

Conservation and Digital Access of Available Rare Collections of Central Himalaya Region: A Study of Kumaun University

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Abstract - The main objective of the study is to conserve and preserve manuscripts/rare books available at DSB Campus, Kumaun University, Nainital, Uttarakhand, India. Eventually, digitized them and upload in digital repository software at G.B. Pant Library. A survey method is applied and twenty four (24) questionnaires are distributed to the twenty four (24) departments of DSB Campus, Kumaun University. In the survey, researcher got the total 53 rare books and 24 manuscripts from Zoology, Physics, Forestry, Sanskrit, and Hindi Departments. The manuscripts/rare books are not available in remaining nineteen (19) departments of this campus. Preventive and curative work is being done only in twenty four (24) manuscripts of Sanskrit Department, due to the scarcity of funds. After that the images was captured through camera then deciphering the manuscripts through subject expert and making digital repository of these rare documents in Dspace software. The result revealed that Zoology Department contains 44 (23008 folios) rare books of general zoology, entomology, fish and fisheries, genetics, invertebrates and amphibiology. Physics Department contains 1 (470 folios) rare books of spectroscopy. Forestry Department contains 3 (1208 folios) rare books of silviculture. Hindi Department contains 3 (500 folios) rare books aalochanaye and kavitaye and Sanskrit Department contains 24 (297 folios) manuscripts. The conservation process enrich the rare documents and digitization makes them global accessible. The purpose of this study is same and we have tried to make these said documents accessible within the library premises and save the rich heritage culture of Central Himalayan Region of Uttarakhand, India.

Keywords: Rare Books, Manuscripts, Kumaun University, Central Himalaya, Digital, Repository

I. INTRODUCTION

In India, there are a large number of manuscripts and other documents written during the last several centuries and now available in different institutions like museum, libraries, oriental research institutes, temples and in private hands. In fact the number is so large and wide spread that we do not have even a rough estimate of what is available in India and where. The problems of conservation are still more acute, because the materials on which the manuscripts and documents are written are extremely delicate and prone to deterioration. In India, before the paper was introduced, the main writing materials were birch-bark and palm-leaf. Both the materials get easily deteriorated and damaged.

In different departments of Kumaun University numbers of manuscripts are lying unmounted. Being information professional, it is my duty to conserve these manuscripts with the help of curators. Therefore, an effort will be taken to maintain and conserve these manuscripts as social and cultural heritage of Kumaun and by doing digitization and making Digital Repository we can provide the valuable information to all.

A manuscript is a handwritten text contains knowledge of more than seventy years and which have a historical, social and scientific value. It may be written in handmade paper, fabric, metal, palm leaf, etc. They are available in different languages and scripts all over the world. However, manuscripts written in one language are scripted in different scripts. Like, Sanskrit is written Devanagiri script, Grantha, Tamil and many other scripts. Similarly, manuscripts are different from historical records such as firmans, epigraphs on rocks.

II. REVIEW OF LITERATURE

McKay (2003) stated that now the technology has become integral part of museums, libraries and archive centres.

According to Smith (2000) the technology has changes the concept of libraries and archive centres. It can be seen in the methodology applied for the preservation and conservation process. The digital archive has change the concept of storage, now it can be stored in digital archive software and user can easily access these rare documents from their mobile and desktop.

Panitch (2001), in his study stated that when compared to the results of a survey of special collections across the membership of the Association of Research Libraries in 1998, their data reveal that collections have grown at an surprising rate. Archivists and special collections librarians in the America recognize that making more archival collections both discoverable and available for use is of paramount importance.

Greene and Meissner (2005) stated that an influential paper published in The American Archivist in 2005 has been an enormous catalyst in influencing archives to simplify the

processing of their collections in order to do so more rapidly and efficiently.

Erway and Schaffner (2007) stated that, OCLC research has actively encouraged the digitization process and make archival materials accessible. The reason behind for doing digitization of these special documents is that their reproduction in terms of publication is not possible, due to the change in format.

Gaur & Chakraborty (2009) in their study revealed significance of manuscripts and their magnificent past. They said that these manuscripts not only contain research matter but also disclose the rich heritage culture of India. Further, they said that in India have approximately five million manuscripts and it is the major contributor in terms of manuscripts wealth in the world. Our ancestors had preserve and conserve these manuscripts very carefully, but presently most of these valuable manuscripts are lying unmounted and no preservation work is going on. This is the reason the researcher are not getting these manuscripts accessible.

