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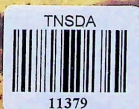
ARCHAEOLOGY OF THE GANGA PLAIN

28-31 December, 2004

संयुक्त वार्षिक अधिवेशन

आई.ए.एस.; आई.एस.पी.क्यू.एस.; आई.एच.सी.एस.

गंगा घाटी के पुरातत्त्व पर राष्ट्रीय सेमिनार



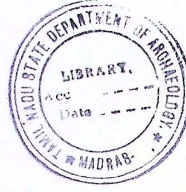
Souvenir
स्मारिका

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Folk and Tribal Arts and Culture Society &
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Souvenir

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National Seminar on the Archaeology of the Ganga Plain**

संयुक्त अधिवेशन

भारतीय पुरातत्त्व परिषद (XXXVIII); भारतीय प्रागैतिहासिक एवं चतुर्थक अध्ययन परिषद (XXXII);
भारतीय इतिहास एवं संस्कृति परिषद (XXVIII)

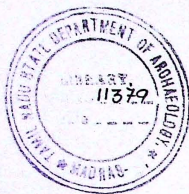
गंगा घाटी के पुरातत्त्व पर राष्ट्रीय सेमिनार

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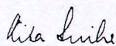
संदेश

यह मेरे लिए हर्ष का विषय है कि उत्तर प्रदेश राज्य पुरातत्व निदेशालय के तत्वावधान में जनजाति एवं लोक कला संस्कृति संस्थान तथा अन्य शोध संस्थाओं के सहयोग से लखनऊ में 'गंगा घाटी के पुरातत्व' विषय पर आयोजित किये जा रहे राष्ट्रीय सेमिनार तथा देश की तीन प्रमुख पुरातात्विक संस्थाओं 'इण्डियन आर्किओलाजिकल सोसाइटी आफ इण्डिया', 'इण्डियन सोसाइटी फॉर प्रीहिस्टोरिक एण्ड क्वाटर्नरी स्टडीज, तथा 'इण्डियन हिस्ट्री एण्ड कल्चर सोसाइटी' के 'संयुक्त वार्षिक अधिवेशन' का आयोजन लखनऊ में आयोजित किया जा रहा है। इस अवसर पर प्रकाशित की जा रही स्मारिका हेतु अपना संदेश देते हुए मुझे हार्दिक प्रसन्नता हो रही है। आशा है कि स्मारिका में सम्मिलित सामग्री, उपर्युक्त आयोजनों में सम्मिलित हो रहे प्रतिभागियों को, लखनऊ की भूसंरचना, स्मारकों, इतिहास तथा यहां स्थित पुरातत्व एवं उससे सम्बन्धित विधाओं पर शोध-कार्य सम्पादित कराने वाली संस्थाओं के कार्यों से परिचित कराने में सफल होगी। इस अवसर पर मैं हार्दिक शुभ कामनाएं व्यक्त करती हूँ कि राष्ट्रीय सेमिनार और पुरातात्विक संयुक्त वार्षिक अधिवेशन अपने मूलभूत उद्देश्यों में सफल हों।

रीता सिन्हा
(रीता सिन्हा)
प्रमुख सचिव
संस्कृति एवं पर्यटन
उ०प्र० शासन

FOREWORD

It is indeed a pleasure for me to write a foreword to the document of Souvenir on the gracious occasion of the organization of a "National Seminar on the Archaeology of the Ganga Plain by the Directorate of U.P. State Archaeology by seeking collaboration of the Folk and Tribal Arts and Culture Society and other research organizations, alongwith the Joint Annual archaeological conference of the Indian archaeological Society, Indian Society for Prehistoric and Quaternary Studies and the Indian History and Culture Society, scheduled to be convened at Lucknow. I believe the souvenir would successfully familiarize the delegates of the conference, with the geomorphology, monuments and the history of Lucknow, and with the researches as well being carried out here by different organizations in relevance to the varied archaeological perspectives. I extend my very best wishes for the success of the National Seminar and the Jt. Annual Archaeological Conference, aimed to the general awareness and the dissemination of archaeological information in its own right.


(Rita Sinha)

Principal Secretary
Culture & Tourism
U.P. Government

उत्तर प्रदेश राज्य पुरातत्त्व विभाग : संक्षिप्त परिचय

1. पृष्ठभूमि

उत्तर में उत्तुंग हिमालय, दक्षिण में बाबा विन्ध्य, पश्चिम में शैलजा-यमुना और पूरब में सदानीरा (गंडकी) के बीच स्थित गंगा-यमुना के हरियाले मैदान वाले, उत्तर प्रदेश की सांस्कृतिक/ऐतिहासिक धरोहरें निराली हैं। प्रस्तर युग से आज तक यहाँ मानव-सभ्यताओं का अनवरत प्रवाह चला आ रहा है। इस प्रदेश के काशी-कैलाश के महादेव शिव, सरयू तीरे बसी अयोध्या के रघुवंशी श्रीराम, कालिन्दी कूल के कन्हइया और कपिलवस्तु के सिद्धार्थ गौतम देश देशान्तरों तक पूजे जाते हैं। मालिनी तट पर पले बड़े दुष्यन्त पुत्र भरत ने इस देश को 'भारत' नाम दिया, बुद्ध का 'धर्मचक्र' तिरंगे पर लहराया और सारनाथ की लाट केन्द्र सरकार की सनद है।

क्रमशः पत्थर, तौबे और लोहे के उपकरण बनाने वाली संस्कृतियों के अवशेष, तदनन्तर बौद्ध स्तूप, मौर्य-शुंग और कुषाणकालीन कलाकृतियों, गुप्त-प्रतिहार और चन्देल कालीन प्रस्तर व इष्टिका देवालय, जौनपुर की शर्की, आगरा व फतेहपुर सीकरी की मुगलिया, अवध की नवाबी और तमाम यूरोपियन इमारतें इस प्रदेश की अनमोल विरासतें हैं। बनारस के घाट, देवगढ़ के मन्दिर, आगरा के किले-ताजमहल-सिकन्दरा-बुलन्द दरवाजा, लखनऊ के भुलभुलइया और रूमीगेट आदि के दर्शन पाने हर बरस हजारहों लोग यहाँ आते हैं। इनके अलावा यहाँ जगह-जगह प्राचीन सिक्के, अभिलेख, मुद्रा-छाप, पत्थर और मिट्टी की प्रतिमाएँ, मनके, चकरी आदि पुरासामग्रियों प्रभूत मात्रा में मिलती हैं, जो हमारे इतिहास के अनमोल साक्ष्य हैं।

भारत में उपर्युक्त ऐतिहासिक एवं सांस्कृतिक धरोहरों का अवगाहन 1784 में विलियम जोन्स द्वारा "एशियाटिक रिसर्च" की स्थापना के साथ प्रारम्भ हुआ। पाश्चात्य विद्वानों ने भारतीय अध्येताओं की सहायता से यह काम बड़े चाव, जतन और लगन से चलाया। 1861 में भारतीय पुरातत्त्व सर्वेक्षण की स्थापना के बाद इस दिशा

में और अधिक नियोजित अभियान चलाये गये। राज्य स्तर पर 1890 में मैसूर ने पुरातत्त्व विभाग की स्थापना करके पहल की। 1908 में त्रावणकोर, 1912 में कश्मीर, 1913 में ग्वालियर और 1914 में हैदराबाद और कालान्तर में और सूबों ने भी उनका अनुसरण किया।

2. स्थापना और विकास

1947 में आजादी प्राप्त होने के उपरान्त उत्तर प्रदेश के तत्कालीन शिक्षा मंत्री, डॉ. सम्पूर्णानन्द, की अध्यक्षता में गठित समिति की संस्तुति पर, 1951 में प्रदेश में पुरातात्विक सर्वेक्षण, पुरास्थलों, स्मारकों के संरक्षण, प्रकाशन और इस सन्दर्भ में जन-चेतना जगाने हेतु पुरातत्त्व विभाग की स्थापना की गयी। डॉ. कृष्ण दत्त बाजपेई इस विभाग के "पुरातत्त्व अधिकारी" के पद पर आसीन हुए। विभाग का कार्यालय आर्य नगर की एक इमारत में प्रारम्भ हुआ। लगभग 18 माह की अपनी अत्यल्प कार्यावधि में उन्होंने 51 लेख प्रकाशित कराये, 4 पुस्तिकाएँ लिखीं, अनेक व्याख्यान दिये और स्मारकों/स्थलों के संरक्षण के भी प्रयास किये, लेकिन 1953 तक यह विभाग समाप्त करके तदसम्बन्धी कार्य राज्य संग्रहालय को सौंप दिये गये। 1958-59 में पुरातत्त्व विभाग पुनः स्वतंत्र रूप से स्थापित हुआ, लेकिन 1962 तक इसके कार्य पुरातत्त्व अभियन्ता और उसके बाद 1965 में पुरातत्त्व सहायक द्वारा संचालित होते रहे। तदनन्तर 1965 में पुरातत्त्व अधिकारी की नियुक्ति के साथ विभाग ने अधिक सुनिश्चितता के साथ कार्य प्रारम्भ किया। 1974 में पुरातत्त्व अधिकारी के पद को "निदेशक" के पद में परिवर्तित कर दिया गया। विभाग का कार्यालय 1981-82 तक लखनऊ संग्रहालय एवं जवाहर भवन के नवम् तल से चलता रहा और फिर कैसरबाग स्थित रोशनदुदौला कोठी में स्थानान्तरित हो गया। इसके पूर्व सांस्कृतिक कार्य विभाग के अन्तर्गत होने के कारण सस्था का नाम बदल कर "उ.प्र. राज्य पुरातत्त्व संगठन" रखा गया। 1979-80 में

लखनऊ से बाहर कुमाऊ और गढ़वाल क्षेत्रों के लिये पहली क्षेत्रीय इकाई गठित हुई, जिसका कार्यालय प्रथमतः श्रीनगर (गढ़वाल) और कालान्तर में अल्मोड़ा स्थानान्तरित हो गया। नवें दशक में पौड़ी (गढ़वाल) और झाँसी तथा पिछले वर्षों में आगरा, गोरखपुर, वाराणसी और इलाहाबाद में भी क्षेत्रीय इकाइयाँ स्थापित की गयी हैं।

