातुंमदस्तु मध्यमः ।

धातुमातुविदप्रौढः प्रबंधेष्वपि मध्यमः" ॥१०॥

अर्थात् जो धातु को विशेष रूप से धारण करता हुआ मातु में मंद हो वह मध्यम कोटि का वाग्गेयकार है तथा जो "धातु" एवं "मातु" दोनों का जानकार हो परन्तु विविध प्रकार के प्रबंधों की रचना में अप्रौढ हो वह भी मध्यम श्रेणी के वाग्गेयकार की श्रेणी में आता है।

रम्यमातुविनिर्माताऽप्यधमो मंदधातुकृत" ॥११॥^१

^१क्रमिक पुस्तक मालिका, सम्पादक डा. लक्ष्मीनारायण गर्ग पृष्ठ—53

"शारंगदेवकृत संगीत रत्नाकर, सरस्वती व्याख्या और अनुवाद, डा. सुभद्रा चौधरी पृष्ठ—111

"शारंगदेवकृत संगीत रत्नाकर, सरस्वती व्याख्या और अनुवाद, डा. सुभद्रा चौधरी पृष्ठ—111

अर्थात् मनोहारी "मातु" का निर्माता होने पर भी मंद "धातु" की रचना करने वाला अधम श्रेणी का वाग्गेयकार है।

पं शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के गुण मध्य काल में प्रचलित प्रबंध गान विधा से सम्बंधित थे। मध्य काल से लेकर आधुनिक काल तक भारतीय शास्त्रीय संगीत में अनेकानेक परिवर्तन हुए जिसके फलस्वरूप आधुनिक काल के किसी भी वाग्गेयकार के समस्त 28 गुणों का होना बहुत कठिन जान पड़ता है।

भारतीय शास्त्रीय संगीत में वाग्गेयकारों की एक समृद्ध परंपरा रही है। इसी परंपरा में एक नाम पं कुमार गंधर्व का भी है जिन्होंने अपनी मोहक रचनाओं से भारतीय शास्त्रीय संगीत की अमूल्य निधि में अधिकाधिक वृद्धि की। एक कलाकार के रूप में पं कुमार गंधर्व का स्थान शीर्षस्थ गायकों की श्रेणी में आता है। पं कुमार गंधर्व एक सफल कलाकार तो थे ही साथ ही साथ उनके भीतर नवीन रचना करने की भी अद्भुत क्षमता थी। वे एक उत्कृष्ट रचनाकार भी थे अर्थात् वे एक उत्तम श्रेणी के वाग्गेयकार भी थे।

मई 1956 में पं कुमार गंधर्व की स्वरचित बंदिशों का संकलन "अनूपरागविलास" प्रकाशित हुआ जिसमें नए व पुराने रागों की कुल 136 बंदिशों का संग्रह है। कालांतर में जुलाई 1993 को अनूपरागविलास के दूसरे भाग का भी प्रकाशन हुआ जिसमें नए व पुराने रागों में कुल 111 बंदिशों का संकलन है। अपनी रचनाओं में कुमार जी ने "शोक" उपनाम का प्रयोग किया है। पं कुमार गंधर्व के संकलन के विषय में श्री वामन हरी देशपांडे अपने लेख "गायक और गायकी "में लिखते हैं" पंडित भातखंडे आदि संग्राहकों ने इतना प्रचंड कार्य किया है फिर भी उनके ग्रंथों में पहले के संगीतज्ञों द्वारा बांधी गयी असली बंदिशें कितनी है, स्वराकारों द्वारा रची गई स्वरावली की सच्चाई पं भातखंडे तक पहुँचते-पहुँचते किस मात्रा में बची रही बंदिशों के पाठ में कितने अपभ्रंश घुस आए हैं, आदि महत्वपूर्ण प्रश्न अनिर्णीत ही रह जाते हैं। मतलब यह कि सौ दो सौ वर्षों में उस जमाने की नवनिर्मित बंदिशों के स्वरूप में आमूलाग्र परिवर्तन हो गया ऐसी भी सम्भावनाएँ हैं। कुमार जी के

प्रस्तुत संग्रह के बारे में इस प्रकार के किसी भी संदेह की गुंजाइश नहीं है। उनका सारा सृजन उनका है। उसे लिपिबद्ध उन्होंने स्वयं किया है और स्वरावलियाँ भी उन्हीं की उपज है, इसलिए उसमें भ्रष्टाचार की सम्भावनाएँ है ही नहीं, वह बिलकुल तारोताजा है"।*

उत्तम वाग्गेयकार के रूप में पंडित कुमार गंधर्व की समीक्षा निम्नलिखित मुख्य बिन्दुओं के आधार पर की जा सकती है—

सर्वप्रथम पं शारंगदेव द्वारा वर्णित वाग्गेयकार के प्रथम चार गुणों यथा—

शब्दानुशासनज्ञान, अभिधानप्रवीणता, छंद-प्रभेदवेदित्व, तथा अलंकारकौशल का पं कुमार गंधर्व को पूर्ण ज्ञान था। ये वह गुण हैं जिनके आभाव में कोई भी रचनाकार उत्तम रचना नहीं कर सकता। इस प्रकार कहा जा सकता है कि कुमार जी का "धातु" पक्ष बहुत सबल था।

अशेषभाषाज्ञान— बाल्यावस्था से विभिन्न परिवेशों में रहने के फलस्वरूप पं कुमार गंधर्व अनेक भाषाओं के संसर्ग में आए। अपने गुरु प्रो. देवधर जी के पास मुंबई आने के पश्चात अपनी मातृभाषा कन्नड़ के अतिरिक्त मराठी भाषा से भी वे परिचित हुए। देवास आने के बाद श्री चिंचालकर आदि मित्रों के सहयोग से हिंदी भाषा का भी समुचित ज्ञान कुमार जी को प्राप्त हुआ श्री राहुल बारपुते तथा श्री श्याम परमार जैसे मित्रों के माध्यम से "मालवी" के रूप में एक नयी बोली से उनका परिचय हुआ। मालवी को समझने की प्रक्रिया में इन मित्रों ने अवधी, ब्रजभाषा, तथा खड़ी बोली से भी कुमार जी को अवगत करा दिया। इस प्रकार कहा जा सकता है कि अपनी मातृभाषा कन्नड़ के अतिरिक्त मराठी, हिंदी, अवधी, ब्रजभाषा, तथा खड़ी बोली से तो कुमार जी परिचित थे ही, साथ ही साथ स्वयं के पास पुरानी बंदिशों का विपुल संग्रह होने के फलस्वरूप पंजाबी, राजस्थानी, तथा उर्दू भाषा के ज्ञान से भी वे अछूते नहीं रहे उदाहरणस्वरूप पंजाबी भाषा में उनकी यह 'स्वर रचना' पं कुमार गंधर्व के अशेषभाषाज्ञान को दर्शाती है —

*वामनहरि देशपांडे, गायक और गायकी, कुमार गंधर्व, सम्पादक अशोक वाजपेयी

राग मुल्तानी, ताल त्रिताल, लय द्रुत

स्थाई

"मियां तुसी वेखले दुनियांदा अजब तमासा देखा ॥

अंतरा

समझ समझ कर मन में रसिया जा दिन पी पूछेंगे पूछेंगे
लेखा" ॥⁹

वाक् पटुत्व- पं कुमार गन्धर्व भारतीय शास्त्रीय संगीत में सर्वाधिक विवादास्पक संगीतकार के रूप में जाने जाते रहे। आपके नए-नए प्रयोगों ने सदैव आलोचकों का ध्यान आपकी ओर खींचा। परन्तु आपने अपने प्रयोगों की तर्कसंगत व्याख्या कर आलोचकों को मौन कर दिया। इस संबंध में वसन्त पोतदार अपनी पुस्तक में लिखते हैं कि "वे (पं कुमार गन्धर्व) कहते पुराने राग, प्राचीन शास्त्र एकदम उत्तम था, निर्दोष था। फिर आधुनिक गवैयों ने उसे क्यूँ बिगाड़ दिया? उसमें दोष पैदा कर उसे भ्रष्ट क्यूँ किया? जिस तरह मैंने प्रत्येक राग का विशुद्ध मूल खोजने का प्रयास किया है, उस पर पुनर्विचार किया है, वैसा और किसी ने क्यूँ नहीं किया? आज इन सब गायकों से जवाब तलब करने वाला कोई नहीं है, पर कल करेंगे। तब उनकी मुश्किल हो जायेगी यार" या फिर कहते "पिछले पचपन सालों से मैं बिलासखनी तोड़ी गा रहा हूँ वह भी मेरे साथ बढ़ता ही गया ना। वह भी तो पचपन साल का हुआ। सीनियर हुआ उसका अदब भी तो मुझे रखना ही चाहिए" ॥¹⁰

रसभावपरिज्ञान- कुमार जी को रागों के रस एवं भावों का उत्तम ज्ञान था। इनकी बन्दिशों के संकलन अनुपरागविलास भाग एक तथा दो में, हमें विभिन्न रसों एवं भावों से युक्त रचनाएँ देखने को मिलती हैं। आपने श्रृंगार, भक्ति, तथा वात्सल्य रस का बहुत सुन्दर प्रयोग अपनी रचनाओं में किया है। उदाहरणस्वरूप राग कल्याण में निबद्ध यह बन्दिश माँ सरस्वती के प्रति उनकी निष्ठा तथा भक्ति भाव को दर्शाती है ।

राग कल्याण, ताल एकताल, लय मध्य

स्थाई

"देवो दान मोहे

माँगत सुर भीख, दास तेहारो ॥

अंतरा

तोरे बिन ग्यान दे कौन मो सो

नेक नजर मो पर, आस तिहारो" ॥¹¹

सुभगेयता- आपकी रचनाएँ अत्यंत सरल एवं चित्ताकर्षक हैं। आपने "शोक" उपनाम से अनेक विलम्बित एवं द्रुत, खयालों, तरानों तथा टुमरियों की रचना की हैं। आपकी बन्दिशें अपनी नवीन विषयवस्तु व सरल स्वरसंरचनाओं के कारण कलाकारों तथा संगीत के विद्यार्थियों दोनों को ही आकर्षित करती हैं।