III. SCOPE

The present study only covers DSB Campus, Kumaun University and obtained manuscripts/rare books are conserved and digitized within a given budget provided by the Kumaun University under UGC Innovative Scheme.

IV. INTERDISCIPLINARY RELEVANCE

Library and Information Science is interdisciplinary subject, which includes information and communication technology. Due to inclusion of information science this discipline has wider its scope. This project shows interdisciplinary relevance in one part manuscripts and rare books are conserved with chemicals & handmade papers and on other part through digital repository software, these are archived in soft form. Due to this way the whole civic world can know the rich heritage culture of State of Uttarakhand, India.

V. IMPORTANCE OF THE STUDY

Historically, manuscripts have played an important role in our society. Today there are few peoples who can read these manuscripts. In some cases, manuscripts have been lost as a result of being sold by people who do not fully appreciate the value of these manuscripts to future generations. Manuscripts are easily damaged by insects and by the climate. It was recently discovered that manuscripts are sometimes burned and consumed in an attempt to cure diseases. The loss of these manuscripts would be a major loss to the cultural heritage of Uttarakhand. For this reason it is important to digitized manuscripts.

The present study provides data of rare books/manuscripts of DSB Campus. The G.B. Pant Library has taken initiative

to save these rare documents through preventive, curative and digitize work. The purpose is to make digital library, so that whole world can know about the rich heritage culture of Uttarakhand, India.

VI. OBJECTIVES

The main objective of the project is to conserve, maintain and develop a Digital Repository of manuscripts and rare books. However, the objectives of this work are as follows:

1. To find out how many manuscripts and rare books are to be digitized and require conservation;
2. To do digitization, cataloguing and conservation of available manuscripts and rare books;
3. To promote ready access to these manuscripts through digital repository; and
4. To save the manuscripts heritage of rich Kumaun and Gharwal culture of Uttarakhand.

VII. METHODOLOGY

A. Survey

A questionnaire is distributed to twenty four (24) departments of DSB Campus, Kumaun University. In questionnaire, name & status of organization or individual, number of manuscripts-material wise, subject wise, language, script, and condition related to manuscripts-whether they required curative work or they are to be digitized and catalogued- are some points which is included in it. Researcher got the total 53 rare books and 24 manuscripts from Zoology, Physics, Forestry, Sanskrit, and Hindi Departments.

B. Preventive and Curative Work

Due to financial restrictions preventive and curative work is done only in twenty four (24) manuscripts obtained from the Sanskrit Department by the researcher. However, the rare books portion is not done by him.

C. Image Capture

The researcher captures the images of manuscripts before and after the curative work. This collection of manuscripts in soft form will be helpful for deciphering their language, script, and subject.

D. Deciphering the manuscripts/Rare Books

After collection of manuscripts and rare books, the researcher has taken the subject experts' opinion to find out their subjects.

E. Making Digital Repository in Dspace software

Images are captured in JPEG format and they are in folio (pages) form or more than one page then these JPEG images

is converted in PDF format through PDF-converter. After that these manuscripts (soft copy form) is uploaded category wise in DSpace software (institutional repository), which is an electronic library software.

VIII. DATA ANALYSIS AND INTERPRETATION

A. To find out how many manuscripts and rare books are to be digitized and require conservation

Table I exhibit that Zoology Department has General Zoology (23 books, 10362 folios), Entomology (13 books,

8450 folios), Fish and Fisheries (3 books, 1014 folios), Genetics (2 books, 898 folios), Invertebrate (2 books, 1608 folios) and Amphibiology (1 book, 676 folios) as rare books. They require conservation, preservation and digitization work. Mostly of these books conditions are not good and they contains dust & dirt, loose binding, loose folios, tear, stain, crease marks, lost areas, foxing, acidity, ink stain, tear, stain, water stain and lost areas. Researcher has found forty four (44) books or twenty three thousand and eight (23008) folios (pages) in his investigation.