राज्य में पुरातत्त्व सम्बन्धी गतिविधियों को और अधिक गति प्रदान करने हेतु उत्तर प्रदेश शासन, संस्कृति अनुभाग की अधिसूचना सं. 2558/चार-96-6(2)/96, दिनांक 27 अगस्त, 1996 द्वारा उत्तर प्रदेश राज्य पुरातत्त्व संगठन का नाम "उत्तर प्रदेश राज्य पुरातत्त्व विभाग" तथा निदेशक, राज्य पुरातत्त्व संगठन को स्वतंत्र रूप में विभागाध्यक्ष घोषित कर दिया गया है।

3. उद्देश्य

उत्तर प्रदेश राज्य पुरातत्त्व विभाग के प्रमुख उद्देश्य निम्नवत् हैं—

1. प्रदेश की पुरासम्पदा का सर्वेक्षण,
2. प्रदेश के पुरास्थलों को उत्खनन,
3. प्रदेश की पुरासम्पदा का संरक्षण/अनुसंधान,
4. पुरातत्त्व विषयक प्रकाशन,
5. पुरातत्त्व और पुरास्थलों में लोकरुचि जगाना।

4. प्रमुख गतिविधियाँ

(1) सर्वेक्षण

इतिहास के जिन पक्षों की जानकारी लिखित स्त्रोतों से नहीं मिलती है, उनके लिये पुरातात्विक स्त्रोतों की सहायता ली जाती है। तदनन्तर प्राचीन टीले, मूर्तियाँ, सिक्के, अभिलेख, पात्रावशेष, किले, मन्दिर और मकबरे आदि पुरावशेष आते हैं। इसलिए इनकी समुचित जानकारी और संरक्षण अत्यन्त आवश्यक हैं। उत्तर प्रदेश में प्रस्तर युग से ही निरन्तर मानव सभ्यताएँ पुष्पित-पल्लवित होती रही हैं, इसलिये उनसे सम्बन्धित अवशेष पूरे प्रदेश में जगह-जगह बिखरे मिलते हैं। इतिहास लेखन में इनके उपयोग हेतु पहली जरूरत इनकी खोज और अभिलेखीकरण

की होती है। इसलिए उ.प्र. राज्य पुरातत्त्व विभाग का पहला दायित्व प्रदेश के पुरावशेषों का सर्वेक्षण कराना है।

पुरातात्विक सर्वेक्षण मुख्यतः तीन प्रकार के होते हैं :—

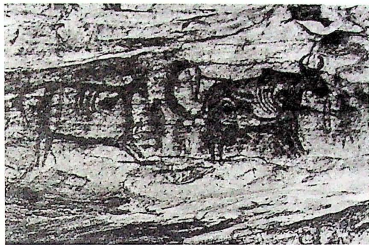
1. सामान्य सर्वेक्षण — किसी स्थल विशेष की सूचना मिलने पर स्थानीय निरीक्षण।
2. ग्राम स्तरीय सर्वेक्षण — एक क्षेत्र के सभी प्रकार के पुरावशेषों का व्यापक सर्वेक्षण।
3. समस्या प्रधान सर्वेक्षण — इतिहास/पुरातत्त्व की किसी समस्या के समाधान हेतु साक्ष्यों का अन्वेषण।

सामान्य सर्वेक्षणों को छोड़कर अन्य दो प्रकार के सर्वेक्षणों के लिए सुनियोजित योजना आवश्यक है। अतः नियोजन और सामंजस्य के लिए विश्वविद्यालयों और प्रदेश व केन्द्र सरकार के पुरातत्त्व विभागों से प्राप्त सर्वेक्षण प्रस्तावों पर विचारोपरान्त भारतीय पुरातत्त्व सर्वेक्षण द्वारा अनुमोदन प्रदान किया जाता है।

प्रदेश के जिन जिलों में भारतीय पुरातत्त्व सर्वेक्षण और विश्वविद्यालयों ने व्यापक सर्वेक्षण कराये हैं अथवा करा रहे हैं, उन्हें नक्शे में देखा जा सकता है। इसी नक्शे पर वे जिले/क्षेत्र भी प्रदर्शित हैं, जहाँ उत्तर प्रदेश राज्य पुरातत्त्व विभाग द्वारा सर्वेक्षण कराये गये अथवा प्रस्तावित हैं। अवशिष्ट भाग का सर्वेक्षण द्वितीय चरण में सम्पादित कराने की योजना है। समस्या प्रधान सर्वेक्षण आवश्यकतानुसार किसी प्राचीन नगर की पहचान, किसी विशिष्ट संस्कृति के अध्ययन आदि उद्देश्यों से किसी भी क्षेत्र में सम्पादित कराये जाते हैं।

सन् 1965 के पहले पुरातत्त्व संगठन द्वारा सामान्य प्रकार के सर्वेक्षण ही कराये जाते रहे। तदनन्तर अब तक वर्षवार सौ से अधिक ग्राम स्तरीय/समस्या प्रधान सर्वेक्षण अभियान चलाये गये हैं। इनके परिणाम समय-समय पर शोधपत्रों एवं प्रथक 'रिपोर्ट' में प्रकाशित किये जाते रहे हैं।

उपर्युक्त सर्वेक्षणों में सोनभद्र और मिर्जापुर जिलों से प्रस्तर युग के उपकरणों/स्थलों के अतिरिक्त सैकड़ों ऐसे चित्रित शैलाश्रय (रॉक शैल्टर्स) खोजे गये हैं जिनमें हजारों साल पुराने प्रागैतिहासिक चित्र (प्रीहिस्टोरिक पेंटिंग्स) निरूपित हैं।



शैलचित्र : लखमा, जिला सोनभद्र

सोनभद्र, मिर्जापुर, कानपुर देहात, बस्ती और गोरखपुर जिलों के सर्वेक्षण से पत्थर की पालिशदार कुल्हाड़ियों तथा ताम्रशयुगीन अवशेष मिले हैं जिनसे इन युगों (नियोलिथिक/चाल्कोलिथिक पीरियड) पर नया प्रकाश पड़ा है। मूसानगर क्षेत्र से प्रथम शती ई. पूर्व के स्तूप के अभिलिखित और अलंकृत अवशेष, बोधिसत्व की प्रतिमा और अनेक अत्यन्त सुन्दर मृण्मूर्तियाँ मिली हैं। विजयगढ़ के किले और आस-पास से 7वीं शती ई. के राजा नागेन्द्रवर्मा और नववर्मा तथा उत्तराखण्ड से मिले अभिलेखों से तत्कालीन इतिहास की नयी जानकारी मिली है। इनके अलावा शैव, वैष्णव, शाक्त और सौर सम्प्रदायों की बहुसंख्यक प्रतिमाएं प्रकाश में आयी हैं जो समकालीन धर्म के साथ-साथ शिल्प-कला के उत्कृष्ट आयामों से भी

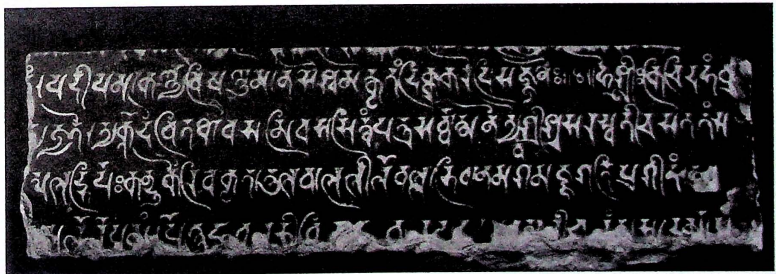
साक्षात्कार कराती हैं। इनमें सम्मिलित महेश्वर-महावाराह, भगादित्य, द्वयानन वाराही, राम और कृष्ण कथा-फलक जैसी प्रतिमाएँ विशेषतः उल्लेखनीय हैं। उत्तराखण्ड के सर्वेक्षण से नागर शैली के रेखा शिखर, पीढ़ा देउल शैली के चौकोर, हाथी की पीठ की तरह गोल, वृत्ताकार एवं अन्य प्रकार के शिखर वाले बहुसंख्यक मन्दिर सामने आये हैं। वास्तु-कला के विभिन्न पक्षों पर इनसे महत्वपूर्ण जानकारी मिली है।

उपर्युक्त अवशेषों के विस्तृत विवरण पुरातत्त्व संगठन की रिपोर्टों में प्रकाशित किये गये हैं।

(2) उत्खनन

पुरातत्त्व विभाग का दूसरा प्रमुख दायित्व इतिहास लेखन में किसी विशिष्ट समस्या के समाधान हेतु वैज्ञानिक दृष्टि से पूर्ण सन्दर्भ सहित प्रामाणिक साक्ष्य जुटाने में योगदान करने के लिये पुरातात्विक उत्खनन कराने का है। भारत सरकार के "प्राचीन संस्मारक तथा पुरातात्विक स्थल और अवशेष अधिनियम 1958" की धारा 21, 22 के प्रविधानों के अनुरूप उत्खनन के प्रस्तावों पर केन्द्र सरकार का अनुमोदन अनिवार्य है। 'सेन्ट्रल ऐडवाजरी बोर्ड' की संस्तुति पर केन्द्र सरकार के भारतीय पुरातत्त्व सर्वेक्षण द्वारा यह प्रस्ताव अनुमोदित किये जाते हैं।

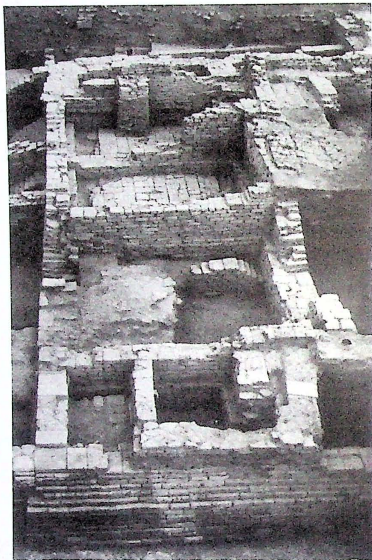
उत्तर प्रदेश राज्य पुरातत्त्व विभाग द्वारा अब तक प्रदेश में निम्नलिखित पुरास्थलों का उत्खनन कराया गया है।