प्रबन्धप्रगल्भता- पं कुमार गन्धर्व को आधुनिक काल में प्रचलित सभी गीत विधाओं जैसे ध्रुपद, धमार, खयाल, टुमरी, टप्पा व तराना का उत्तम ज्ञान था। यद्यपि आपकी कृति अनुपरागविलास में ध्रुपद व धमार की कोई भी रचना देखने को नहीं मिलती परन्तु आपने गुरुमुख से अनेकानेक ध्रुपद व धमार की शिक्षा प्राप्त की। आपके पास अनेक दुर्लभ टप्पों का संग्रह था जिन्हें आपने ग्वालियर घराने के प्रमुख गायक पं राजाभय्या पूँछवाले से सीखा था। आपके द्वारा प्रस्तुत "टुमरी, टप्पा, तराना" नामक कार्यक्रम आधुनिक प्रबंधों के संबंध में आपके वृहद ज्ञान की ओर संकेत करता है। "टप्पा गायकी के धुरंधर गायक वाजिद हुसैन और राजभैया पूँछवाले से, कुमार जी को क्षयग्रस्त होने से पूर्व, युवावस्था की संस्कारक्षम आयु में, टप्पा गायन का बाकायदा प्रशिक्षण प्राप्त हुआ था..... राजा भैया की टप्पा-टुमरी की बही, पुस्तकें और स्वरावली का अभ्यास करके उन्हें जो अभिप्रेत था, उसका शोध उन्होंने किया। आज भी वो सारी किताबें उनके घर में संरक्षित हैं" ॥¹²

⁹कुमार गंधर्व, अनुपरागविलास, भाग-2, पृष्ठ-159

¹⁰कुमार गंधर्व, वसंत पोतदार, पृष्ठ-129

¹¹कुमार गंधर्व, अनुपरागविलास, भाग-1, पृष्ठ-32

¹²कुमार गंधर्व, वसंत पोतदार, पृष्ठ-116-117

उचितज्ञता— आपको राग के भाव और उसकी प्रकृति का पूर्णज्ञान था। अमुक राग का क्या भाव है, इसी के अनुसार आपने अपनी बंदिशों में शब्दों का चयन किया है। उदारणार्थ राग विलासखानी तोड़ी जिसकी प्रकृति करुण है, उसमें आपने निम्नलिखित बंदिश बाँधकर राग के भाव तथा शब्दों के साथ उचित व्यवहार किया है।

राग विलासखानी तोड़ी (त्रिताल मध्यलय
स्थाई

"नयन में जल भर आए देखन तोहे
काहे पिया नहीं देत दरस मोहे ।

अंतरा

शोक मन छाए, याद तरसाए
कैसे धरूँ धीर, देवो दरस मोहे" ॥¹⁷

अनुच्छिष्टोक्तिनिबन्धा, नूतनधातुविनिर्मितिज्ञान, द्रुतगीतविनिर्माण, प्रभूतप्रतिभोद्भेदभाक्त्व— पंडित कुमार गंधर्व के भीतर शीघ्र रचना करने की अद्भुत क्षमता थी। उनकी रचनाओं में प्रयुक्त काव्य तथा स्वरप्रयोग सर्वथा नए ताजे हैं। कुमार जी को भिन्न-भिन्न घटनाएँ शीघ्र कविता करने को प्रेरित करती थीं। वे एक स्वतंत्र रचनाकार थे। स्वयं शब्द रचना तथा स्वयं स्वररचना किया करते थे। आपके द्वारा प्रस्तुत विभिन्न विषयगत कार्यक्रम जैसे (टुमरी, टप्पा, तराना) गीत वर्षा, गीत हेमन्त, गीत वसंत, मालवा की लोकधुनें, त्रिवेणी, तुलसी एक दर्शन, इत्यादि आपकी कल्पनाशील बुद्धि का ही परिणाम है। पं कुमार गंधर्व के अनुसार, "थोड़ा बहुत गाना आते ही लगभग सभी गायक बंदिशें बनाने लगते हैं और गाने भी लगते हैं। पर बंदिश बनाई नहीं जाती, वह उत्स्फूर्त आती है और स्वर, लय और राग समेत आकार लेती है। ...शंकरा आया मतलब निश्चित क्या हुआ यह समझ लीजिये। राग, लय और शब्द सारे एक साथ आए। बाद में चिपकाए नहीं गए। बंदिश में इन तीनों का जन्म एक साथ होता है, सिर्फ कविता को एक राग में फिट करना यानी बंदिश, यह बंदिश की व्याख्या नहीं है। ऐसा नहीं कि पहले महीने में काव्य तैयार हुआ

और अगले महीने में उसे शंकरा की चौखट में ठोक दिया, वह सब एक साथ होने वाली क्रिया है" ॥¹⁴

अपने पौत्र की बाल लीलाओं से तंग आकर, राग श्री में तत्काल रचित यह रचना उत्तम वाग्गेयकार संबंधी उपरोक्त गुणों को दर्शाती है—

राग श्री, त्रिताल, द्रुत लय
स्थाई

"करन दे रे कछु लला रे
व वो परा जा रे, लेले लेवो रे ॥

अंतरा

अंतरा — ईको उढाले आकर कोई
ये उधम करे, लेले लेवो रे" ॥¹⁵

लयतालकलाज्ञान, अनेककाकुज्ञान, त्रिस्थानगमक प्रैद्धि— किसी भी उत्तम वाग्गेयकार को उत्कृष्ट रचना करने के लिए लय व ताल का ज्ञान होना आवश्यक होता है। कुमार जी की लय व ताल के भेदों से पूर्णतया परिचित थे, आपने विभिन्न तालों में अपनी बंदिशों को बाँधा है। कुमार जी को "काकु" का पूर्ण ज्ञान था। आप अपने गायन में भी "काकु" का बहुत उपयोग करते थे। यही कारण है कि आपकी रचनायें अत्यंत भावप्रधान हैं। पं कुमार गंधर्व एक सिद्धरत कलाकार थे। मन्द्र, मध्य, व तार तीनों सप्तकों पर आपका समान अधिकार था। तीनों ही सप्तकों में आपकी आवाज बिना किसी कष्ट के गमक लेने में सक्षम थी।

लय व ताल के महत्व को कुमार जी ने बन्दिश के माध्यम से इस प्रकार समझाया है —

राग भीमपलासी, ताल एकताल, लय विलम्बित
स्थाई

"नाद सो जानूरे सुरगानी
महाकठन ये बिस्तार धरम है ॥

¹⁷कुमार गंधर्व, अनुपरागविलास भाग-1, पृष्ठ-3

¹⁴कुमार गंधर्व, वसंत पंतदार, पृष्ठ-123-124

¹⁵कुमार गंधर्व अनुपरागविलास भाग-1, पृष्ठ-45

अंतरा

अंतरा – सुरत देखाए जब ये नाद-लय”

करो रे आघात सह लो

तब ताल सुर बन सार, धरम है”।¹⁶

अर्थात्- नाद अथवा शब्द का सच्चा आनन्द उसे ही प्राप्त हो सकता है जिसे सच्चे स्वर का ज्ञान मिला है सच्चे स्वर के साथ राग का विस्तार करना बहुत कठिन कार्य है। जब नाद और स्वर एकाकार हो जाते हैं उसी क्षण वहाँ पर आघात कर उस आघात को अपने भीतर सहन करना पड़ता है तभी ताल, सुर सभी एकाकार हो पाते हैं।

रागद्वेषपरित्याग, सार्द्धत्व, अवधान- पं कुमार गंधर्व अत्यंत सरल स्वभाव के व्यक्ति थे। आपके मन में किसी भी कलाकार के प्रति रागद्वेष की भावना नहीं थी। अपने समकालीन कलाकारों तथा वाग्गेयकारों के साथ आपके बहुत आत्मीय संबंध थे। समकालीन दिग्गज कलाकारों विशेष रूप से पं भीमसेन जोशी जी के साथ कुमार जी की बहुत घनिष्ठता थी। इस संबंध में वसन्त पोतदार अपनी पुस्तक में लिखते हैं- “दोनों की मातृभाषा कानड़ी उम्र में सिर्फ दो साल का फासला। दोनों के संबंध स्नेहपूर्ण। दोनों एक ही सम्मेलन में गानेवाले हों तो “हम एक दूसरे के तानपुरे मिला देते थे। इति भीमसेन ———हमारा नित्य का मेलजोल तो नहीं था पर मिलने का एक भी मौका हम नहीं गँवाते थे। एक बार जालंधर से मोटर द्वारा पूना लौटते वक्त मैं देवास गया। साथ था गुलाम रसूल (तबलची) शाम होने को थी। उसे बहुत आनंद हुआ। फौरन उसने मुझे गाने के लिए बैठाया। मैंने घन्टाभर मारवा गाया। हम दोनों ही थें। ऐसा मारवा गाया कि वह बहुत खुश हुआ। उसने टेप भी किया है, आप सुनिए कभी। फिर हमने एक साथ गाया। बहुत प्रेम था मुझ पर मेरे खिलाफ किसी को बोलने नहीं देता था”।¹⁷

पंडित रातंजनकर एवं पंडित जगन्नाथ बुआ पुरोहित जैसे सिद्धहस्त वाग्गेयकार अपनी बंदिशें कुमार जी के पास भेजते थे तथा कुमार जी बहुत सम्मानपूर्वक उन रचनाओं को अपने कार्यक्रमों में प्रस्तुत किया करते थे। आपके देवास स्थित घर पर समय-समय पर विभिन्न कलाकारों का आना-जाना लगा रहता था।

इस प्रकार यह कहा जा सकता है कि पंडित कुमार गंधर्व के भीतर पं शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के अधिकाधिक गुणों का समन्वय था। वे एक महान कलाकार होने के साथ-साथ एक उच्चकोटि के वाग्गेयकार भी थे। कुमार जी की अनेकों ऐसी बंदिशें हैं जिन्हें युवा पीढ़ी के गायक आज भी अपने गायन में सम्मिलित करते हैं। पं कुमार गंधर्व की बंदिशों की विविधता पर प्रकाश डालते हुए उनकी पुस्तक अनुपरागविलास की भूमिका में श्री वामन हरि देशपांडे लिखते हैं- “अलग-अलग घराने के गायकों को इस संग्रह में ऐसी बंदिशें मिलेंगी कि उन्हें लगेगा कि गोया ये बंदिशें खास हमारे लिए ही बनाई गई हैं। मिसाल के लिए राग कामोद में “ऐसन कैसन” बंदिश ग्वालियर घराने वालों को अपने घराने की प्रतीत होगी तो किराना गायकों को लगेगा कि वसन्त में निबद्ध “सपने में मिलती” उन्हीं के लिए है। इसी प्रकार जयपुर गायकों को जेंचेगा कि गौरी वसन्त की बंदिश “आज पेरीले” खास तौर पर उनके लिए ही है। मतलब यह कि इस संग्रह में, विभिन्न घराने के गायक विशेषकर हमारे लिए ही की गई अनेक बंदिशें पायेंगे”।¹⁸

इस प्रकार कहा जा सकता है कि पंडित कुमार गन्धर्व एक उच्चकोटि के वाग्गेयकार थे जिन्होंने, नवीन विषयवस्तु, भाषा एवं नए बिम्बों का प्रयोग कर, भारतीय संगीत के सभी घरानों के लिए उपयुक्त नवीन बंदिशों की रचना की तथा संगीत में नवनिर्मिति कर, भारतीय शास्त्रीय संगीत में महत्वपूर्ण रचनात्मक योगदान प्रदान किया।

¹⁶कुमार गंधर्व अनुपरागविलास भाग-1, पृष्ठ-21

¹⁷कुमार गंधर्व, वसन्त पोतदार, पृष्ठ-94-95

¹⁸वामनहरि देशपांडे, अनुपरागविलास, पृष्ठ-17

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How to cite this article: रवि जोशी, 2019. पंडित शारंगदेव द्वारा वर्णित उत्तम वाग्गेयकार के रूप में पंडित कुमार गन्धर्व का स्थान। क्वैस्ट-यू0जी0सी0-एच0आर0डी0सी0, कुमाऊँ विश्वविद्यालय, नैनीताल, Vol. 13, No. 1, pp. 35-42.