TABLE I AVAILABLE RARE BOOKS OF ZOOLOGY DEPARTMENT

S. No.	Branch	Number of books	Folios (Pages)	Conditions
1	General Zoology	23	10362	Dust & Dirt, Loose Binding, Acidity, Abrasion
2	Entomology	13	8450	Dust & Dirt, Loose Binding, Loose Folios, Tear, Stain, Crease marks, lost areas, Foxing
3	Fish and Fisheries	3	1014	Dust & Dirt, Loose Binding, Acidity, Stain, Water Stain
4	Genetics	2	898	Dust & Dirt, Crease marks, Abrasion, Loose Binding, Tear, Foxing
5	Invertebrate	2	1608	Dust & Dirt, Loose Binding, Acidity, Ink Stain, Tear, Stain, Water Stain
6	Amphibiology	1	676	Dust & Dirt, Loose Binding, Lost areas, Torn, Stain, Water Stain
Total		44	23008	

Table II exhibits that Physics Department has one rare book in the field of Spectroscopy (1 book, 470 folios) subject. This rare book requires conservation, preservation and digitization work. The condition of this book contains dust & dirt, loose binding, loose folios, tear, stain, crease marks,

lost areas, foxing, acidity, ink stain, tear, stain, water stain and lost areas. Researcher has found forty four (44) books or twenty three thousand and eight (23008) folios (pages) in his investigation.

TABLE II AVAILABLE RARE BOOKS OF PHYSICS DEPARTMENT

S. No.	Branch	Number of Books	Folios (Pages)	Conditions
1.	Spectroscopy	1	470	Dust & Dirt, Loose Binding, Acidity, Stain, Tear, Torn
Total		1	470	

Table III exhibits that Forestry Department has three rare books in the field of Silviculture (3 books, 1208 folios) subject. These rare books require conservation, preservation and digitization work. The condition contains dust & dirt,

acidity and stain. Researcher has found three (3) books or one thousand and two hundred and eight (1208) folios (pages) in his investigation.

TABLE III AVAILABLE RARE BOOKS OF FORESTRY DEPARTMENT

S. No.	Branch	Number of Books	Folios (Pages)	Conditions
1	Silviculture	3	1208	Dust & Dirt, Acidity, Stain
Total		3	1208	

Table IV exhibits that Hindi Department has three rare books in the field of Aalochanaye and Kavitaye (3 books, 500 folios) subjects. These rare books require conservation, preservation and digitization work. The condition contains

dust & dirt, acidity, stain, loose binding and tear. Researcher has found three (3) books or five hundred (500) folios (pages) in his investigation.

TABLE IV AVAILABLE RARE BOOKS OF HINDI DEPARTMENT

S. No.	Branch	Number of Books	Folios (Pages)	Conditions
1	Aalochanaye	2	340	Dust & Dirt, Loose Binding, Acidity, Stain, Tear
	Kavitaye	1	160	Dust & Dirt, Acidity, Stain
Total		3	500	

Table V exhibits that Sanskrit Department has three rare books in the field of Jyotish, Durga Istuti, Vyakaran, Jyotish, Istuti, Jyotish Ganit, Jyotish, Gaytri Istuti, Istrot Sahitya, Jwalamukhi Istotra, Shrimad Bhagwad Geeta, Vyakaran se Sambandhit, Mangal Vrat Pooja Vidhan, Istuti, Mantra Sadhna, Pooja Vidhan, Karmakand, Ved se Sambandhit, Nitya poojan vidhi, Ganesh pooja, Geeta Mhaprashuchi Patra, Bhu-Dhatu, Lakshan Grantha, Shiv Naam, Samayanirdesh, Jyotish, Vividh Devtao se Sambandhit, Vedic Mantra,

Rinharta Dev Sankalpa, Jantri, and Unknown (24 books, 297 folios) subjects. These manuscripts require conservation, preservation and digitization work. The condition contains dust & dirt, acidity, stain, loose binding, lost edges, acidity, hole's, loss of book cover, dust & dirt, lost edges, acidity, hole's, loss of written part, fungal infection, loss of book cover and tear. Researcher has found twenty four (24) manuscripts or two hundred ninety seven (297) folios (pages) in his investigation.