अभिलिखित प्रस्तर फलक, ठाकुर बाबा मन्दिर, शनिवरा, सुल्तानपुर

1. **सीतापुर जिले की सिधौली तहसील में स्थित मनवा डीह के टीले का उत्खनन/अन्वेषण 1968-70 के मध्य कराया गया है। तदन्तर्गत सातवीं शती ई. पू. से दसवीं शती ई. तक के पुरावशेष मिले हैं जिनसे इस क्षेत्र के सांस्कृतिक कालानुक्रम का निर्धारण किया जा सकता है। यहाँ से प्राप्त गुप्त और कुषाण कालीन मृणमूर्तियाँ विशेष रूप से उल्लेखनीय हैं।**
2. **प्रतापगढ़ जिले में सराय नाहर राय नामक प्राचीन स्थल पर 1971-72 में कराये गये उत्खनन से मध्य प्रस्तर युगीन अवशेष मिले हैं। कालान्तर में इलाहाबाद विश्वविद्यालय द्वारा कराये गये अग्रेष्ठ उत्खनन में यहाँ से 'होमो सापियन' (आधुनिक मानव) के अस्थि पंजर मिले हैं जिनसे पता लगता है कि इनकी औसत ऊँचाई 5 फीट 10 इंच होती थी। मनकों वाली माला जैसे गहनों से सजने वाले ये आदिम मानव पत्थर के उपकरण और अस्थि-बाण प्रयोग करते थे और मृतकों को भूमि में दफनाते थे। इनका काल लगभग 10,000 वर्ष प्राचीन माना गया है।**
3. **विश्वास है कि कानपुर में गंगा के तट पर स्थित जाजमऊ के विशाल टीलों में प्राचीन ययाति नगरी के अवशेष दबे हुए हैं। इसका उत्खनन 1973-77 के बीच कराने पर आज से करीबन 2700 वर्ष पुराने अवशेष प्रकाश में आये हैं।**
4. **लखनऊ जिले में मोहनलालगंज के निकट करैला झील के बीच में स्थित हुलासखेड़ा के टीले का उत्खनन 1979-1986 तक कराया गया। यहाँ (आज से लगभग 3000 वर्ष से 500 वर्ष) तक के पुरावशेष प्रकाश में आये हैं। यहाँ के प्रारम्भिक निवासी झोपड़ों में रहते और अस्थि उपकरणों का प्रयोग करते थे। कालान्तर में पकी ईंटों के मकान बनने लगे। ईसा सन् की पहली-दूसरी शताब्दी में इनका चरमोत्कर्ष दिखता है। इस काल के आवासों के बीच गलियों के प्राविधान रखे गये और झील पार करने के लिये पक्की सड़क बनायी गयी। कुषाण और गुप्त कालीन आवासीय योजनाओं के अध्ययन के लिये इस**

उत्खनन से महत्वपूर्ण साक्ष्य मिले हैं। यहाँ से प्रथम शती ई. का कार्तिकेय के रुपांकन से युक्त एक स्वर्ण फलक मिला है। अपनी तरह का अब तक प्राप्त यह अकेला इतना पुराना उदाहरण है।

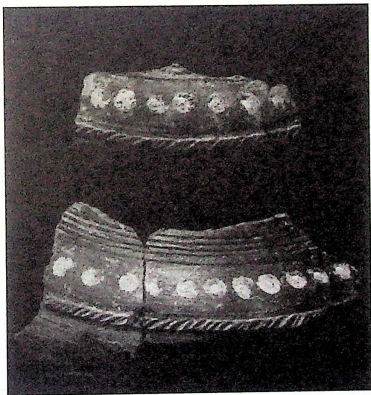


हुलासखेड़ा उत्खनन का एक दृश्य

5. **सुल्तानपुर जिले में धम्मौर के निकट स्थित शनिचरा के छोटे टीले के मलबे की सफाई से 9वीं-10वीं शती ई. के इष्टिका-मन्दिर की वास्तु योजना प्रकाश में आयी है। इसके साथ कन्नौज के गुर्जर प्रतिहार नरेश भोज का सुन्दर अभिलेख भी मिला है जिसमें उसकी दक्षिण विजय का उल्लेख है।**
6. **विन्ध्य और युमना घाटी की सीमा पर नवाशम/ताम्राशम युगीन सभ्यताओं के अस्तित्व और विकास के अध्ययन के उद्देश्य से कानपुर देहात और**

हमीरपुर की सीमा पर यमुना तट पर मूसानगर स्थित टीले का उत्खनन सन् 1994-96 तक कराया गया। यहाँ से लगभग 3000 वर्ष तक की सभ्यता के अवशेष मिले हैं।

7. सोनभद्र जिले के नगवा विकास खण्ड में कर्मनाशा नदी के बायें तट पर लगभग एक कि.मी. क्षेत्र में विस्तृत राजा नल के टीले का उत्खनन 1995-96-97 में कराया गया। तदन्तर्गत आज से लगभग 2000 से 3800 वर्ष प्राचीन अवशेष प्रकाश में आये हैं। इनके आधार पर इस जिले के इतिहास के अज्ञात पक्षों की महत्वपूर्ण जानकारी हुई है। यहाँ से लगभग 3200 वर्ष प्राचीन लौह अवशेषों का प्राप्त होना विशेष रूप से उल्लेखनीय है।



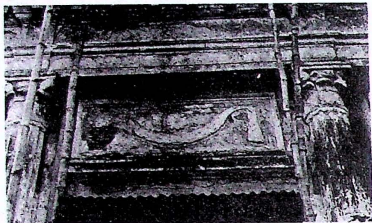
चित्रित पात्रावशेष, राजानल का टीला,
लगभग 1700 वर्ष ई. पू. जिला सोनभद्र

8. सोनभद्र जिले में बेलन नदी के तट पर स्थित नई डीह के प्राचीन टीले के उत्खनन से 1997-98 में लगभग 3000 वर्ष पू. से मध्यम काल तक के सांस्कृतिक अवशेष प्रकाश में आये हैं जो इस घाटी में प्रथमतः मानव बस्तियों के बसने का काल निर्धारण कराने में सहायक सिद्ध होंगे।

9. सोनभद्र जिले में ही बेलन नदी की एक छोटी सहायिका के बायें तट पर स्थित भगवास के प्राचीन टीले का 'साइन्टिफिक स्क्रैपिंग' का कार्य भी सन् 1997-98 में कराया गया है। इसके परिणामों से भी नई डीह के निष्कर्षों की पुष्टि होती है।
 10. चन्दौली जिले में कर्मनाशा नदी के तट पर स्थित मलहर ग्राम के प्राचीन टीले का उत्खनन 1998-99 में कराया गया। यहाँ से प्रकाश में आये अवशेषों से राजा नल के टीले के परिणामों की पुष्टि हुई है। इस स्थल पर लगभग 2600-2700 वर्ष से भी पहले की लोहा गलाने वाली भट्टियों का पाया जाना विशेष रूप से उल्लेखनीय है।
 11. लखनऊ जिले में नगवाँ नाला, सई नदी की सहायिका के तट पर स्थित दादपुर के प्राचीन टीले पर सन् 1999-2000-2001 में कराये गये पुरातात्विक उत्खनन से इस स्थल से लगभग 1700-1500 वर्ष ई.पू. के लौह उपकरणों का पाया जाना अत्यन्त महत्वपूर्ण उपलब्धि है।
 12. सन्त कबीर नगर जिले में खलीलाबाद के निकट स्थित लहुरादेवा के प्राचीन टीले पर सन् 2001-2002 से चल रहे उत्खनन से वहाँ आज से लगभग 8000 वर्ष पूर्व धान की खेती होने के साक्ष्य प्रकाश में आये हैं।
 13. लखनऊ विश्वविद्यालय के भूगर्भ विज्ञान विभाग के साथ जालौन जिले में काल्पी के निकट 2002-03 में कराये गये यमुना के कगार के उत्खनन से इस स्थान पर लगभग 40000-45000 वर्ष पूर्व की मानवीय गतिविधियों के साक्ष्य प्रकाश में आये हैं।
- नोट :- उपर्युक्त के अतिरिक्त 1959 के पूर्व राज्य संग्रहालय के पर्यवेक्षण काल में अष्टभुजा (मिर्जापुर), जाजमऊ (कानपुर), लखनेश्वर डीह (बलिया) और ऊँच गाँव (सीतापुर) के सीमित उत्खननों में मुख्यतः प्राचीन मन्दिर और मूर्तियाँ प्राप्त हुई हैं।

(3) अनुरक्षण / संरक्षण

सर्वेक्षण से प्रकाश में आये 134 स्मारक/स्थल उ.प्र. प्राचीन एवं ऐतिहासिक स्मारकों एवं पुरातात्विक स्थल एवं



रोशनदौला कोठी, अनुरक्षण के पूर्व



रोशनदौला कोठी, अनुरक्षण के बाद

पुरावशेषों के संरक्षण अधिनियम 1956 के अन्तर्गत उ.प्र. शासन द्वारा संरक्षित घोषित किये गये हैं। इनके रखरखाव एवं अनुरक्षण का कार्य पुरातत्त्व विभाग द्वारा कराया जाता है। 25 स्मारकों के अनुरक्षण का कार्य पूरा कर लिया गया है। स्मारकों का कार्य चरणबद्ध रूप से कराया जा रहा है। तदन्तर्गत स्मारकों का अनुरक्षण उनके मूल स्वरूप से सामंजस्य बनाये रखते हुए कराया गया है। उदाहरण के लिये अनुरक्षण के पूर्व और बाद के चित्र अवलोकनीय हैं।

4. प्रकाशन

पुरातत्त्व विभाग द्वारा सम्पादित सर्वेक्षण/उत्खनन कार्यों की उपलब्धियों को विवरण विभिन्न पत्र-पत्रिकाओं में शोध-निबन्धों और रिपोर्टों के रूप में प्रकाशित कराया जाता रहा है। अब तक ऐसे शताधिक लेख और रिपोर्टों का प्रकाशन करया जा चुका है।