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ISSN 2230-8458

NOVEMBER 2020

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Belt and Road Initiative: Chinese Nationalism or Chinese Colonialism?

Prof. Kalpana S. Agrahari

Nationalism has been a perilous journey for China shaped by the historical factor of humiliation of great China by foreign powers. Recognizing China as a victim country is a core theme of Chinese edition of nationalism which accuses the imperial and colonist forces of 19th and 20th centuries for the loss of Chinese territory and its vanity. The people of China were full of pride and believed themselves as the epicenter of global politics until they faced setback in wars with Britain and Japan in the 19th century. The people of China have experienced different shades of nationalism with changing nature of ruling elites.

Nationalism has been a crucial factor for the ruling Communist Party in legitimizing its rule in the country since communist revolution. The slogan of 'China Dream,' coined by the president Xi Jinping, seeks to retrieve lost territories and to achieve the glory of past days. But paradoxically the success of the Nationalist card in favor of Communist Party of China lies on some other factors and the economic progress and prosperity is crucial one among these. The mega infrastructural project of BRI has been seen as an important tool to fulfill the ambitious China Dream which

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aims to reverse the process of financial stagnation of China by magnifying its international outreach. The mega project of BRI reflects the new offensive Chinese nationalism which aims its expansion with the forces of globalization.

The proposed paper is explanatory and analytical in nature. It proposes to refer to both primary and secondary sources of information. With the help of historical analytical method, this paper tries to investigate the aspect of new nationalism behind China's Belt & Road Initiatives, its impact and repercussions on global politics in order to conquer a better understanding. Along-with it also discusses what BRI is? its global footprint and tries to uncover the truth behind the controversies, myths of real motive of the Chinese mego project as the critics see it as the new colonialism, which is an expression of the hyper nationalism.

Introduction

Nationalism has been a perilous journey for China shaped by the historical factor of humiliation of great China by foreign powers. Recognizing China as a victim country is a core theme of Chinese edition of nationalism which denounces the imperial and colonist forces of 19th and 20th centuries for the loss of Chinese territory and its vanity. The people of China were full of pride and believed themselves as the epicenter of global politics until they faced setback in wars with Britain and Japan in the 19th century. The people of China have experienced different shades of nationalism with changing nature of ruling elites. As some analysts categorizes it in the era of 'socialist-oriented state control nationalism', the 'liberal nationalism' era, the 'patriotic nationalism' era and the recent phase of 'cyber-nationalism'.¹

Nationalism has been a crucial factor for the Communist Party of China in legitimizing its rule in the country since communist revolution. Elevation of nationalist feelings among the people has always been on the top agenda of the communist party, it endorsed the state nationalism through patriotic education as nationalism has been a tool to hide

the drawbacks of the ruling regime. The slogan of 'China Dream,' given by the president of China Xi Jinping, as soon as he assumed office in 2012, underlined the need for "great renewal of the Chinese nation." This ambitious China Dream seeks to retrieve lost territories and reshaping of border with its neighbour countries to achieve the glory of past days. But paradoxically the success of the nationalist card in favor of Communist Party of China lies on some other factors and the economic progress and prosperity is crucial one among these. The mega infrastructural project of BRI has been seen as an important tool to fulfill the ambitious China Dream. BRI has been visualized to reverse the impact of financial stagnation of China by magnifying its international outreach. The mega project of BRI reflects the new offensive Chinese nationalism which aims its expansion with the forces of globalization although both the processes are contradictory to each other.

With the help of historical analytical method this paper tries to analysis the aspect of new nationalism behind China's Belt & Road Initiatives, its impact and repercussions on global politics in order to conquer a better understanding. Along with it also discusses what BRI is, its global footprint and tries to uncover the truth behind the controversies & myths of real motive of the Chinese mega project as the critics see it as the new colonialism, which is expression of the hyper nationalism.

The Belt and Road Initiative of China

The BRI (Belt and Road Initiative) is a mega connectivity project of China to revive the silk road of ancient age. The BRI is a collection of projects, earlier officially branded by China as the 'One Belt, One Road' Initiative (OBOR). Connecting, the three continents of Asia, Africa and Europe, as a trade hub through a massive infrastructure of road, ports and rail is the aim of the project. Common estimations for Chinese funding under the BRI "range from \$1 trillion to \$ 8 trillion". It has been hailed as the biggest connectivity and infrastructure venture of the 21st century by China as more than 138

countries have signed this project. Initiated in 2013, the BRI project has now stretched deep into Africa, Asia, Europe, and even Latin America. It has become the new device for China's foreign policy, political and economic strategy, and a guideline for its aid and investment programs. This flagship program of China remains a subject of significant interest for strategic discussions, security concerns and academic discourses, all over the world. The mega project of China has been a matter of great argumentation among the analysts and academicians of the world with divided opinions that whether BRI is an altruistic effort of China to change the destiny of under developed and developing countries and to improve their level of life standard or it is a veiled instrument of the Communist Party of China to exploit the member states in colonial manner and destabilizing democracies through its debt trap and economic influence. The hegemonic approach of China is visible not only in the economic and Geo-strategic sphere, it is more evident in the institutional and informational sphere. There are various examples to prove that the non transparent contract deals with hidden clauses are the tools of the project to exploit the member states by China.

There have been various arguments by Chinese scholars that BRI is an effort to modernize the member nations and the process of modernization would turn the BRI nations towards democratization procedure. At the same time the critics of the BRI argue that the call of 'Common Destiny' by Chinese leadership is a manifestation of authoritarian ideology clothed in the wrapper of hyper nationalism, civil obedience and brute capitalism that poses a hidden agenda to alter the liberal ideology and democratic system of open societies based on free market economy and civil liberties.

BRI is known as the brain child of President Xi Jinping, who, for the first time revealed his proposal of a 'Silk Road Economic Belt', in a speech he delivered on 7 September 2013 in Kazakhstan, during his starting period in office. It is said that it was his personal

attachment with this project, which converted this idea so quickly into a striking scheme.

China presents this ambitious project as a comprehensive inventiveness with major prospective to advance the human development conditions with infrastructural boost in the continents of Asia, Africa and Europe, aiming to improve the lives of more than four billion people who resides in these areas. It aims also to enhance economic and political ties between different nation-states and their societies. The BRI initiative will be proved very beneficial for participating countries in terms of infrastructure and trade. China also claims that BRI is an easy solution for those small nations which cannot afford to obtain essential infrastructural developments otherwise.

It is a complex project, with different major components including roads, ports, railways and other infrastructure. While the land transportation and infrastructure activities as building of trans national roads and rail lines mostly via high speed trains, are associated with the BRI programme, other projects include the sea transportation infrastructure, known as the Maritime Silk Route, via trans-ocean infrastructure of ports. Obviously, it is a much complex project which breaks the traditional notions of national boundaries and encompasses the sphere of cooperation among different political systems, races, cultures, languages, religions and economies. As the Chinese media claims, encouragement of the regional economic collaboration for global prosperity and stability, are the more dominant factors for initiation of such massive project. Through expansion and improvement of infrastructural development, the connectivity of key centers of different countries will prove to be a boon for international trade. The expected timeline for completion of this project is said to be 2049, which will be the 100th centenary of the foundation of the 'People's Republic of China' also.

The blueprint of CPEC (China-Pakistan Economic Corridor), is the most significant chunk of BRI mega project, with the one of the heaviest Chinese foreign investment of around

\$ 60 billion⁵. In addition to Pakistan, Beijing has made significant agreements especially in India's immediate neighborhood with the Sri Lanka, Nepal, Maldives, Bangladesh etc., Bangladesh obtained the Chinese investment of \$38 billion under the Bangladesh-China-India-Myanmar Corridor, While Maldives, also agreed upon a free trade agreement with Beijing. According to a report published by World Bank⁶ earlier this year it was speculated that after completion, one third of global trade, GDP and nearly two-thirds of the world's population will be the part of the BRI.

BRI - the new nationalism of 'People's Republic of China'

With the beginning of the Xi era, the Communist Republic of China is witnessing a new type of nationalism; the **economic nationalism**. The roll out of the BRI is the manifestation of the new nationalism of China and is the sine qua non for its foreign as well as domestic policies. The BRI is more a geopolitical strategy rather than an economic project, which aims to take the Communist Republic of China to the center of international arena. The BRI initiative is not only for better connectivity program of China with rest of the world, it is more an effort to revert the economic stagnation within the China and to sort out the issue of domestic overproduction. The BRI has been visualized to undo the effects of the slowdown of the economy⁷ by using country's reserve money to finance projects under BRI and making the path for more and more demand for Chinese goods and services, to tackle the issue of sinking demand locally as well as globally. In total, under the ambitious mega project of the BRI, the government of China is in the quest of a continuous opportunity to increase its strategic, military and economic hegemony all over the world to fulfill its **Great China Dream**.

The closer observation of the real causes for endorsement of BRI project reveals an incongruous fact that though the forces of nationalism and globalization are contradictory to each other, in case of BRI, China is clamorously backing for the process of

globalization'. Under BRI, the infrastructure projects proposed to connect continents fulfill the broad logic of its "go out" policy, which emboldens to motivate the domestic economy via exportation of overproduction and investment of excess resources overseas. Accordingly, BRI is an important tool to balance economy through stable investments, even though the recent trend of anti-globalization in some parts of world, increase its vulnerability towards success of the mega project.

The new nationalism, though some analysts term it as the insecure nationalism of China, reflects in its offensive foreign policy, which is an attempt to balance the slippery slope of economic slowdown at home, that can create discomfort and distrust towards communist regime in the country and endanger the stability of the government. The constancy of the communist era is liable upon economic health of China, thus to continue the significant growth of past decades, the launch of the ambitious global project like BRI may be seen as a counter attempt to attend the economic slowdown that may impinge potential of China.

BRI fulfils another crucial interest of China at its home, with the help of BRI, it is trying to tame its backward Xinjiang Autonomous province dominated by Uyghur Muslim inhabitants¹⁰ which haunts the communist regime often. To sooth the cultural and social discomfort of the province, China is gambling upon economic development of the region. The communist government is hopeful that the smooth connectivity of the region with mainland China as well as with bordering central Asian countries of Kazakhstan, Kyrgyzstan and Tajikistan, will transform the alienated province as trade hub of the continent. The Chinese policy makers believe that these goodwill gesture initiatives will address the issues of Uyghurs' grievances and will help them to assimilate with majority of Han population of mainland China.