TABLE V AVAILABLE MANUSCRIPTS OF SANSKRIT DEPARTMENT

S. No.	Branch	Number of manuscripts	Folios (Pages)	Conditions
1	Jyotish, Durga Istuti, Vyakaran, Jyotish, Istuti, Jyotish Ganit, Jyotish, Gaytri Istuti	6	74	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
2	Istrot Sahitya	4	36	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
3	Jwalamukhi Istotra	1	6	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
4	Shrimad Bhagwad Geeta	1	12	Dust & Dirt, Lost Edges, Acidity, Hole's, lost of book cover
5	Vyakaran se Sambandhit	1	21	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
6	Mangal Vrat Pooja Vidhan	1	14	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
7	Istuti, Mantra Sadhna, Pooja Vidhan	1	5	Dust & Dirt, Lost Edges, Acidity, Hole's, lost of book cover
8	Karmakand	1	16	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
9	Ved se Sambandhit	1	11	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
10	Nitya poojan vidhi, Ganesh pooja	1	4	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
11	Geeta Mhaprashuchi Patra	1	4	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
12	Bhu-Dhatu	1	54	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of written part, fungal infection, Lost of Cover
13	Lakshan Grantha, Shiv Naam, Samayanirdesh, Jyotish, Vividh Devtao se Sambandhit, Vedic Mantra	1	18	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
14	Rinharta Dev Sankalpa	1	2	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
15	Jantri	1		Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
16	Unknown	1	20	Dust & Dirt, Lost Edges, Acidity, Hole's, Lost of Cover
Total		24		297

B. To do digitization, cataloguing and conservation of available manuscripts and rare books

The researcher has done conservation and preservation work of twenty four (24) manuscripts, which includes two

hundred ninety seven (297) folios of Sanskrit Department. The manuscripts conditions of before and after are display and same images are captured through camera for the purpose of digitization. Image 1; display the condition of manuscripts before curative work.



Fig. 1 Condition of Manuscript before work

1. Procedure of Preventive Work

Image 2, display separation and pagination process. Firstly, the folios are clean from dry brushes and the folded edges are done straight through twiser and paper spatula tools. This process is called dry brushing and preventive work and after it the counting of the folios are require from the front and back side both. The process of counting called pagination.

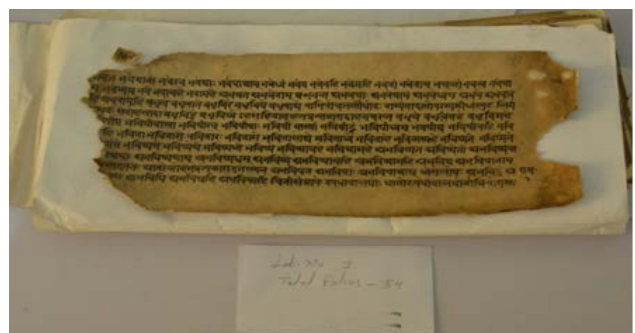


Fig. 2 Separation and Pagination

In the Image 3 folios are highly acidic so we have used the solution of Water, Ethanol, Acetone and Ammonia for the deacidification process. It is used to neutralize the acidity in the form of yellow marks from folios. 95% acidity may

removed by distill water. If the folios are more acidic then we use solution of 97% water and rest percentage of Ethanol, Acetone and Ammonia. The folios are covered with plastic net during the whole process of neutralization.



Fig. 3 Deacidification

In the Image 4, the folios are highly damaged and for this we require reinforcement of folios through sizing process. The purpose of sizing is to make the edges of folios strong

with the help of handmade paper and Gluten free starch paste.



Fig. 4 Reinforcement with Handmade Paper

Image 5, display tissue paper full lining on highly damaged and acidic folios. The process of lining is to make the folios strong and equal in size. The 9 GSM lance tissue paper and

handmade paper are used in this process. The purpose is to make the contents visible in the both sides. Same paper is used in the lining process by us.