पुरातत्त्व विभाग द्वारा राष्ट्रीय स्तर की एक वार्षिक



‘प्राग्धारा’ अंक-1 का विमोचन करते हुए
स्व. प्रो. कृष्ण दत्त वाजपेयी

शोध-पत्रिका ‘प्राग्धारा’ का प्रकाशन भी कराया जा रहा है। राज्य स्तरका देश में यह अकेला प्रकाशन है जिसमें उत्तर प्रदेश तथा मध्यप्रदेश, राजस्थान, गुजरात, कर्नाटक आदि अन्य राज्यों के विश्वविद्यालयों के पुरातत्त्व विभागों, भारतीय पुरातत्त्व सर्वेक्षण और बीरबल साहनी पुरावनस्पति संस्थान जैसी संस्थाओं द्वारा कराये जा रहे पुरातत्त्व सम्बन्धी अन्वेषणों पर आधारित स्तरीय शोध-पत्र प्रकाशित हो रहे हैं।

5. अन्य

1. शैक्षिक गतिविधियाँ

उ.प्र. राज्य पुरातत्त्व विभाग द्वारा कराये जा रहे सर्वेक्षण, उत्खनन एवं स्मारकों के अनुरक्षण सम्बन्धी कार्यों के सम्बन्ध में लोगों को जागृत करने तथा प्राचीन धरोहरों के महत्व से परिचित कराने हेतु समय-समय पर शैक्षिक कार्यक्रम आयोजित कराये जाते हैं। इसके अन्तर्गत नैनीताल, अल्मोड़ा, सोनभद्र, ललितपुर तथा लखनऊ आदि जिलों में विभिन्न कार्यक्रमों का आयोजन कराया गया है। जिसमें संगोष्ठी, छायाचित्र प्रदर्शनी, व्याख्यानों तथा स्मारक/स्थलों पर छात्रों को ले जाकर स्मारक तथा पुरावशेषों के महत्व के सम्बन्ध में अवगत कराना प्रमुख है।

2. संग्रहालयों से आदान-प्रदान

उत्खनन से प्राप्त पुरावशेषों को आम लोगों के अवलोकनार्थ संग्रहालयों में प्रदर्शित करने हेतु उ.प्र. राज्य

पुरातत्त्व विभाग द्वारा कराये गये उत्खननों से प्राप्त पुरावशेषों को निम्नानुसार संग्रहालयों को प्रदान किया गया—

1. लखनऊ जिले के हुलास खेड़ा नामक प्राचीन टीले के उत्खनन से प्राप्त कुषाणकालीन स्वर्ण पत्र पर निर्मित कार्तिकेय की प्रतिमा को उ.प्र. राज्य संग्रहालय

लखनऊ को प्रदान किया गया।

2. सुल्तानपुर जिले के शनिचरा ग्राम में स्थित प्राचीन देवालय के ध्वस्त अवशेषों के उत्खनन से प्राप्त उत्तर मध्यकालीन प्रस्तर अभिलेख एवं मूर्ति को सुल्तानपुर संग्रहालय को प्रदान किया गया।

उत्तर प्रदेश राज्य पुरातत्त्व विभाग के प्रकाशनों का वर्षवार विवरण

क्र.सं.	प्रकाशन का नाम	लेखक	प्रकाशन का वर्ष
1.	राजघाट की मृण्मूर्तियां	रामचन्द्र सिंह	1978
2.	"सम अननोन टेम्पुल्स इन लोअर हिमालयन रेन्ज, यू.पी." (अंग्रेजी)	आर.सी. सिंह	1982
3.	सर्वेक्षण रिपोर्ट—पर्वतीय पुरातत्त्व इकाई—अल्मोड़ा 1980—81	राकेश तिवारी	1983
4.	सर्वेक्षण रिपोर्ट—पर्वतीय पुरातत्त्व इकाई अल्मोड़ा 1981—82—83	राकेश तिवारी	1984
5.	कत्यूर घाटी की पुरातात्त्विक सर्वेक्षण रिपोर्ट 1987—88	हेमराज	1988
6.	पिण्डर घाटी सर्वेक्षण रिपोर्ट 1987—88, भाग 1	राकेश कुमार श्रीवास्तव	1988
7.	पिण्डर घाटी सर्वेक्षण रिपोर्ट 1988—89, भाग 2	राकेश कुमार श्रीवास्तव	1990
8.	"रॉक पेण्टिंग्स आफ मिर्जापुर" (अंग्रेजी)	राकेश तिवारी	1990
9.	सर्वेक्षण रिपोर्ट पिथौरागढ़—नैनीताल	हेमराज	1991
10.	"आर्कियोलॉजिकल पर्सपेक्टिव एण्ड फ्यूचर प्रॉस्पेक्ट्स इन यू.पी. सेमिनार प्रोसीडिंग्स" (अंग्रेजी)	सम्पादक—राकेश तिवारी	1992
11.	सर्वेक्षण रिपोर्ट—पौड़ी गढ़वाल, (1984—85—86)	गिरीश चन्द्र सिंह	1993
12.	सर्वेक्षण रिपोर्ट—ललितपुर (1988—89)	अम्बिका प्रसाद सिंह	1994
13.	पुरातात्त्विक सर्वेक्षण रिपोर्ट (1989—90—91) (पौड़ी—देवप्रयाग यात्रा मार्ग)	प्रहलाद कुमार सिंह एवं बुद्धि प्रकाश बडोनी	1995

क्र.सं.	प्रकाशन का नाम	लेखक	प्रकाशन का वर्ष
14.	पुरातात्त्विक सर्वेक्षण रिपोर्ट (1990-91) विकास खण्ड महरौनी, जनपद-ललितपुर	अम्बिका प्रसाद सिंह	1997
15.	पुरातात्त्विक सर्वेक्षण रिपोर्ट भाग-1 विकास खण्ड विरधा, जिला ललितपुर	अम्बिका प्रसाद सिंह	2003
16.	रिपोर्ट आफ दि डेबर्स क्लीयरेंस एट ठाकुर बाबा मन्दिर शनिचरा, सुल्तानपुर, उ.प्र.	राकेश तिवारी राकेश कुमार श्रीवास्तव गिरीश चन्द सिंह	2003
17.	पुरातात्त्विक सर्वेक्षण रिपोर्ट भाग-1 विकास खण्ड विरधा, जिला ललितपुर	अम्बिका प्रसाद सिंह	2004
18.	प्राग्धारा : उत्तर प्रदेश राज्य पुरातत्त्व विभाग की वार्षिक शोध पत्रिका	अंक 1-14	1991-2004

नोट :- उपर्युक्त के अतिरिक्त समय-समय पर पत्र-पत्रिकाओं में अनेक शोध-पत्र और लेख तथा फोल्डर और समीक्षाओं के प्रकाशन भी कराये जाते रहे हैं।

जनजाति एवं लोककला संस्कृति संस्थान, उ०प्र० एक परिचय

डॉ. योगेन्द्र प्रताप सिंह, निदेशक

जनजाति एवं लोककला संस्कृति संस्थान की स्थापना (Folk & Tribal Arts & Culture Society) 1995-96 में उ०प्र० संस्कृति विभाग के अधीन एक स्वायत्तशासी संगठन के रूप में की गयी। इसके प्रमुख उद्देश्यों में उ०प्र० की जनजातीय एवं लोक संस्कृतिक कलाओं का सर्वेक्षण, संवर्धन, प्रकाशन एवं प्रदर्शन है। उ०प्र० की लोक संस्कृति अत्यन्त समृद्ध है। ब्रज, बुन्देलखण्ड, अवध, भोजपुर और पश्चिमी लोक संस्कृतियों में रूहेखण्डी, कौरवी आदि की अपना एक सुदीर्घ परम्परा है। जनजातीय संस्कृतियों में मिर्जापुर, सोनभद्र, बहराइच, खीरी लखीमपुर, बांदा चित्रकूट आदि ऐसे जिले हैं जिसमें न केवल आदिम जनजातियाँ निवेश करती हैं अपितु पुरातात्विक दृष्टि से भी एक समृद्ध परम्परा संरक्षित है। संस्थान द्वारा अपने उद्देश्यों की पूर्ति हेतु किये गये कुछ प्रयास निम्नवत् हैं:-

1. शोध एवं सर्वेक्षण

जनजातीय संस्थान द्वारा जनजातीय संस्थान एवं लोक कलाओं को प्रोत्साहित करने हेतु सर्वेक्षण एवं शोध कार्य किये जा रहे हैं। भारत सरकार संस्कृति विभाग के माध्यम से 3 शोध परियोजनाएं स्वीकृत हुई हैं।

- | | |
|---|---------------------------------------|
| अ. उत्तर प्रदेश के लोक देवी देवता | शोध सर्वेक्षक : डा. लवकुश द्विवेदी |
| ब. उत्तर प्रदेश की भूमि एवं भित्त चित्र | सर्वेक्षक : डा. सुरेन्द्र सिंह चौहान |
| स. उत्तर प्रदेश की लोक आवास व्यवस्था | सर्वेक्षक : डॉ. योगेन्द्र प्रताप सिंह |

2. प्रकाशन :

- | | |
|---|---|
| (क) संस्थान द्वारा अपने प्रयासों से दो शोध परियोजनाएं स्वीकृत की गयी हैं। | |
| अ. मिर्जापुर जिले की खैरवार जनजाति का सांस्कृतिक सर्वेक्षण | डॉ. बजरंग बहादुर सिंह |
| ब. थारु जनजाति का सांस्कृतिक सर्वेक्षण | कु. आरती यादव |
| (ख) संस्थान द्वारा मानव विज्ञान, सामाजिक विज्ञान संस्थान झुसी के सहयोग से शोध परियोजनाएं प्रकाशित की गयी हैं। | |
| अ. 'थारुओं की बदलती जिन्दगी' | संपादक : बद्री तिवारी |
| ब. 'प्रयाग : अतीत, वर्तमान एवं भविष्य' | संपादक : डॉ. योगेन्द्र प्रताप सिंह |
| स. 'संगम की रेती पर चालीस दिन' | लेखक : धनंजय चोपड़ा |
| द. 'भारत की आदिम जनजातियाँ' | लेखक : आर. डी. सोनकर, वरिष्ठ आई. ए. एस. अधिकारी |

3. लोक-रंग शिल्प मेले का आयोजन :