Simply put, BRI is the new tactical track of nationalism in China which not only trying to revive the legendary "Silk Road" to make China great again, it has been assumed as a very

useful device by Chinese leaders to promote development in its remote and backward areas and to protect national unity and stability.

Is BRI a new Colonialism?

At a time when China is vociferously displaying the grand success of its 2nd BRI forum meeting held in April 2019, suspicions looms worldwide towards Chinese motives. After initial jubilation BRI is now facing "push back", especially in south Asian region, reveals a study by the Union ministry of external affairs (MEA) of India. The report states that, "unacceptable conditions" executed on the partner nations is the main reason to push back¹¹.

At present most of the partner nations of BRI including Pakistan under CPEC project are now facing debt traps challenging their credibility to repay loans. The Voices all over the participating countries are demanding a review and second look of the projects under BRI, even some countries have started withdrawing. The Nepal government recently cancelled the 'Seti' hydropower project, after China pressurized the Nepal government for a guarantee of 17% of the cost besides¹² a sovereign guarantee. Scraping of the deal of \$ 318 million¹² to form an airport under BRI with Chinese partnership recently by Sierra Leone is another incident of trust deficit among partner nations of BRI.

Pakistan is the recent country in the list by denial of Chinese offer of loan of \$ 14 billion to its 'Diamer-Bhasha' Dam, deciding¹³ keep it out of CPEC due to high interest rate and other hard conditions being executed by Beijing related with the possession, maintenance and safety of the project¹³. Overburdened by interest of Chinese loan it seems Pakistan is trying to reassess the terms of the project. Pakistan has also trimmed its crucial BRI railroad project by \$ 2 billion¹⁴. According recent reports of Economic Times, the transaction of terrestrial property to Chinese companies in Gwader has been restricted through amendment in laws by the provincial government of Balochistan. The local sentiments are also against the CPEC in Balochistan, the destitute and disturbed

province of Pakistan, as the Baloch leader Aslam Bhootani, clearly stated that "Gwadar is not for sale".¹⁷ Chinese officials and workers are constantly facing threat by Baloch insurgents in the region. According a report in the Balochistan post, 4 members of the Pakistan armed forces were killed on 18th Feb 2019, in an attack by the 'Baloch Raji Ajoi Sanger' (BRAS), on the CPEC route in Balgatar area of Balochistan¹⁸.

In a recently published report, the 'European Foundation for South Asian Studies' stated that, "Beijing is knowingly patronizing Islamabad to turn it into a colony dependent on China for day-to-day survival", this Amsterdam-based think tank not only indicted China for taking advantage of an internationally alienated Pakistan because of its terror link but also warned against the disastrous impact of hegemonic Chinese culture upon the culture and society of Pakistan. It also mentioned that the higher rates of interest, blunt tariffs and additional charges will make it almost impossible for Pakistan to pay back the loan amount, compelling it to bend upon veiled Chinese conditions scratching its sovereignty.

The case of 'Hambantota Port of Sri Lanka,' is one of the most intense samples of China's ruthless use of financial aid and debt trap to expand its vast empire and influence all over the world. The funding for the construction of the port was earlier denied by India due to its non-feasibility as it was just 241 KM away from the Colombo Port. Finally China showered the money for the project without any hesitation. As it was expected, the port didn't work and Sri Lanka could not be able to settle up the loans and finally it was given no option by China except to hand over the port of strategic location to China for 99 years in December 2017 for a \$1.2 billion deal¹⁹.

This incident also justifies, the indictment of veiled colonialism upon the Belt and Road Initiative that through the easy available loan offer with high interest rate and tough hidden conditions, China is trapping the small and vulnerable countries to its debt net and eroding their sovereignty in to their own country and their own land²⁰. This is also a fact

that the Hambantota Port project was initiated in 2010 before BRI or OBOR was pronounced, but it was very soon altered in to the mega project of BRI by the China. The abduction of Sri Lankan port by China was declared by 'Xinhua' (The state news agency of China), as "another milestone along the path of #Belt and Road"²¹.

BRI faced another strong headwind when Prime Minister of Malaysia, Mr. 'Mahathir Mohamad' indicated for renegotiation of the projects with Chinese partnership. Even he warned China without any hesitation against a "new version of colonialism"²² in front of Chinese premier 'Li Keqiang' in the Beijing's 'Great Hall of the People'.

While resistance against geo-economic tools of China is on rise, the south Asian nation Maldives is working out to ascertain money owed to Beijing under BRI. According the reports of the Economic Times, "Maldives ministry of finance has set up its own task force to investigate the contracts signed with China by President Abdullah Yameen"²³ and many large projects funded by China are under scanner. Awakening to the risk of Chinese debt trap the new government of Sri Lanka is trying to woo other channels to finance its infrastructural development. Recently, it signed a \$1.85 billion deal with Japan for a project of light rail system in Colombo and \$1.3 billion concessional financing also accessible by its long term trusted ally India to renovate railway infrastructure of Sri Lanka.

Bangladesh, also remains doubtful to Chinese intentions, the 'China Harbour Engineering Company' the construction partner of 'Dhaka-Sylhet' highway under BRI was recently blacklisted by Bangladesh for trying to bribe the government officials, even the cost of road construction estimated by China is 10-15 times higher in comparison to international rates. Thus among rising suspicions towards Chinese intentions, Bangladesh has halted to borrow \$ 25 billion²⁴ promised by Xi under BRI two years back. In Myanmar too, the local people are vigorously resisting against the Kyaukphyu-Kunming²⁵ gas pipeline under BRI as it restricts their movement and day today life

recklessly and insensitively. Along with these incidents the region of Central Asia, which is very crucial to the success of BRI, is also witnessing discomfort and concern for their sovereignty with the growing economic and political interference of China. Kazakhstan was the first country where Chinese President Xi Jinping first time unveiled the ambitious OBOR project plan in 2013. Although Kazakhstan welcomes China's BRI initiative and its development aid but its consistent presence in the country is being a matter of distress. In Kazakhstan, the construction program under BRI, is ominously dependent on Chinese laborers, who come here on work visas. The growing population of these migrant Chinese workers, is a worrying factor as it not only fueling local confrontation and social anxiety but also inviting occasional violent disputes, the growing and visible anti-China sentiments are pushing the government to take the steps to alter Chinese²⁵ aid.

The pattern of uneasiness is also same in the Kirgizstan, where public opinion is highly "Sino phobic" towards growing Chinese dominance in the area as they feel that low-priced Chinese products have converted their country in to a "dumping ground"²⁶. The fragile economy and corruption charges against Chinese companies are other factors provoking anti-China rhetoric in the region led by violent means at times. There are widespread suspicions looms regarding incursion of Chinese culture through Chinese labour and migrants, unfair trade deals, non-transparent contract conditions, violations of environmental laws, disinclination for providing job to locals and lack of social accountability at all.

Conclusion

After the successful concluding of second BRI summit, China is trying hard to convince the global opinion that the super ambitious policy project of China, the BRI, "does not play little geopolitical²⁷ games", and president Xi Jinping insisted that BRI is not about to create the colonies for China rather it aims to construct a "community of common²⁸ destiny."

The irony is that despite these assurances many instances of trapped smaller economies in Africa, Southeast Asia, South Asia and Latin America, signs the BRI as a new form of colonialism where the Communist Republic of China is ruthlessly intensifying its influence.

This is a fact that from the past few years Chinese industries are facing the problem of over production, and the slowdown of the economy has worsened the situation, thus the infrastructure projects like BRI provides a good option to maintain the over-capacities of industries as well as the rate of economic growth. With the help of investment in massive infrastructural projects overseas and tricky trade tactics China has left no stone unturned to extract the natural resources, exclusively mineral deposits, gasolines and agrarian merchandises etc. from every nook and cranny of the world to full up the everlasting ravenous appetite of its industries.

Regardless of Chinese manifestation that BRI is an attempt to provide fund generously to boost the trade through the development of infrastructure worldwide, it's hard to decline the fact that it is rather an endeavor to address the domestic economic woes as well as the security and energy concerns of China, especially in Asia-Pacific region including South-China sea. To handle these challenges, the country is ready to exploit the same means by which it had been exploited in the past. The reality is that in the form of BRI, a new stratagem has been unleashed by China and the threat of neo-colonialism²⁹ has reached to new levels, to a number of partner countries of BRI, at least in the terms of the crippling debt burden of China. The unstable political systems and small economies of Asian and African continent are more vulnerable to this kind of colonization. The presence of China in 39 countries of African continent³⁰ with BRI flagship and its emergence as the principal trade companion of the continent is not a twist of fate.

There are various reasons to believe that the new silk route project is an effort of China to emasculate the current economic and

strategic structure of the international order. On many occasions the Chinese leadership has declared that making China the superpower of the world is their "historic mission" and only China has the potential to bring a new "political civilization" "across the world. The Chinese leadership envisions that the Chinese version of socialism is the key to resolve the problems faced by developed as well as under developing countries. Thus they visualize BRI as the expression of "Chinese wisdom"¹², intended to advantage the entire world. The developing world of Africa and many Asian nations are at the great risk of new wild colonial campaign run by China. This is an alarming time for the world to waking up to this massive issue, before it's too late.

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The Emerging Post-Pandemic World Order And Challenges for Foreign Policy of India

Dr. Kalpana S. Agrahari

The international crisis of health named COVID-19 has brought into focus the various contours of the emerging global geopolitical order. In the era of the COVID-19 pandemic, a new debate has arisen focusing on the theme of the beginning of a new global order and its effect in the post-pandemic era.

The dominance of the U.S.A. seems to be eroded with the emergence of China as an irresponsible superpower and the new cold war is knocking on the door. The growing rift between the U.S. and Chinese bilateral relations is the instantaneous strategic consequence of the problem while its gradual outcome is obvious with the speculation of an era of new cold war between the U.S. and China. Indian diplomacy is also facing the changing realities of the global order, thus a significant question arises, how its diplomacy could secure its status in challenging strategic situations? This research paper tries to analyze the emerging trends of post-pandemic world order and its challenges for Indian foreign policy and it also unearths the ways out for Indian diplomacy in a world predicted to be more unstable and more vulnerable, crippled with the financial catastrophe of unemployment, recession, insecurity, and much more other problems.

The international crisis of health named COVID-19 has brought into focus the various contours of the emerging global geopolitical order. In the era of the COVID-19 pandemic, a new debate has arisen focusing on the theme of the beginning of a new global order and its effect in the post-pandemic era. The rising global ire and disparaging opinion towards China with escalating tension between China and America are the indicators of the future global epoch. The indication of future world order is not only forcing the actors of international politics to act accordingly but to change their strategies to protect their national interests.