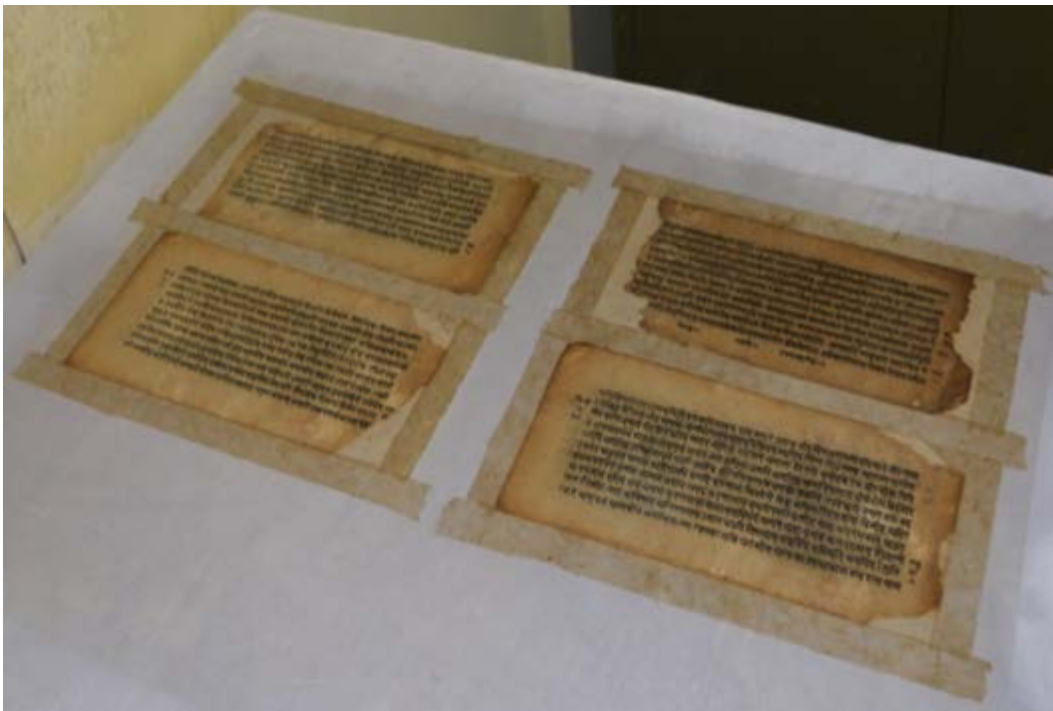


Fig. 5 Full Lining with Lance Tissue Paper

C. To promote ready access to these manuscripts through digital repository

The researcher has done conservation and preservation work of twenty four (24) manuscripts, which includes two hundred ninety seven (297) folios of Sanskrit Department. After finishing curative work of these manuscripts images are captured through camera. The purpose is to transform

images from hard copy to soft copy. These soft copies of manuscripts under different titles are uploaded in Digital Repository of G.B. Pant Library, DSB Campus, Kumaun University, Nainital. The purpose is to promote ready access to these manuscripts through digital repository. Image 6, display the GB Pant Library Digital Repository and within it Manuscripts community is being created.

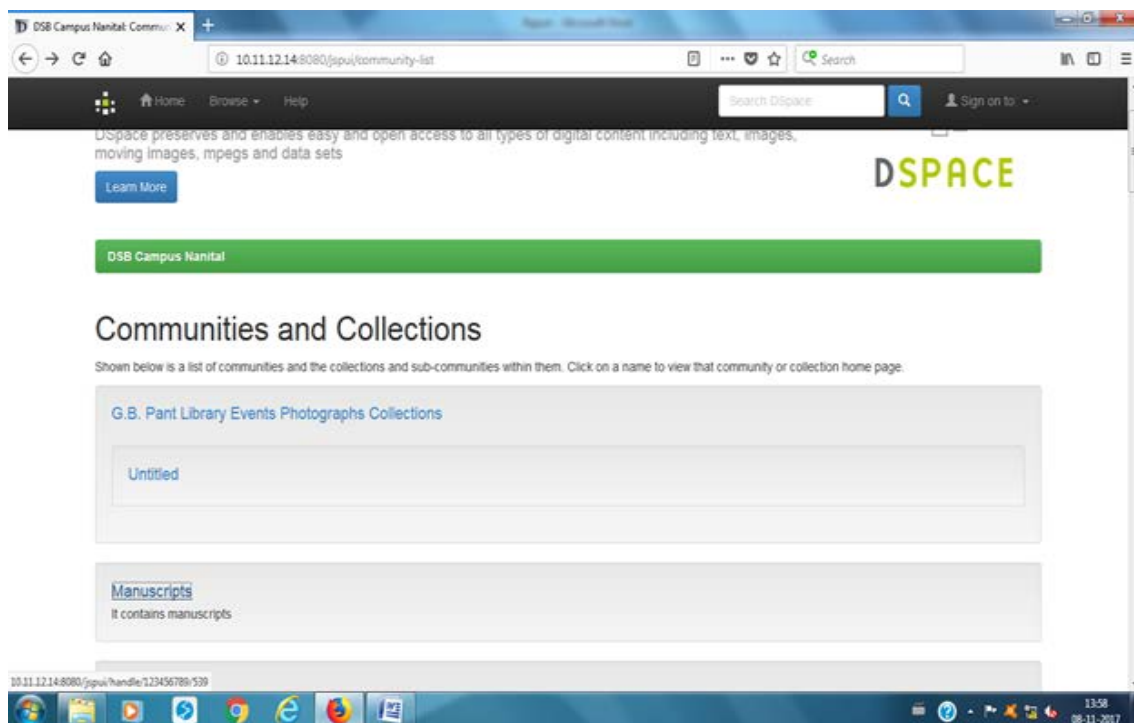


Fig. 6 GB Pant Library Manuscript Community

Image 7, display the Manuscripts collection entitled 'Jyotishi Stuti' and it contain pdf file. Any user can download this file through URL

<http://10.11.12.14:8080/jspui/handle/123456789/548> within the premises of the GB Pant Library, DSB Campus, Kumaun University, Nainital.