भारत के उत्कृष्ट हस्तशिल्प को प्रदर्शित करने एवं बिक्री के उद्देश्य से संस्थान द्वारा वर्ष फरवरी-मार्च, 2004 एक शिल्प-मेले का आयोजन किया गया जिसमें वस्त्र मंत्रालय, भारत सरकार के सहयोग से लगभग 200 शिल्पकारों को आमंत्रित किया गया। इस शिल्प मेले में

उ०प्र० के साथ ही साथ देश के लोक कलाकारों को भी आमंत्रित किया गया। दोपहर में गायन, वादन और नृत्य में बच्चों की प्रतियोगितायें भी कराई गयीं जिसमें लगभग 1000 बच्चों ने उत्साहपूर्वक भागीदारी की। प्रतिदिन 100 से अधिक विदेशी भारत और प्रदेश के हस्तशिल्प को देखने और खरीदने भी पधारे जो इस मेले की एक बहुत बड़ी उपलब्धि है। इस मेले में एक करोड़ से अधिक के हस्तशिल्प की बिक्री हुई।

4. लोकधारा का आयोजन :

संस्थान का एक महत्वपूर्ण उद्देश्य उ०प्र० की लोक संस्कृतियों को बच्चों के द्वारा प्रदर्शन है। प्रदेश में राई-सैरा, धोबिया, पाई-डण्डा, घरकुला, लठमार होली, फूलों की होली आदि ऐसे उत्कृष्ट लोक-नृत्य हैं, जो राष्ट्रीय स्तर पर अपनी पहचान बना सकते हैं। परन्तु प्रदेश में ही उन्हें बहुत अच्छा स्थान प्राप्त नहीं हो पा रहा है। इसके लिए यह आवश्यक है कि नई पीढ़ी को प्रशिक्षित किया जाए जिससे अपनी लोक संस्कृति के प्रति बच्चों में एक जिज्ञासा जागृत होगी और वे इसे सम्मान की दृष्टि से भी देखेंगे। संस्थान द्वारा यह अभिनव प्रयोग लोकधारा के रूप में

अत्यन्त सराहा गया जिसे भविष्य में भी आगे बनाये रखने की योजना है।

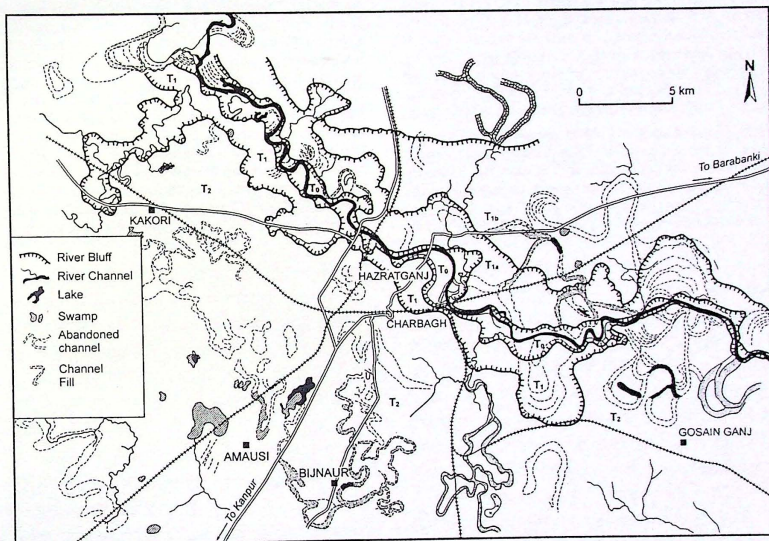
5. सम्भावनायें :

संस्थान अपने सीमित संसाधनों में अपने उद्देश्य की पूर्ति में सतत रूप से कार्यरत है परन्तु अभी इसके विकास की असीम सम्भावनायें हैं। मिर्जापुर, सोनभद्र और बहराइच आदि जिलों की जनजातीय संस्कृति और उनकी पुरासम्पदा को कलात्मक रूप से प्रादेशिक, राष्ट्रीय एवं अन्तर्राष्ट्रीय स्तर पर प्रेषित करने से नये आयाम विकसित हो सकेंगे। प्रदेश की लोक संस्कृतियों में अवधी एवं भोजपुरी राष्ट्रीय स्तर पर ही नहीं अपितु अन्तर्राष्ट्रीय स्तर पर भी सर्वस्वीकृत हैं। कई देशों में अधिसंख्यक लोग भोजपुरी और अवधी मूल के हैं और राष्ट्राध्यक्षों के पदों पर भी आसीन हो चुके हैं। सांस्कृतिक आदान-प्रदान योजना के अन्तर्गत प्रवासी देशों तक प्रदेश की लोक संस्कृति को और उसकी लोकधारा को विकसित करने से न केवल सांस्कृतिक आदान प्रदान होगा अपितु दूर देश में बैठे हुए भोजपुरी/अवधी समाज के लोगों को अपने पूर्वजों से जुड़ाव भी महसूस होगा जो अन्तर्राष्ट्रीय स्तर पर 'बसुधैवकुटुम्बकम्' की भावना को पुष्ट करेगा।

Geomorphology of Lucknow Area

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GEOMORPHOLOGICAL MAP OF LUCKNOW AREA

(Compiled from various sources, based on SOI sheets and satellite imageries)

Lucknow is located in the Central Alluvial Plain of the Ganga Plain, in the region of Ghaghara-Ganga interfluvium. The Lucknow township is situated on the banks and adjacent areas of the Gomati River. The Gomati River rises in the Terai parts of the Pilibhit district, flowing essentially in the SE direction to meet the Ganga River in Ghazipur district. It is an alluvial plain river, which is fed by groundwater and sheet runoff. In the Lucknow area, the Gomati River exhibits meandering characteristics which are highly distorted indicating neotectonic activity in this region. This area exhibits three different geomorphic surfaces

with their characteristic features, namely, the Upland Terrace Surface (T₂) or Upland Interfluvium, River Valley Terrace Surface (T₁), and Active Flood Plain Surface (T₃). The upland interfluvium surface is also described as Older Alluvium or Bangar. It makes the high surface showing a variety of alluvial features, namely blurr ridges, abandoned channels, lakes, ponds and patches of alkaline soils. This surface exhibits kilometre-scale undulations making high grounds and low grounds. It resulted in regions (basins) of centripetal drainages of several km² areas. Within each of such basins a number of large and small ponds and lakes are present. Usually,

there is no outflow from such basins. The ponds and lakes are usually associated with raised natural levees and alluvial ridges which are often ancient sites of human settlements. These water bodies were formed in early to middle Holocene and provide good record of palaeoclimate and palaeovegetation. Deposits of T_2 -Surface are seen in cliff sections, exposed along the river channels showing many calcrete (kankar) horizons. T_1 -Surface is located within the Gomati River Valley, above the level of annual floods of the river. It may be demarcated into two sublevels, i.e. T_{1a} and T_{1b} . T_0 -Surface makes the river channel and its active flood plain. The T_1 -Surface is 5-10m above the T_0 -Surface, and T_2 -Surface is about 15-20m above the T_1 -Surface.

The old Lucknow city is located on the southern side of the Gomati River (Cis-Gomati area), which exhibits mostly higher surface. The planners of old city of Lucknow made the maximum utilization of the landscape in the town development. The main residential areas are located on Upland Terrace Surface

(T_2) free from annual river floods. The upper part of T_1 -Surface was developed into parks and gardens with few monuments on raised grounds. The natural drainages were developed, trained and deepened for disposal of effluents as well as excess rainwater. The Bara Imambara is a fine example of using T_2 and T_1 -surfaces to create split levels. The T_2 -Surface extends in Chowk, Aminabad, Charbagh and Cantonment areas with a general altitude of about 124m above msl. Husainabad, Kaiserbagh and Hazratganj are located on degraded T_2 and T_1 -surfaces. Many new settlements in Lucknow, namely Niralanagar, Mahanagar, parts of Gomati Nagar (Trans-Gomati area) are located on the T_1 -Surface. During planning of these new residential areas, no consideration was given to geomorphic features and water outlets. Often natural drainages have been blocked and depressed areas with small ponds were converted to residential complexes without giving consideration to the water movement during monsoon rains. This results in water logging of several residential colonies during heavy rains.

लखनऊ क्षेत्र की भूसंरचना

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लखनऊ, गंगा मैदान के केन्द्रीय जलोढ़ मैदान में घाघरा-गंगा दोआब के मध्य स्थित है। लखनऊ शहर गोमती नदी के किनारे स्थित है। गोमती नदी, तराई क्षेत्र में पीलीभीत जिले से निकलती है तथा दक्षिण-पूर्व दिशा में बहते हुए, सैदपुर (गाजीपुर) के पास गंगा नदी में मिल जाती है। गोमती नदी, भौम जल से पूरित एक मैदानी नदी है जिसमें लखनऊ के पास काफी विकृत विसर्प हैं जो कि नव निर्वतनिकी को प्रदर्शित करते हैं।

लखनऊ क्षेत्र में 3 विभिन्न भूआकृति-सतहें पायी आती हैं। ऊपरी वेदिका सतह T_2 (ऊपरी दोआब), नदी घाटी वेदिका सतह T_1 , सक्रिय बाढ़ के मैदान की सतह T_0 । ऊपरी वेदिका सतह को पुराना जलोढ़ या बांगर भी कहते हैं। इस सतह में मुख्य रूप से - भूर के उभार, झील, तालाब, कटे हुए जल मार्ग एवं ऊसर मृदा के पैयेज पाये जाते हैं।

सतहों में ऊंचाई के अन्तर के कारण केन्द्रीय प्रवाह प्रणाली विकसित हो जाती है। ऐसे प्रत्येक द्रोणी में छोटे एवं बड़े तालाब पाये जाते हैं। ऐसे तालाब एवं झीलों के किनारे प्राकृतिक तटबन्ध पाये जाते हैं जहाँ आदिवासी मानव के प्राचीन अवशेष पाये जाते हैं। तालाब एवं झील मुख्य रूप से मध्य होलोसीन समय में निर्मित हुए जो कि वर्तमान समय में पुरावनस्पति एवं प्राचीन जलवायु की जानकारी प्राप्त करने के आंकड़े प्रदान करते हैं।