Indian diplomacy is also facing the changing realities of the global order, thus a significant question arises, what may be the challenges for Indian foreign policy in the emerging global order? And how its diplomacy could secure its status in challenging strategic situations? This research paper tries to analyze the emerging trends of post-pandemic world order and its challenges for Indian foreign policy and it also unearths the ways out for Indian diplomacy in a world predicted to be more unstable and more vulnerable, crippled with the financial catastrophe of unemployment, recession, insecurity, and much more other problems.

The Emerging Challenges

Since the Second World War, we have been familiar with an organized and institutional world order to a large extent. This world order seems in danger due to catastrophic challenges posed by COVID-19. The academicians, analysts, and intellectuals all around the world are predicting an inexact Post-COVID realm with the features of ultra-nationalist, localized, and anti-institutionalized world order.

Undoubtedly, the world is closer to a new global regime which may be characterized by only one thing certain, that is uncertainty. As the world is entering new unmapped terrain, the dominant

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f the U.S.A., established since World War II, seems to be eroded. With the emergence of China as an responsible superpower, the *new cold war* is knocking the door, while the other nations of the globe are still facing the economic and political shocks of the disease. The growing rift between the U.S. and Chinese bilateral relations is the instantaneous strategic consequence of the problem while its gradual outcome is obvious with the speculation of an era of new cold war¹ between the U.S. and China.

The U.S.A. initially showed a sympathetic attitude towards China in the outbreak of disease took a U-turn and showed a very hard stance against the communist regime, immediately, after the outbreak of the pandemic in its own country. The USA has not only accused China of mishandling the pandemic at the initial stage by trying to cover it up, it also blamed China for deliberately spreading the disease globally. Even Mr. Trump provoked China by calling it a Chinese Virus² and warned of serious consequences to face by China. Mr. Mike Pompeo, the Secretary of State of USA repeated his bombast against China and indicated that the USA has evidence that the virus emerged from the laboratory of China, although admitted that the doubt remains about the origin of it.

Retaliating to American allegations China not only accused the Trump administration of misgovernment but the official media of China had left no stone unturned in taunting the superpower of the world for its pitiable grip over the pandemic. The aggressive Chinese propaganda machinery tried it's best to link the origin of the infectious agent, spread by the American soldiers³, and termed it as bio-weapon against China and also blamed the western powers for racist discrimination against the Chinese people.

The excavating gap between both the superpowers was more highlighted when Mr. Donald Trump termed the outbreak of the pandemic in the country as the "worst attack"⁴ ever on the America which had attacked the US harsher than the Pearl Harbor incident of the Second World War or the 9/11 attacks on World Trade Centre. The offensive dialect of both the powers is perilous for stability and peace of the international order and the aftermath may be far-reaching, endangering the geopolitical stability and trade talks with devastating global economies. The pandemic has contributed to a new low in US-China relations, which were already highly strained due to trade confrontation and technological warfare. With the deferral of phase one of the trade deals, that was signed by Mr. Trump in January 2020, the U.S. has signaled that the economic and political separation is the fresh development of the bilateral relations of both the superpowers.

The other tendency, which became obvious as the repercussion of the contemporary global pandemic crisis, is *China's Rise*. As the U.S. is still struggling to hold the grip on the disease as the worst-hit country, the steps of the communist country are fast and adept enough to gain the benefit from slip-ups of the United States of America and to fill the vacuum of global leadership, emerged with the reluctance of America. The crisis has been cached by China as an opportunity to cover up the mess created by its own mismanagement and to publicize the effectiveness of its authoritarian system in dealing with the crisis in comparison to democratic ones. Trying to impose itself as an essential for the globe, China quickly provided physical medical support to the world. Beijing knows very well that to contest the position of a global leader and to replace the U.S., It must pretend to be working as a global leader and especially at a time when the so-called "superpower" is incompetent else unenthusiastic to do so. China has been successful in playing the role as a savior to a large extent as claimed by its official news agency that it sent more than 300 chartered planes⁵ with medicinal materials, such as masks, sanitizers, PPE Kits, and Test Kits to 48 countries along with, a hundred health experts. Its timely support to Italy not only helped to stabilize the fatalities in the worst-hit country of Europe it also disillusioned the dream of the European Union which responded very little to the call of Italy and Serbia. In the same manner, Chinese health diplomacy in the South Asian continent is active in the full motion also. And at a time, when the whole world is facing the catastrophic effects of the COVID-19 and lockdown, the Chinese economy is revitalizing its production volume after successfully shuddering off the effects of the pandemic.

China's rise as next to superpower has become a factor of great concern for the U.S.A., which played an important role in removing the isolation of the People's Republic of China, hoping that political and financial integration would pave the way for liberal democracy in the totalitarian state. Unfortunately, this hope of the U.S.A. Proven to be a mirage only, as the solidifying of the authoritarian regime of China with the global political and economic system has backed China to adopt a more aggressive posture and further irresponsible behavior. At present, when the whole world is facing the heat of pandemic originated in China, China is looking forward to assuming global leadership. Along with America's faltering actions and retreat from the leadership responsibilities has created a global vacuum of power and leadership.

Another major effect of the post-COVID-19 world is noticeable in the *rising skepticism towards the globalization process*. Since the 90s, the process of globalization has been daunting the international system, but the overwhelming proliferation of disease has amplified the anti-globalization sentiments. It appears the procedure of push back to globalization⁷, which is visible now all over the world with the feeling of "My Nation First", has been accelerated by COVID-19. There is a tendency among leaders of the world to concentrate on their own national and immediate interests rather than to focus on amalgamating the interests beyond their boundaries. The aftershocks of the crisis resulting in the devastating world economy may activate the policies of protectionism worldwide⁸. The growing rate of unemployment is forcing economies to move their globally distributed production units back to their own country. In the manner the world has faced the perils of dependency on overseas supplies, the countries are eager to rearrange their requirements of imports and put emphasis on the manufacturing of indispensable goods at their home. The call of India for '*Aatmanirbhar Bharat*,' is the action in the same direction. Across the continents from Europe to Asia, the rhetoric for protectionism and localism has been strengthened by nationalist leaders and parties.

Even the *failure of global organizations* like the U.N.O and W.H.O. has been observed globally as another effect of the pandemic. It is unfortunate to note that despite the severer threat posed to humankind since Second World War by the Corona virus, the first virtual meeting on the pandemic could be held, only in April 2020 because China, working as President of the U.N. security council, till March 2020, opposed and obstructed⁹ the proposal for discussion on the pandemic by security council and argued that it was not in the mandate of the security council to talk over the pandemic.

The diminishing status and controversial functioning of the World Health organization during the pandemic is also an issue of great concern. For seven decades, W.H.O. has played an important role as the crusader of global health as a part of the U.N.O., and the U.S.A. has been the biggest funder of it. But the controversial role of its Director-General "Tedros Adhanom Ghebreyesus", leaning in the favor of China has put the credibility of this global body at stake.

W.H.O. was openly blamed by the U.S. for layering up the spread and gravity of the pandemic in China, which ill-advised the world from responding more rapidly to the disease. Mr. Tedros, who was helped by China¹⁰ in getting elected as Director-General of W.H.O., praised China for its competent handling of the disease while sitting next to President Xi Jinping in Beijing's historic Great Hall of the People. He even criticized some countries for their precautionary travel restrictions¹¹ to China in the earlier phase of the pathogen. The controversial role of the world body finally resulted in the halving of funding and finally withdrawal¹² of the U.S. from W.H.O. on 29th May 2020. The deteriorating relevance of these institutions of international importance is a matter of great concern. It's true although that these institutions had been a tool of power politics in the hands of superpowers many-a-times. The harsh realities of the cold war era and the financial dependency of these institutions on big powers have always been a matter of concern and now, with the assumption of a new cold war between the U.S.A. and China, these institutions' functioning is at stake again. There is global demand for the reformation of U.N.O. and W.H.O. but within the harsh realities of power politics, it seems very difficult.

Another major development of the post-COVID world may be noted in the *rift of European Unity*, which has yet to overcome the shocks of Brexit. The contemporary catastrophic situation of the pandemic is much bigger than the challenging phase of the migration crisis, the financial crisis of 2008, and the North-South divide within Europe¹³ in the past, faced by it. The members of the Union, which have hardly survived the bumps of 2008 damage, are confronting the deep bruises to their economies as a repercussion of long lock-downs. The most worrying factor is the apprehensiveness towards the unrestricted motility of people, free borders, and services, which have been the core themes of the European Union. The one-sided closing of borders and stopping of air travel by some of E.U. member states defying 'Schengen-Visa' policy also brought a sharper focus on it. In the way the crisis was overtaken by China as an opportunity to deliver medical assistance to Italy, further denting the myth of European unity.

E.U. is at a position now, where it has to justify its being for its member nations. In the manner, the call of Italy to get medical equipment was turned down and the export of medical equipment and protective gear was banned by its fellow countries indicated the 'my-country-first mood' in the continent. In total, the question is yet to be answered that, 'Will the effect of the pandemic mutilate all efforts to maintain the unity¹⁴ of the E.U.?' In the current circumstances, it seems fairly difficult to maintain the imaginings of the united E.U. as a strategic superpower with liberal democracies, as the factors that kept it together, are now risking to pull it apart.

Challenges for Indian Foreign Policy

Since 2014 the world has witnessed a major shift in India's approach towards the world and now in the changing realities of the post-pandemic world, the switching of priorities in policies of government may be easily noticed. A lot of efforts have been initiated by the Indian diplomats at multilateral as well as bilateral level. New Delhi seems eager to expand its global reach through various efforts of comprehensive cooperation. The reflecting shift in strategic interests provides a new dimension to Indian foreign policy, to manage its internal and external interests.

While in the first tenure of PM Narendra Modi, the foreign policy of India tried hard to modify its image of a soft nation, in the era of Modi 2.0, India has been able to secure a position on the global stage as an influential and active player. During his first tenure¹⁵, by inviting SAARC leaders, for the swearing-in ceremony, the government of Modi signaled the goodwill gesture towards immediate neighbors, while at the commencement of the second era, the government focused to strengthen its ties with India's maritime¹⁶ geopolitical allies. The positiveness of the current NDA government reflects the warm relations and personal chemistry with global leaders.

The major issue at the front of foreign policy is to *balance the equation with the neighbor states*, many scholars feel that "This is the right time for New Delhi to reset its diplomatic policies in the favor of SAARC and maintain a distance with the U.S.A."¹⁷ as they still find the NAM as their fascinating drive force for the foreign policy of India. At present, while the nations of SAARC are leaning towards China, Indian diplomacy is on its toe to win the trust and fortifying the confidence-building measures through Medical diplomacy. On 15th March 2020, India tried to rejuvenate the SAARC forum via video conferencing. Despite the stubborn attitude of Pakistan, India instituted an Emergency SAARC Fund based on a voluntary contribution from member states and contributed USD 10 million¹⁸ initial aids by itself. Along with, its special 'Rapid Response Teams' of medical and paramedical teams with testing equipment were also offered to all immediate neighbors.