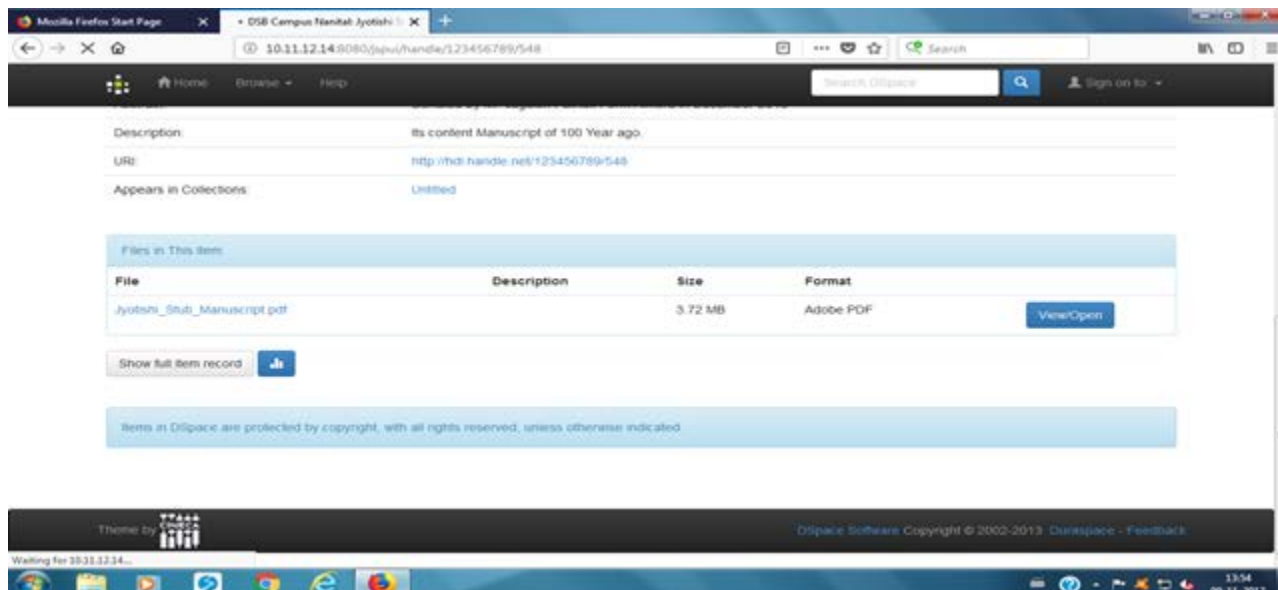


Fig. 7 GB Pant Library Manuscript Community

D. To save the manuscripts heritage of rich Kumaun and Gharwal culture of Uttarakhand

Manuscripts, which we have done curative work are available in the Sanskrit Department, DSB Campus, Kumaun University, Nainital and they are in Sanskrit language. We take expert opinion for exploration of the content and the title. Further they revealed that mostly manuscripts provide information about Kumaun and Gharwal rich custom, land use, economic condition, farming, social life, etc. Hence this way these manuscripts conserve the rich heritage culture of Kumaun and Gharwal.

IX. CONCLUSION

The survey discloses that there are fifty (51) rare books and twenty four (24) manuscripts found in the DSB Campus, Kumaun University. These rare documents contain twenty five thousand four hundred eighty six (25486) folios (pages) for the conservation and digitalization work. However, due to scarcity of funds only twenty four (24) manuscripts, which contain two hundred ninety seven (297) folios are conserved, digitized and uploaded in digital repository software of the campus library. The conservation process enrich the rare documents and digitization makes them global accessible. The purpose of our project is same and we have tried to make these said documents accessible within the library premises and save the rich heritage culture of Central Himalayan Region of Uttarakhand.

X. ACKNOWLEDGEMENT

This study is a part of a project funded by Kumaun University, Nainital, Uttarakhand, India under the Innovative Research Activity Scheme of UGC, New Delhi.

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