T_2 सतह के निक्षेप नदियों के किनारे के कगारों में दिखायी देते हैं जिसमें कंकड़ पाये जाते हैं तथा T_1 से 15-20 मी. ऊंचे हैं। T_1 सतह नदी घाटी में स्थित हैं तथा बाढ़ के मैदान की सतह से 5-10 मी. ऊंची है। T_0 सतह नदी की सतह तथा सक्रिय बाढ़ का मैदान है।

पुराना लखनऊ शहर गोमती नदी के दक्षिणी तरफ ऊपरी सतह पर स्थित है। पुराने शहर के बसाने के समय विकास की क्रियाओं में भू आकृतियों का पूरा ध्यान रखा गया है। मुख्य आवासीय क्षेत्र T_2 सतह पर रखे गये हैं जो बाढ़ क्षेत्र के बाहर स्थित है। T_1 सतह पर पार्को तथा बगीचों का विकास कर इसके ऊपरी भागों में कुछ ऐतिहासिक इमारतें बनायी गयी हैं। प्राकृतिक प्रवाह प्रणाली का प्रयोग जल निकासी के लिए किया गया है। बड़ा इमामबाड़ा में T_2 - T_1 सतहों का प्रयोग बख्शी दिखायी देता है। T_2 सतह चौक, अभीनाबाद, चारबाग और छावनी क्षेत्र में दिखायी देता है जो समुद्र तल से 12 मी. ऊपर स्थित है। हुसैनाबाद, कैसरबाग और हजरतगंज अपरदित T_2 एवं T_1 सतह पर स्थित है। लखनऊ की नयी बस्तियां निरालानगर, महानगर एवं गोमतीनगर के कुछ हिस्से T_1 सतह पर स्थित हैं। इन बस्तियों के बसाने में भू आकृति विज्ञान एवं जल निकासी की प्राकृतिक प्रभाव-प्रणाली को अनदेखा किया गया है। इसलिए ये नयी बस्तियां बरसात के मौसम में जलभराव की समस्या से ग्रसित हो जाती हैं।

(अंग्रेजी में मूल लेख का हिन्दी रूपान्तर)

Role of Geosciences in Archaeology

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One of the greatest scopes to study geosciences is to improve our understanding of the earth, where we live. It also helps in understanding the operating physical, chemical and biological processes that support human life. The major part of our archaeological, historical and cultural heritage is buried just below the earth's surface within sedimentary sequence or subsoil of Pleistocene-Holocene Age. The concepts, methods and recent advancements of geosciences, therefore, can successfully be applied in the field of archaeology to resolve the problems in the reconstruction of past human history.

One of the basic requirements of geosciences in archaeology is to provide a more correct and efficient data interpretation by application of modern techniques for better time-space relationship between archaeological sites. It can be justified by the consistency of earth's physical and chemical processes, operating from historical time to present. The use of geosciences in archaeology initiated in the first half of the last century and moved ahead together with the development of modern archaeology. One of the earliest evidence of close connection between geology and archaeology was established by geologist Kivk Bryan from his studies of fluted stone tools with the bones of extinct bison from Pleistocene deposits of New Mexico, in late 1920s. At present, modern archaeology includes the application of laboratory techniques and practical methods of geology particularly: earth surface processes, geochemistry, mineralogy, sedimentology, remote sensing, palaeobiology, geophysics, and dating techniques, etc.

Of all the advances of geosciences, the most significant for archaeology has been the development of remote sensing techniques. Use of techniques such as aerial photography, satellite multispectral data, ground penetrating radar (GPR), etc. has been done to locate and identify surface features and their aerial extent, buried features of subsurface such as burial chambers and tunnels, limestone caverns and abandoned historical mines, etc., prior to excavation. The radar mapping done by the Space Shuttle Columbia in the Selima Sheet Sand area in eastern Sahara desert revealed previously unknown buried channels and alluvial valleys of a massive palaeo-drainage system. This discovery also revealed that the palaeo-drainage system was a major

center of episodic human habitation.

Geophysics offers a wide range of non-destructive techniques such as georadar, geoelectric, geomagnetic and thermic infrared measures. High-resolution microgravity technique was successfully used to locate 150-year-old tunnels beneath the Liverpool city. Techniques of environmental geochemistry have been applied to identify the source of tin used to supply for rapid demand in Europe during the Bronze Age. Analytical geochemical techniques also help in identifying trade and source of raw materials – lithics, obsidians, clays, glass making sands etc.

C-14 dating technique is extremely useful to archaeologists and provides a detailed time scale in archaeological stratigraphy. U-Pb dating method has been developed to date geologically young rocks (~250 ka) and has been successfully used to date speleothems having high uranium content. Luminescence dating techniques are useful in sand-silty sediments, particularly those of desert areas.

Reconstruction of past environmental conditions also requires a profound knowledge of earth surface processes and climate change. The impact on earth surface processes caused by neotectonics, volcanism, sea-level variation, climate change, changes in river systems, etc. can be properly evaluated by geological studies. A climate change from favorable to unfavorable conditions leads to development or abandonment of an area of human occupation. A number of proxy records namely grainsize, clay mineralogy, magnetic mineral study, etc. are used to reconstruct the palaeoclimate. Pollen contained sediments or soils buried at archaeological sites are widely used as a source of palaeoecological information as they provide an evidence for vegetation cover and land uses immediately prior to burial. Environmental reconstruction from archaeological evidence by using palynology and archaeobotany as tool, has been the most productive and intensively studied branch. Such kind of recent study had established the presence of extensive grassland in the Ganga Plain, during Late Pleistocene-Holocene.

Middle Pleistocene-Holocene is the most interesting period in geological history for archaeologists. The climate shift from cold to warm began around 15 ka

and led to disappearance of continental ice sheets and contraction of mountain glaciers. The global sea level raised by over 120 m, while the combination of climate and vegetation changes exerted a major influence on earth's physical processes. These changes affected the human behavior marked by the evolution of human society from hunter and food gatherer to sedentary agriculturalist. Landscape, people and climate are three variables that are extremely linked with each other. High-resolution studies of climate and landform changes, therefore, would be helpful in understanding the reasons of changes in the human behavior.

In 1986, the editor of the journal *Geoarchaeology* in its first editorial stated that the interaction between

geosciences and archaeology to expand geological interpretation and understanding, is very valuable. Recently published book on '*Techniques in Archaeological Geology*' by Prof. E. G. Garrison, University of Georgia, provides the practical application of geosciences in the field of modern archaeology. Another book on '*Archaeomineralogy*' by Prof. G. R. Rapp, University of Minnesota, offers an emerging role of geosciences into 21st century. We know that the large part of our archaeological heritage is still buried below earth surface. Geoscientists can look forward for their ever-increasing interaction with archaeologists and to impart in an expansion of knowledge about human behavior and relationship with the earth's environment in the past.

“भू विज्ञान का पुरातत्त्व विज्ञान में महत्व”

मुनेन्द्र सिंह एवं ध्रुवसेन सिंह

भू विज्ञान विभाग, ल.वि.वि., लखनऊ

पृथ्वी विज्ञान का अध्ययन पृथ्वी ग्रह के बारे में जानकारी उपलब्ध कराता है जहाँ हम निवास करते हैं। विज्ञान की यह शाखा उन भौतिक, रासायनिक और जैविक क्रियाओं को समझने के सूत्र प्रदान करती है जिसके कारण पृथ्वी ग्रह पर मानव जीवन सम्भव है। पुरातत्व, ऐतिहासिक एवं सांस्कृतिक विरासत का ज्यादा हिस्सा, पृथ्वी सतह के नीचे प्लिस्टोसीन-ने-होलोसीन युग की अवसादी शैली में संरक्षित हैं। अतः भू विज्ञान के सिद्धान्त, प्रणालियाँ एवं आधुनिक तकनीकी का प्रयोग पुरातत्व की शोध समस्याओं के समाधान एवं मानव इतिहास को समझने के लिए बड़ा ही उपयोगी है।

भू विज्ञान का मूल प्रयोग पुरातात्विक क्षेत्रों में तथ्यपरक आँकड़ों को एकत्र करना एवं उसकी विवेचना करना है। भू विज्ञान का पुरातात्विक क्षेत्रों में प्रयोग पिछली सदी के मध्य में प्रारम्भ हुआ था। भू विज्ञान एवं पुरातत्व विज्ञान का प्रारम्भिक प्रयोग 1920 में भूवैज्ञानिक किक्क ब्रायन द्वारा न्यू

मेक्सिको में प्लिस्टोसीन के अवसाद में निक्षेपित, पत्थरों के औजारों और जंगली भैंसे की अस्थियों के अध्ययन में किया गया। वर्तमान समय में पुरातत्व विज्ञान में, भू विज्ञान की नई विधाओं यथा-पृथ्वी सतह की प्रक्रियाएँ, भू रसायन, खनिज विज्ञान, अवसाद विज्ञान, सुदूर संवेदन, पुराजैविक विज्ञान, भूभौतिकी उग्र ज्ञात करने की तकनीक का प्रयोग किया जा रहा है।

सुदूर संवेदन का प्रयोग पुरातत्व विज्ञान के विकास में बड़ा सहायक सिद्ध हुआ है। उपग्रह से प्राप्त चित्रों एवं जमीन भेदी रडार के प्रयोग से पृथ्वी की सतह के अन्दर के पुरातात्विक क्षेत्रों का अनुमान लगाना सम्भव हुआ है। प्राचीन प्रवाह प्रणाली का अनुमान सुदूर संवेदन तकनीक से उस क्षेत्र में जाना जा सकता है जहाँ पर प्राचीन मानव बस्तियों के पाये जाने का संभावना ज्यादा है।

भूभौतिकी के प्रयोग से लिवरपुल शहर के नीचे 150 वर्ष पुराने सुरंग का पता चला है। कांस्य युग में पर्यावरणीय

भू रसायन का प्रयोग यूरोप में टिन के स्रोत का पता लगाने के लिए किया गया है।

भू रसायन का प्रयोग कच्चे माल के स्रोत (मृदा, पत्थर, ग्लास) जानने में सहायक सिद्ध हुआ है।