India paid special attention to African nations in the time of crisis and helped 25 African countries with consignments of essential medicines, including Hydroxychloroquine (HCQ) and Paracetamol, in addition to doctors and paramedics at a total cost of around US \$7.9 million¹⁹ mainly as a grant basis. The Indian diaspora also played its role by spreading awareness and donating money in emergency funds of respective countries and distribution of food, Masks, and sanitizers in the East African countries, especially in Nigeria and Kenya.

Despite its own limited resources, India had shouldered the responsibility as the *'generic pharmacy of the world'* in supplying the essential drugs such as HCQ and Paracetamol to across the globe. India also extended its support through digital means and conducted online webinars to train health workers for SAARC and African nation²⁶ and sharing its experience in controlling the pandemic along with research and progress in developing the vaccine and medicine. India donated essential drugs and medical aid to almost 40 nations²⁷ directly while 60 other countries including America, Europe, and Latin America had been also provided with commercial medicinal and other medical supplies. In addition to coordinate the global action to fight pandemic India virtually engaged almost 100 countries bilaterally and actively participated at multilateral forums of NAM, G20, BRICS, and RICS.

To find the ways to tackle the pandemic collectively Prime Minister Narendra Modi addressed the nations of "Global South" at the digital platform²² of "NAM" on 11th May 2020. This step was appreciated by many as a right step though taken late due to the reluctance of P.M. Modi in joining the earlier two summits of NAM in 2016 in Venezuela and 2019 at Azerbaijan subsequently. The avoidance of the NAM summits by PM Modi was pretended by many as the departure of Indian foreign policy from its independent posture, thus PM Modi's first engagement ever to the NAM was observed by many as a reversion of NDA's foreign policy. However, one cannot deny the relevance of NAM as an anti-western block or the remnants of the cold war as the world is again at the brink of a new cold war and NAM provides a significant²³ diplomatic space to safeguard its strategic interests.

India also motivated²⁴ Saudi Arabia, the present chair of G-20 for organizing a virtual conference on the COVID-19 pandemic on 26th March 2020. Addressing the Head of State's of the world's top 20 economies, PM Modi urged for increasing the budget of WHO and supported the idea for inoculating²⁵ a major amount of US \$ 5 trillion into the world economy to overcome the challenges of recession.

The generosity of Indian diplomacy under 'Mission Sagar' during the pandemic displayed India's vision of *'security and growth for all'* in the Indian Ocean Region. Under 'Mission Sagar'²⁶ India propelled special initiative for Indian Ocean island-nations of Madagascar, Mauritius, Seychelles, Comoros, and the Maldives and provided them Medicinal and Medical assistance with its Naval Ship 'INS Kesari'.

India also took part in the virtual conference of BRICS Ministers of Foreign Affairs²⁷ in the last week of April 2020 to discuss COVID-19 and the effects of the pandemic in BRICS countries. In his virtual address, Minister of External Affairs Mr. S. Jaishankar stressed the effectiveness of the bold step of early Lock-down of the Indian Government and various other efforts to check the spread of the disease. The participants of BRICS apprised the active role of New Delhi to supply medicinal and other support to other nations to contain the disease. Though, many experts feel that intensifying relations with China dominated BRICS is not a rational choice for India viewing its recent skirmishes at Line of Actual Control and its hegemonic approach²⁸ in the group. China, which already blocked the pandemic discussion proposal in the Security Council of the U.N.O., also ensured that none of the BRICS members supported the proposal for reforms²⁹ in the W.H.O., as presented by India. Thus, it's obvious that BRICS seems far away from its goal of creating an equality-based parallel world order to counter the west-led dominance.

This is true that Indian diplomacy very well presented it's humanitarian aspect globally and initiated the feeling of collective responsibility to contain and manage the pandemic with a united front, yet, it's diplomatic skills are to be tested on the parameter 'How it can manage the balance of relations with great powers?' Managing relations with China has been the most challenging task for the foreign policy of India. Keeping China in mind, India has carefully responded to the proposal of QUAD, while it had tried to develop a maritime partnership in the Indo-pacific region to contain Chinese expansionism. Till now, India has shown enough tolerance in maintaining relations with China despite it's provocative and aggressive expansionist policies, but it is the need of the hour to

explore hard-balancing options to counter the antagonistic tactics of the authoritative regime of China.

India has put special efforts to deepen its corporation with the U.S. in defense, strategic areas, and economic areas. With the growing rivalry with China, the US has also invested a lot in its relationship with India. Both the democratic systems not only share the core values and common interest but the recent bullying and irresponsible hegemony of China have made deep partnership necessary for both the countries, though, the areas of discomfort also persist particularly in the areas of immigration and especially in trade-related issues that need to resolve tactfully.

Summing Up

The contemporary circumstances in international politics reflect a kind of global leadership vacuum; the fragmented unity of the European Union does not place it in a leading position. Russia and the U.K., which could have shown some leadership potential seem disadvantaged by their own internal problems and economic slowdown. India, despite its moral power, appears far behind from the sight, which is, in great crisis and set to face graver challenges due to prolonged lockdown and globally second worst affected country by COVID-19. In such circumstances, China has left no stone unturned to pretend itself as the only country with the potential to lead the world. This situation creates the real cause of concern viewing the irresponsible and bullying behavior of the authoritarian state. Despite its controversial role in the global proliferation of the infectious virus and its mishandling of the epidemic, China seems unperturbed with global criticism and denouncement. Having had a quick command over the pandemic, it has attempted to exploit the global disaster very tactfully. Mocking the democracies for their inability to control the disease China is trying to justify the legality of its dictatorship.

In the light of these surroundings a common question has been raised by many; "Does India have the substantial capabilities and the moral authority to yield the leadership?" Many scholars believe it is an ambitious thought²⁹ as the current situations indicate that despite the potential, it would be very difficult for India to exploit the tapering position of China as its economy is also shattered with the catastrophic effects of the pandemic. This is a fact that Indian foreign policy is facing grave challenges today. Managing relations with China seems a very tough task for Indian diplomats keeping in mind the aggression and violent skirmishes at Galwan Valley. Hostility with Pakistan is increasing continuously, while Nepal has opened another front of antagonism. The relationship with other South Asian states looks fragile with the growing influence of China³⁰ in the region. Besides, India's financial health seems on the ventilator due to the lockdown effect.

India has the second-largest population in the world as well as a larger market and a liberal economy with a peaceful and great historical background of democratic practices and institutions. The rise of India to superpower status depends on various factors. Its recognition as an influential power in its own neighborhood matters a lot. India has followed a policy of support and aid for its South Asian neighbors with the expectation that in return they will keep in mind the strategic concerns of the country. With the growing Chinese efforts to encircle India in its neighborhood, India has no option except to expand its sphere of influence to the level that could counter the malign efforts of its rivals. To be treated equally to China India needs to understand that adequate military might and compatible economic weight is a must for great power aspiration. The willingness to use power to safeguard its sovereignty and national interests is also a precondition to be treated equally by one's peers. Thus to dream big New Delhi requires focusing on long-term military modernization policies and to work seriously on its economic capabilities. At the same time this is also a fact that the status of global leadership depends not just on the thickness of military might and share of GDP, but on the validity based upon potential and enthusiasm to aggregate and manage the worldwide reactions of problems to meaningful actions. Along-with the openness, tolerance, and plurality of the social and political system and responsible behavior are other parameters to be tested. As a plural democratic

LIFE-HISTORY OF OAK TASAR SILKWORM, ANTHRAEA PROYLEI FED ON QUERCUS GLAUCA UNDER LABORATORY CONDITIONS

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Abstract: *Antheraea proylei* Jolly was recorded under laboratory conditions at a temperature of 20-25°C and relative humidity was 60-65%. The biological table of this moth has been studied on *Quercus glauca* for the first time. A female laid about 90-120 eggs. The eggs are spherical in shape and creamish brown in colour. The incubation period of eggs was record 2 to 3 days. The larval duration from 1st instar to 5th instar varied from 40 to 47 days (43.0±2.84days) depending upon the temperature. The pupal stage lasted for 16-19 days while (18.2± 1.32days) the adults survived for 1 to 7 days (4.67 ± 1.21days). 20% of larval mortality and no pupal mortality was observed.

Index terms- Life-history, *Antheraea proylei*, *Quercus glauca*, morphological parameter

I. INTRODUCTION

India is the second largest producer of silk in the world and has large domestic market for silk products. The silk is produced by different types of silkworms belonging to the families Bombycidae and Saturniidae of the order Lepidoptera. Oak tasar silkworms are non-mulberry silkworm. (Devi, 2012) recorded different kinds of non-mulberry silkworms producing silk these are tropical and temperate tasar, eri, muga and anaphe but approximately 95% of global production of non-mulberry silk produced by tasar silkworm. The oak forests in Central Himalaya are the natural habitats oak feeding *Antheraea* species of the thirty species of *Antheraea* recorded worldwide (Crotch, 1956), thirty-one species have been reported from Indo-Australian region (Seitz, 1933). Alborough (1986) and Singh et al. (2000) have reported on the distribution and food plants of *Antheraea* species. A number of families depends on cultivation of oak tasar for their livelihood in Central Himalayan region of Uttarakhand but the farmers face of number of constraints in the selection of area for culturing and the food plant. A number of studies on the growth, development, cocoon yield and reproduction of *Antheraea* species fed different food plants have been reported (Ranjan et al., 1996; Kumar et al., 2013; Nath and Joshi, 2015; Singh et al., 2017; Subharani et al., 2017). However there are no reports on life-cycle and morphometric characters of different stages of *A. proylei* reared on *Q. glauca* under laboratory conditions.

II. MATERIALS AND METHODS

Temperature plays an important role in influencing behaviour, growth, reproduction and mortality rate of insects. (Benjamin and Jolly, 1986; Shiva Kumar et al., 1987). The life-cycle of *A. proylei* was studied under laboratory conditions (temperature 24-25°C and relative humidity 60-65%).

A. Stock maintenance: Eggs are collected from Regional Sericultural Research Station (RSRS), Bhimtal and brought in laboratory. Eggs for incubation were kept in petridishes placed on moistened blotting paper in order to prevent them from desiccation. On hatching, larva were fed with fresh tender leaves of *Q. glauca* daily.

B. Morphometric parameters: The larval length, pupal length and adult body length were measured from head to the abdomen. The wing span of adult was also measured. All the measurements were done with the help of a scale. The larval weight, pupal weight, cocoon weight and shell weight are measured through weighing machine.