कार्बन ¹⁴ की तकनीक से पुरातत्व विज्ञान में विभिन्न परतों एवं स्तरों के उम्र का पता लगाया जा सकता है। युरेनियम-लैंड के द्वारा 250 हजार साल पुराने चट्टानों की उम्र का भी पता लगाया जा सकता है।

पूरा पर्यावरणीय ज्ञान भी भू वैज्ञानिक प्रक्रियाओं एवं जलवायु परिवर्तन पर आधारित है। नव विर्वतनिकी, ज्वालामुखी, समुद्र तल में परिवर्तन, जलवायु परिवर्तन एवं नदियों में होने वाले परिवर्तन भूवैज्ञानिक अध्ययन के द्वारा पता लगाये जा सकते हैं। अनुकूल से प्रतिकूल जलवायु परिवर्तन किसी स्थान से मानव के विस्थापन का कारण बनते हैं। किसी स्थान की जलवायु का निर्धारण—कणों के आकार, मृदा की खनिज विचित्रण, चुम्बकीय खनिजों का विश्लेषण एवं पराग कणों के द्वारा किया जाता है। परागकणों से किसी भी स्थान के वनस्पतियों के बारे में जानकारी प्राप्त होती है। इस तकनीक से गंगा के मैदान में प्लीस्टोसीन—होलोसीन युग में वृहद् घास के मैदान पाये जाने के प्रमाण प्राप्त हुए हैं।

प्लीस्टोसीन—होलोसीन युग पुरातत्व वैज्ञानिकों के लिए बड़े ही महत्वपूर्ण हैं क्योंकि उसी समय जलवायु ठंडी से गरम होनी शुरू हुयी थी जो कि आज से करीब 15 हजार वर्ष पूर्व प्रारम्भ हुआ था। समुद्र का जलस्तर 120 मी. ऊंचा उठा था तथा जलवायु एवं वनस्पतियों के परिवर्तन ने पृथ्वी की सतह की प्रक्रियाओं की प्रभावित किया। इन भू वैज्ञानिक प्रक्रियाओं के परिवर्तन के मानव व्यवहार एवं मानव समाज को आखेटक एवं अन्न संग्रहकर्ता से प्राथमिक कृषि करने को प्रेरित किया।

भू आकृति, मानव एवं जलवायु तीन सूचक हैं जो एक दूसरे पर आश्रित हैं तथा मानव व्यवहार एवं मानव समाज में हो रहे परिवर्तन की जानकारी प्राप्त करने में सहायक होते हैं।

1986 में जियोआर्कियोलॉजी ने सम्पादक के कहा था कि पुरातात्विक ज्ञान के लिए भूवैज्ञानिक विवेचन अनिवार्य है। प्रो. ई.जी. गैरिसन की पुस्तक "टेकनिक इन आर्कियोलॉजिकल जियोलॉजी", पुरातत्व विज्ञान में भू विज्ञान के प्रयोग से सम्बन्धित है। प्रो. जी. आर. रैप्प की पुस्तक आर्कियो मिनरॉलॉजी 21वीं सदी में भू वैज्ञानिक के योगदान से सम्बन्धित है। पुरातात्विक साक्ष्यों के जमीन के अन्दर दबे होने के कारण, भू विज्ञान की मदद से अवसादों की विवेचना कर मानव व्यवहार एवं पूर्व पर्यावरणीय जानकारी प्राप्त की जा सकती है।

(अंग्रेजी में मूल लेख का हिन्दी रूपान्तर)

Built Heritage of Lucknow

R. S. Fonia

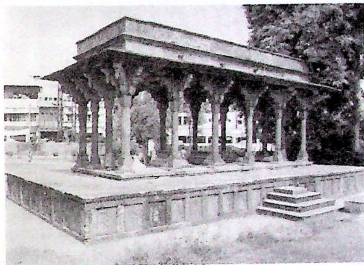
Superintending Archaeologist, Archaeological Survey of India, Lucknow
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Lucknow, the capital of Uttar Pradesh, is not just any other city. It has a soul, a spirit and a character, a period feel and an age-old bond with history. The monuments, inextricably intertwined to the history of 400 years of pristine glory. No other place has been able to blend its past with the present with such consummate ease as has Lucknow. The built heritage of Lucknow is best reflected through its magnificent buildings/structures assignable to the Mughal, Nawabi and the British rulers. The architecture of Lucknow shows that the city experienced an interesting architectural innovations in the form of variety of buildings such as *Forts, Musjids, Tombs, Imambaras, Karbalas, Kazmains, Kothis*, gates and public buildings raised during the successive periods and stages. The individual description of the selected monuments of each period are described below as a convenient reference for the visitors:

A. The Mughal Period

The portion of the old city that lies south of river Gomti was a flourishing medieval town with several Mughal structures along the rivers. It was during the reign of Emperor Akbar Lucknow became the important seat of *Subedar* of Subah Oudh in 1590. Shaikh Abdur Rahim, a noble man of Bijnaur, was entrusted with the *janir* of Oudh Subah. He built his residence known as Panj Mahal and Shaikhah Gate on Lakshman Tila. His tomb is known as Nadan Mahal purely built in Indo-Islamic scheme. After his death, Lucknow became the centre of paramount power under the *Shaihzadas*. They hold important position in the Mughal Court too. The most important building belonging to them was Machhi Bhawan fort complex. It was so strong, it was said "He, who holds Machhi Bhawan holds Lucknow". The other structures built during Mughal period are Tile ki Masjid, Akbari Gate, Gol Darwaza and Firangi Mahal etc. The important buildings of this period are described below:

Nadan Mahal Mausoleum Complex : Situated in Yahyahganj locality of Lucknow between Raqabganj and Nakkhas on the Nadan Mahal Road. The entire monumental complex consists of three structures named as Nadan Mahal, the tomb of Ibrahim Chisti and Solah



Khamba. This complex is the pride of place, being the earliest survived monument of Lucknow which was constructed during the Mughal period. The domed chamber of Nadan Mahal on the tombs of Sheikh Ibrahim Chisti and his wife, surrounded from all sides by a verandah. The verandah possesses four columns in the Mughal style on each side, in addition to those at the four corner of the tomb. The brackets supporting the projecting *chhajjas* are decorated with animal figures and mouldings. The dome crowned by columns leaf finial base rises from a low octagonal drum on a square pedestal and ornamented pilaster. The roof is approached through a narrow stair case on the right side of the entrance. The floor of the mausoleum is adorned with marble inlay work with floral and geometrical patterns.

The tomb of Sheikh Ibrahim Chisti constructed with *kankar* blocks, is raised on a low plinth. The outer walls were originally decorated with lime plaster. Over the southern entrance is a Persian epigraph in *Nastaliq* script. The arched entrance is built with brick and lime plaster.

The third component of Nadan Mahal Complex named as Solah Khamba is an open plat-formed pavilion built close to the tomb of Ibrahim Chisti and contains graves of the five descendants of Sheikh Abdur Rahim, built in the stone and marble. The open pavilion on a rectangular platform built of bricks and red stone blocks. The graves are built on the raised platform. It is named Solah Khamba as it is erected on sixteen fluted pillars

with ornamental bases and brackets. The platform is built of rubble and brick and has a red sand stone floor. The columns and the brackets are similar in design to those of Nadan Mahal tomb, but the corner brackets are carved to resemble the elephant head (gaj-mukha). The moulding above the *chhajja* is also elaborated and decorated with two ornamental bands; the lower one being depicted by a series of interlocked floral bands. The parapet is made of red sandstone devoid of tile work and carved with a elephant merlon design. The floor is made of red stone, bordered by a frieze of symmetrically arranged elongated stars.

Akbari Darwaza : It is situated in the dense locality of the Chowk. With the accession of Mughal Emperor Akbar (1556-1605) to the throne of Delhi, the commercial importance of Lucknow started rising. The Emperor, it seems, had a great liking for the place as he added several mohallas to the south of Chowk locality of old Lucknow, towards the close of his reign, Jawahar Khan was the Subedar of Avadh. Qasim Mohammad, his naib, made Akbari Darwaza at the southern end of the Chowk and the localities of Shahganj and Mahmud Nagar to the left and right of it. It was built in *lakhauri* bricks having a lofty arched portal. This magnificent monument in its general architectural plan and height somewhat resembles with the gateways of Fatehpur Sikri. It was originally decorated with lime plaster but there is nothing left to authenticate this.

Tile Ki Masjid : Situated on the historical mound in front of Bara Imambara, near the Machhi Bhawan, stands a grand mosque at an angle with the remainder of the scheme, in order to conform with the obligatory orientation of such a place of worship. The wide frontage and the stepped platform of this religious shrine reflects a sense of spaciousness, enhanced by the symmetry of its proportions.

Constructed during the reign of Mughal Emperor Aurangzeb (1658-1707) this mosque in all grandeur, caters the need of congregational prayer (namaz). Erected on an elevated platform made up of brick and stone, the imposing mosque has a courtyard with a spacious prayer hall severed into three compartments. Triple domed shrine of Mughal times with tall, slender and octagonal minarets projects above the skyline of the old city.

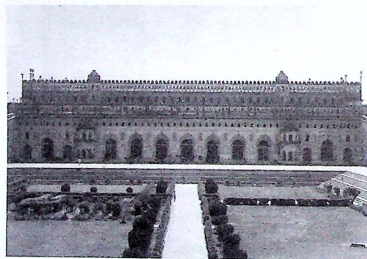
B. The Nawabi Period

The development of modern city of Lucknow dates at least from 1775, when it became the capital of Oudh. The city attracted the best of talents who received royal patronage under Nawab Asaf-ud-daula, as he launched schemes for transforming the small town into a highly

developed one. It was during the Nawabi period that architecture and culture synthesised to give Lucknow as a character of its own. Some of the important buildings of this period are described below:

Asafi Imambara (Bada Imambara): Known as Asafi Imambara, it takes its name from compassionate Nawab Asaf-ud-daula who commissioned his famous architect Kifayat-ullah to construct this Imambara and Rumi Darwaza to help his people tide over the worst famine in his reign, during 1784-1791, providing a means of livelihood for his subject too proud to beg. It also served as a burial place for the Nawab and his wife Shamsunnisa Begum, but unlike the Mughal tombs, the Imambara has a noticeable social purpose by providing a resting place for the Taziya (paper shrines symbolizing the graves of Hazarat Imam Hussain and the martyrs of Karbala carried out each year during the sombre occasion of Muharram).