III. RESULTS AND DISCUSSION

1. Duration of development: The duration of development of *A. proylei* is presented in Table 1. The duration of eggs was 2.6 ± 0.86 days while of the larvae 43 ± 2.84 days. The duration of first instar was 5.4 ± 0.48 days, second instar 6.4 ± 0.48 days, third instar 7.2 ± 0.4 days, fourth instar 9.8 ± 0.74 and fifth instar 14.2 ± 0.74 days. The duration of pupa was 7.4 ± 0.48 days. Dash et al. (1992), Ojala et al. (2005), Behmer (2006), Cizek et al. (2006) and Jena (2016) have reported that required nutrition and suitable host plant enhance the development and growth of insect larvae. Subharani et al. (2017) reported that the larvae of *Antheraea proylei* when fed on *Q. serrata* and *Q. griffithi* took 38 days, took 43 days when fed on *Lithocarpus dealbata*. In comparison, the larvae of *A. proylei* fed on *Q. glauca* completed their development in 42 to 48 days in the present study and fall in the range as reported by Subharani et al. (2017).

2. Morphological characteristics

A. Eggs: The morphology of eggs represents that they are oval in shape and are laid in masses. Freshly laid eggs are brownish white in colour. After chemical washing, some of them turn greenish-white in colour, while majority of the eggs are creamish brown in colour. The duration of egg laying is upto 72 hours and a female laid 90-120 eggs in one time.

B. Larvae: The newly hatched larvae are black in colour. The larvae changes to light green colour on reaching second instar stage. From third to fifth instar stage, the colour of larvae is shiny green. Narayanan et al. (1967) postulated that growth of silkworm is favoured when it is fed on tender leaves having higher nutritional value. The changes in climatic conditions, nutritional contents and feeding time period influences the larval body size (Davidowitz et al., 2004; Miller, 2005; He and Wang, 2006). On maintaining constant temperature and relative humidity ($24-25^{\circ}\text{C}$ and $60-65\%$, respectively) it was also observed that the length and weight of larvae increases significantly from first instar to fifth instar larval stages in the present study also.

C. Pupa: Pupa is reddish brown in colour and elongated oval in shape. The abdomen is movable. The weight of female pupa is heavier than male pupa in the present study as similar results have been reported for *A. mylitta* by Nayak and Guru (1998).

D. Cocoon characters: The cocoon characters was estimated by measuring cocoon weight and shell weight. Cocoon weight was $7.70 \pm 0.81\text{g}$ and shell weight was $1.15 \pm 0.104\text{g}$. Reddy et al. (2010) reported that superiority of food plants in oak tasar silkworm *A. proylei* is a major contributing factor for the higher and better quality yield of cocoon. Less larval mortality rate observed in case of *Q. serrata* as a host plant for larva, representing more yield in cocoon production. Low percent mortality was observed in *A. proylei* larvae fed on *Q. glauca* (host plant) in the present study also.

E. Adults: The moth is light-brownish in colour. The adult male is smaller in size (3.5 cm) than adult female (4.0 cm) in length respectively. The wing span of female moth is 12cm and that of male is 10cm. The moths survive for 1-7 days.

Mating behavior: The females mate only ones during their life span and lay upto 90-120 eggs, and survive for 3-4 days after laying eggs.

Table1: Duration of *Antheraea proylei* on *Quercus glauca* on leaves under laboratory conditions

Developmental stages	Duration (Days)	
	Range	Mean \pm SE
Eggs	2-3	2.6 \pm 0.86
Larva	First instar	5-6
	Second instar	6-7
	Third instar	7-8
	Fourth instar	9-11
	Fifth instar	13-15
	Total	40-47
Pupa	16-19	18.2 \pm 1.32

Table 2: Morphometric measurement of *A. proylei*

Developmental stages		Length (cm)	Weight (g)	Colour	Wing-span (cm)
Larva	1 st instar	1.21 \pm 0.03	0.0058 \pm 0.001	Black	-
	2 nd instar	2.40 \pm 0.023	0.077 \pm 0.004	Light green	-
	3 rd instar	3.15 \pm 0.042	0.19 \pm 0.01	Light green	-
	4 th instar	4.02 \pm 0.18	0.39 \pm 0.02	Light green	-
	5 th instar	8.23 \pm 1.93	0.88 \pm 0.50	Light green	-
Pupa		2.88 \pm 0.09	6.55 \pm 0.87	Blackish brown	-
Adult	Male	2.67 \pm 0.12	-	Light brown	2.67 \pm 0.12
	Female	3.13 \pm 0.066	-	Light brown	3.13 \pm 0.06
Cocoon weight		-	7.70 \pm 0.81	Brownish white	-
Shell weight		-	1.15 \pm 0.104	Brownish white	-

Acknowledgments

It is a pleasure to thank and acknowledge the scientists at the Regional Sericultural Research Station (RSRS), Bhimtal for providing laboratory facilities to carry out the rearing work.

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Spider Diversity in Rice and Mix Vegetable Agro-ecosystem in Bhabar Region of Nainital District, Uttarakhand

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ABSTRACT

Spiders play vital role in agro ecosystem as pest control agent. The present study was conducted in two different agro-ecosystems viz. rice and mix vegetable of Kaladhungi district Nainital, located in bhabar area of Kumaun region of Uttarakhand. The sample is obtained using hand picking method and sweep net method. The data analysis includes the Simpson Indices, Shannon-Weiner's diversity and Species Richness of species between two agro ecosystems. All diversity indices like Simpson Indices, Shannon-Weiner's diversity and Species Richness of spiders are found higher in mix vegetable field (0.96, 3.27, 4.98) and less in rice field (0.94, 2.96, 3.71) respectively. Most dominant species was Pardosa pseudoannulata comprises highest numbers of individuals (45) and most dominant family was Araneidae comprises 8 species. The major guild structure observed from study site were Orb weavers, branch dweller ground dwellers, space web dwellers, sheet web builders and foliage dwellers. The most dominant guild was an orb weaver comprises 45% of total species. The highest number of individuals was observed from mix vegetable crop field (414) and lowest from rice field (219). The results of the study revealed that the mix vegetable crop field is more favourable for spiders as compare to rice field.

Key words: Spider, Mix vegetable, Rice, Bhabar, Guild structure

Received 13.11.2019

Revised 11.12.2019

Accepted 03.01.2020

INTRODUCTION

Spiders or Araneae are members of the spider family Arachnida. They are the most common group of builders of spiral wheel-shaped webs often found in gardens, fields and forests. Araneids have eight similar eyes, hairy or spiny legs and no stridulating organs [12]. Spiders are ubiquitous in distribution, except for a few niches, such as Arctic and Antarctica. Almost every plant has its spider fauna, as do dead leaves, on the forest floor and on the tress during the winter [13]. There are about 45,700 recorded spider species and 114 families and they could achieve this level of diversity due to their higher adaptive value apart from morphological and behavioural uniqueness [1].

Spider is classified as generalist predator and has a great influence toward the structure of the community, especially the food chain and food web. Spiders play important role as the predator, especially the predator of insects and therefore they contribute to control the insect population [2,6]. Spiders are little studied in environments like agro-ecosystems and nearby lands. In Uttarakhand, there is no study on the spider fauna in rice and vegetable plantations even though forest ecosystem have been studied in small extensions of Garhwal region, Uttarakhand [9]. The present study was conducted in two different agro-ecosystems of Bhabar region of Kumaun, Uttarakhand.

MATERIAL AND METHODS

Study area

The Kumaun region consists of a large Himalayan tract together with two submontane stripes called Terai and Bhabar. The present study was conducted in two different agro-ecosystems of Kaladhungi, district Nainital (longitude 79.3480°E, latitude 29.2854°N), which is located in Bhabar area of Kumaun region. Two different agro-ecosystems viz. rice and vegetable were chosen for study of spider diversity.

Sampling

The sampling was carried out from July 2018 to December 2018 with an average sampling interval of 15 days, covering different stages of the crop development. Two environments were sampled rice and mixed vegetables (cabbage, ladies finger, pumpkin, bitter gourd, ridge gourd). Two methods were used for spider collection viz. sweeping nets and hand picking method. The sampling was random in both crops. Sampling was made between 8:00 A.M. and 11:00 A.M. to minimise spider migration to the lower vegetation stratum due to high temperature at noon [3]. Temperature, pH and moisture of soil were measured and photographs were taken from canon digital camera. The specimens were preserved in 70% alcohol. The identification was made as per "Spiders of India" [11].

Data Analysis

The Shannon-wiener, Simpson Indices, Species Richness (Margalef) and Equitability (J) were used to calculate the spider's diversity in two sampling sites.

Shannon-Wiener equation: $H' = -\sum P_i (\ln P_i)$ where, P_i is the proportion of each species in the sample (Shannon and Wiener, 1949).

Simpson's equation: $D = \sum n(n-1)/N(N-1)$. Where, D = Simpson's index of dominance; N = the total number of individuals of all species; n = number of individuals of specific species per sample.

Species richness was calculated by Margalef's formula $SR = (S-1)/\log N$, where S = total number of species and N = total number of individuals present in the sample.

Equitability was calculated by formula: $Equitability = H/H_{max}$, where H = sum of $P_i (\ln P_i)$, $H_{max} = \ln$ (total number of species)

RESULTS

During the study period a total of 33 spider species belonging to 26 genera, grouped under 12 families were recorded in two different agro-ecosystems of Kaladhungi district Nainital (Table 1). It was observed that Araneidae was most dominant family comprised maximum number of species (8 species) followed by Salticidae (7 species), Tetragnathidae (5 species), Lycosidae, Oxyopidae (3 species) and Pholcidae, Linyphiidae, Nephilidae, Sparassidae, Theraphosidae, Therididae, Uloboridae comprise least number of species (1 Species). In terms of individuals, family Araneidae (29%) was dominant followed by Tetragnathidae (21%), Lycosidae (15%), Oxyoidae (10%), Salticidae (8%), Therididae (6%), Linyphiidae (4%), Sparassidae (3%), Uloboridae (1%), Pholcidae (1%), Nephilidae (1%) and Theraphosidae (0.3%) (Figure 2).

Abundance of spider was observed varied across two agro-ecosystems. The species richness and diversity of spiders was more in mixed vegetable and less in rice crop (Table 2). Maximum numbers of individuals were recorded in mixed vegetable (414) and less in rice crop (219) (Figure 1). In the present study the observation showed that the major guild structure was Orb weavers, branch dweller, ground dwellers, space web dwellers, sheet web builders and foliage dwellers. The highly dominant guild structure was orb weavers (45%) followed by branch dwellers (30%) and ground dwellers (12%). The rest are space web dwellers (6%), sheet web builders (3%) and foliage dwellers (3%) (Figure 3).

Table 1: Checklist of Spiders and their abundance in rice and mixed vegetable crop field (July 2018 to December 2018)

Family	Genera	Species	Rice	Mix Vegetable
Araneidae	<i>Araneus</i>	<i>Araneusmitificus</i>	-	+
	<i>Argiope</i>	<i>Argiopepulchella</i>	+	+
	<i>Cyclosa</i>	<i>Cyclosa bifida</i>	+	+
		<i>Cyclosagossypiata</i>	+	+
	<i>Cyrtophora</i>	<i>Cyrtophoracitricola</i>	-	+
	<i>Eriovixia</i>	<i>Eriovixialaglaizei</i>	-	+
	<i>Neoscona</i>	<i>Neosconanautical</i>	+	+
		<i>Neosconatheisi</i>	+	+
Pholcidae	<i>Crossopriza</i>	<i>Crossoprizalyoni</i>	-	+
Linyphiidae	<i>Nerienne</i>	<i>Nerienibirminica</i>	+	+
Lycosidae	<i>Lycosa</i>	<i>Lycosatista</i>	+	+
	<i>Pardosa</i>	<i>Pardosapseudoannulata</i>	+	+
		<i>Pardosasumatrana</i>	+	+
Nephilidae	<i>Nephila</i>	<i>Nephilapilipes</i>	-	+
Oxyopidae	<i>Oxyopes</i>	<i>Oxyopespankaji</i>	+	+
		<i>Oxyopes sp1</i>	+	+
		<i>Oxyopes sp2</i>	+	+

Salticidae	<i>Bianor</i>	<i>Bianorangulosus</i>	+	-
	<i>Evarcha</i>	<i>Evarcha sp1</i>	+	+
	<i>Hyllus</i>	<i>Hyllussemicupreus</i>	-	+
	<i>Menemerus</i>	<i>Menemerus sp.</i>	-	+
	<i>Plexippus</i>	<i>Plexippuspaykulli</i>	-	+
	<i>Stenaelurillus</i>	<i>Stenaelurillus sp.</i>	-	+
	<i>Telamonia</i>	<i>Telamoniadimidiate</i>	-	+
Sparassidae	<i>Heteropoda</i>	<i>Heteropodavenotoria</i>	+	+
Tetragnathidae	<i>Leucauge</i>	<i>Leucaugedecorate</i>	+	+
	<i>Tetragnatha</i>	<i>Tetragnathamandibulata</i>	+	+
		<i>Tetragnathajavana</i>	+	+
	<i>Tylorida</i>	<i>Tyloridastrata</i>	+	-
<i>Tyloridaventralis</i>		+	+	
Theraphosidae	<i>Lyrognathus</i>	<i>Lyrognathussaltator</i>	-	+
Therididae	<i>Argyrodes</i>	<i>Argyrodesargentatus</i>	+	+
Uloboridae	<i>Zosis</i>	<i>Zosisgeniculate</i>	-	+

Table 2: Diversity Indices of Spider species in rice and mix vegetable field of the study area (July 2018 to December 2018)

Diversity Index	Rice Field	Mix Vegetable Field
Simpson Indies	0.94	0.96
Shannon-Weiner's Diversity (H)	2.96	3.27
Margalef	3.71	4.98
Species numbers	21	31
Total Individuals	219	414

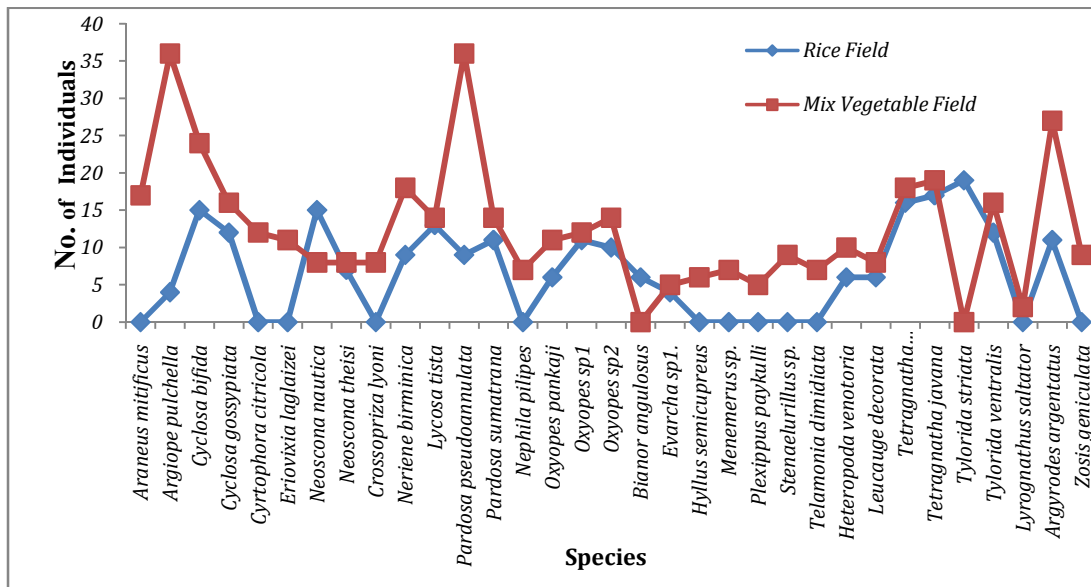


Fig. 1 Species diversity of spiders in rice and mix vegetable field (July 2018 to December 2018)

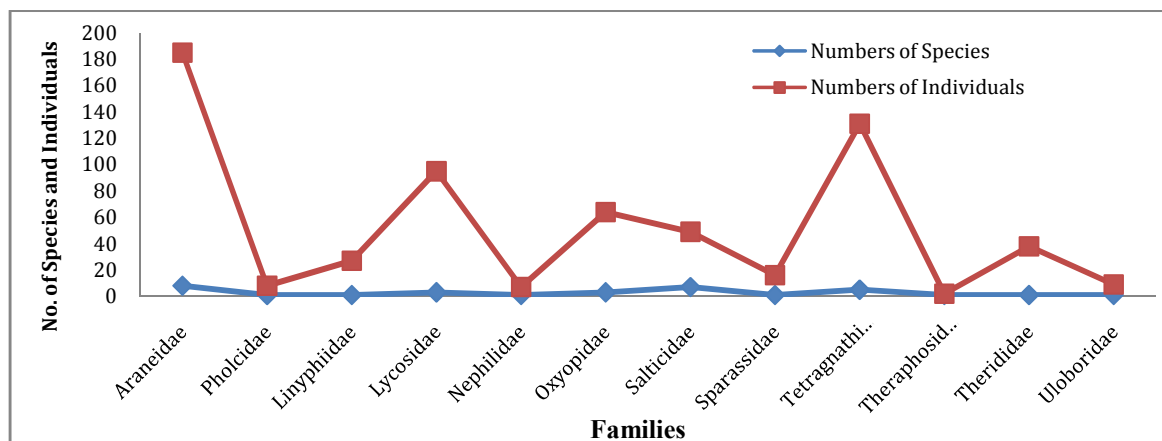


Fig. 2 Family wise diversity of spider in rice and vegetable field (July 2018 to December 2018)

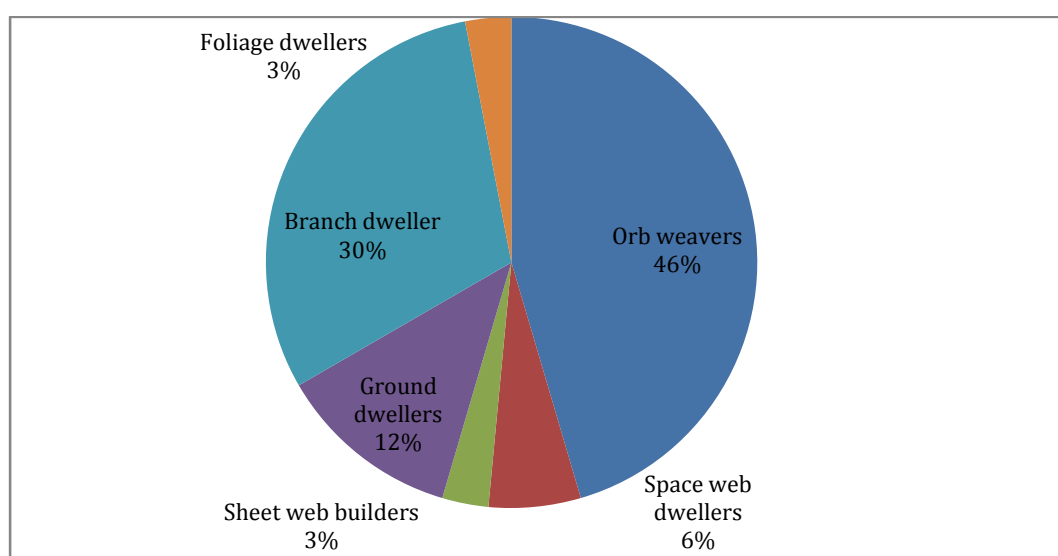


Fig. 3 Guild structure of spiders in rice and mix vegetable field (July 2018 to December 2018)

DISCUSSION

The Bhabar area of Kumaun Region of Uttarakhand is commonly endowed different agricultural and horticultural crops. The major crops in Kaladhungi are rice, wheat, sugarcane, mustard, millets and mix vegetables etc. Research on spider diversity in agro ecosystems is highly valuable; both to observe the effect of such predators have on herbivorous pest [7] and to understand how profound changes on the environment affect spider colonisation [8]. Thus, it is relevant to evaluate the spider fauna in the agro ecosystem surroundings as done in a few cases for the agriculture. Another potentially important factor is agro ecosystem change along plant development, since environmental heterogeneity may be increased by plant growth. Rypstra *et al.* [10] stated that spider assemblage density and diversity are intimately related to environmental structural complexity which may be increasing as plants become larger and more complex. Observations of present study indicate that the diversity of spiders was higher in mixed vegetable crop and lowest in rice field. This is probably due to vegetation type and disturbing factors as rice field experiences flood annually which may changes areas of earlier successional stages by removing organisms, organic matter and existing substrate and by depositing sediments [5].

Vegetation organization is one of the most important factors for spiders. In the study area, mixed vegetable field have dense vegetation and weeds. The growth of weeds promotes the migration of spiders from nearby habitat [14]. Dense and compact vegetation provide shadow and moisture, suitable environment for small spiders, especially of the families Theridiidae and Linyphiidae. These spiders find places for hiding in many small places of such habitats as they are exposed to water loss more than that of larger ones [4]. According to Root [10], guilds are groups of ecological organisms which utilizes similar or a single resource in a similar style. The present study showed orb weavers were dominant guild structure.

CONCLUSION

The present study indicates that Bhabaragro-systems of Kumaun, Uttarakhand are an ideal habitat for spiders. The study concludes that the species richness of spider higher in mix vegetable crops and less in rice crop. Thus, this work aims to evaluate spider diversity between the rice agro-ecosystems and mixed vegetable system.

ACKNOWLEDGEMENTS

Authors wish to acknowledge Head of the Department of Zoology, D.S.B. Campus, Kumaun University, Nainital for providing the basic facilities and infrastructure during the present study.

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CITATION OF THIS ARTICLE

J Siddhu, Himanshu P. Lohani, G Pathak and B.R. Kaushal. Spider Diversity in Rice and Mix Vegetable Agro-ecosystem in Bhabar Region of Nainital District, Uttarakhand. *Bull. Env. Pharmacol. Life Sci.*, Vol 9[2] January 2020 : 101-105