Located in old Hussainabad, south of Laxman Tila and west of Machhi Bhawan, it is an excellent monument of the combined architecture of Mughal, Rajput and Gothic styles, which forms graphic identity of the Nawabi Awadh. Entire structure is made with smaller and thin



(*lakhauri*) bricks and white stucco powder to imitate stone. Bricks are arranged in different ways to enlivening designing the circular shapes, foliation of arches, and are decorated with the elements of calligraphy and geometry. The complex is approached by three interlocked forecourts each with two lofty gateways. A main court comprises Asafi Masjid and a Shahi Baoli. The entrance gateway is famous for its rectangular plan. Its tri-arched façade is similar to the tripolia of Mughal gateways, in which bold cusped arches and double sets of fish in lime plaster facing each other provide outer decoration. The raised parapets are composed of miniature-domed arches, with square turrets at the corner. These turrets are crowned by chattries or cupolas. In

between are miniature turrets crowned by *guldastas*. The sidewalls have arched galleries on both sides with a series of fluted domes, flanked by octagonal bastions at the corners. Three bastions are crowned by domed *chhatris*.

Main building on a raised platform giving the suspicion of single storey from outside, is indeed three storeyed. Its façade is divided into three parts; the central bay punctuated by semicircular projection and the two sides a little recessed from the centre. There are seven arched openings in the central bay and are in each of the side bays. The walls are 3.66 metre thick and there are 9.14 metre wide roads. These are well ventilated so that these are warm in winter and cool in summer. There is good provision for light also through roshandans. This is an immense and imposing conception, notable for its harmonious proportions. The upper portions of the façade is further articulated by a series of arched openings and the Kiosk (*Chhatri*) like *parapet*. There are three halls. The main central hall of the *imambara* is said to be largest vaulted chamber in the world, measuring 49.7m x 16.16m x 14.9m (length x breadth x height). The enormous roof unsupported by pillars or beams, has 16 feet thick hollow walls that serve to lighten the weight of structure and cool the interiors. Whispering gallery and the labyrinthine 'bhul-bhulaiyya' are the other attractions. A staircase from outside leads to a series of labyrinths with small rooms and long, narrow passages. It is a tricky structure with unique audio effects, advised to be seen with authorized guides.

The second floor has a large terrace on its northern and southern sides. Its raised central part is also formed by long, narrow and low ceiling passageways. These passageway follows the course of those on the floor below and like them, are in several interconnected levels, as per the contours of the *Imambara* structures. The third floor rises above the raised central part of the second floor. The top floor is a open terrace with rows of *chhatris* and finials on all sides.

Incorporated within the scheme of the *Imambara* Complex, the Asafi Mosque is also built. Its perforated arcade above the parapet is very spacious displaying architectural exuberance. It consists of a series of ten chambers arranged in two parallel rows interconnected with arches with vaulted roofs. It has a grand elevation dominated by a large foliated arch flanked by a row of five arches on each side having domes with foliated flutings that accentuate the florid nature of ornamentation. The mosque is flanked by a minaret on each side surmounted by arched canopies with

finials.

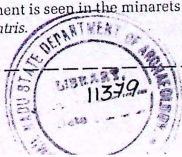
Musafir-Khana (resting place for passengers) and Machhi Bhawan were also two other monuments in *Imambara* complex. These were blown up by British forces during the first war of Independence in 1857.

Nakkar Khana or Naubat Khana : is built opposite to the entrance gateway of the *Bara Imambar* for announcing the departure or arrival of the Nawab and the important members of his family and the court by playing drums and musical instruments is distinct by virtue of its architectural merit and grandeur. Originally, it is three storeyed building having a series of cells inside, made of lakhauri bricks, plastered with lime and decorated with moulded plaster.

The Rumi Darwaza (Roman Doorway) : Which gives admission to outer ward of the entire complex is a large magnificent and unparalleled construction by Kifayat-ullah, during the reign of Nawab Asaf-ud-daula. Supposed to be a facsimile of some gate in Constantinople (Istanbul), this massive 60-feet tall gateway is one of the most expressive example of the spirit of Avadh architecture. All along the cursive engravings lotus petals and other intricate patterns with a series of *guldastas*, were provided to adorn the lofty gateway. The gateway has three medium sized arched openings, the inner archway appears in a semi-circular fashion. From the eastern side, it appears like a half crescent shaped building, influenced by the Rajput style, having three medium sized gateways adorned with multifoiled arches



and floral design, flanked by two minarets on both the sides. On the roof of the gateway, there is another pentagonal structure with five doorways on each wall. The roof of this geometric structure culminates in a small platform, resembling the top of Mexican hat. The Mughal element is seen in the minarets crowned by octagonal *chhatris*.



Hussainabad Imambara (Chhota Imambara):

About two furlongs to the west of Rumi Darwaza, this Imambara was built and endowed by Mohammad Ali Shah as a mausoleum for himself. The Imambara proper stands on a platform approached by two flights of steps and consists of a central hall and seven other chambers. The façade is ornamented with its projecting portico, having five arched openings. The central hall has the tombs of the builder and his mother Malika-i-Aliya. A small mosque is also situated in the north-west. Lightning conductor is beautifully provided at both the sides of the main entrance, held by bronze sculpture of two ladies.

Central hall is a large vaulted chamber. Its arched exterior is adorned with Quranic quotations and other geometric arabesque designs. The façade of the building with its projecting portico, with fine arched openings. Central arch has a marble slab on which the date 1857 is inscribed. The roofline is provided by a perforated arcade, behind which is raised a glistening copper dome. The monument displays a remarkable calligraphic ornamentation on a black surface.

Imambara of Sibtainabad (Mausoleum of Amjad Ali Shah) : It is situated in the heart of Hazratganj and was built by Nawab Wajid Ali Shah. The *Imambara* is approached through two courts, a small forecourt and a main court through two lofty arched gate houses. The main court gateways have rooms built on its both upper floors and on its bank. The main court is a quadrangle with a high enclosing wall.

The *Imambara* lies to the west of the court on a platform raised above the garden. Its plan is modelled on the standard formula with large columned halls at the centre and smaller chambers on flanks, approachable through arched entrances on the northern façade of the buildings. The extreme south are chambers with *shahneshin*. The inner walls have deep arches with floral ornamentation and motifs which are incised and carved in relief. The vaulted ceilings and cornices are embellished with floral motifs in green, gold and grey. The grave of Amjad Ali Shah lies in the main hall, in an underground chamber. On the eastern side of the central hall is a spacious room, for keeping sacred ritual objects. There are five arched openings with the northern façade and the central one faces a rectangular tank. The façade is defined by five large round headed arches superimposed by foliated ones.

Shahnajaf Imambara : Deriving its name from the town of Najaf, near Baghdad, where saint Hazrat Ali is buried a rectangular building of Shahnajaf Imambara built in 1816, is located on the right bank of Gomti.

Ghazi-ud-din Haider and his wives, including Mubarak Mahal, lie buried in this mausoleum. The general layout consists of outer gateways with a forecourt, and a main enclosure with gateway leading to the Imambara. The outer court gateway is small but having ornate work, consisting of arch bearing inscriptions and supporting a pair of rampart lions, symbolising the Hazrat Ali, the Lion God. The arch is flanked by two features, a small hexagonal kiosk with a conical spire, and a small octagonal pavilion with a fluted cupola. This leads through a pathway through the entrance gateway to the main court.

The main court is larger and consists of a double foliated arched opening. There are gateways towards the east and west sides of enclosure wall, a mosque to the west and a low storied structure to its east.

The shrine consists of a large room closed from three sides except north one which is the only entrance. A flight of steps leads to the three arched wooden entrance doorways of the inner sanctums or a door chambers. Chandeliers and candle globes are displayed in the chamber. In the centre of the chamber lies the tomb of the builder Ghazi-ud-din Haider and his wives. The most holy object is a square silver replica of the tomb of Hazrat Ali. An oil painting of the crown of Ghaziuddin Haider, is an important work of art displayed here. The epitaph of the late queen is inscribed on the wall. This has a raised podium at its west with vaulted ceiling decorated with green floral swags and festones. The wall faces of the inner sanctum are punctuated with pilaster the roof line has a perforated arcade. The façade of the gallery passage are lined with simple pointed arches and the roofline is decorated with petals. The outer wall is whitewashed. The vault of inner wall is decorated with green and blue *stucco* motifs against a white background. Within the enclosure on the western side of the *Imambara* is a small mosque with flat roof, flanked by two solid octagonal minarets.

Karbala Nasir-Ud-Din Haider : Situated in Iradganj just behind Shia Degree College, this rectangular Karbala built by Nasir-un-din Haider (1827-37). It is raised within an enclosure wall. It appears that it was left unfinished, as its minarets are incomplete and brickwork was not faced with *stucco*. It contains a pair of shrine chambers; the western chamber is octagonal in profile, having pointed arches on all sides and the eastern chamber with domical vault. The structure has two domes with large drums. Western dome has a flattish outline and the eastern one having spherical profile. The projecting entrance arch is flanked by two

circular towers without cupolas. The large central hall has a dome with opening for ventilation. Two masonry graves, on of Nasiruddin Haider and another of his begum Kudasia Mahal, lie in this mausoleum.

Karbala Dayanat-ud-daulah: This most impressive *Karbala* located in the Saaddat Ganj locality of old Lucknow, was constructed in 1847 by Dayanat-ud-daulah, a courtier of Wajid Ali Shah. The real name of Dayanat-ud-daula was Mohammed Husain Ali Khan. He was given the title on the occasion of the coronation of the Nawab.

The *Karbala* has a large enclosure with a high wall, with a number of arcaded chambers on both sides of the wall. The enclosure has rectangular gateways at cardinal points. The main entrance in the east through a pointed archway, is ornamented by Arabic inscriptions.

The *Karbala* in the center of enclosure has two shrine chambers surrounded by galleries. The western chamber is octagonal and the eastern one with a grave is square, with walls punctuated by pointed arches. The galleries are narrow with pointed arches. The interior is decorated with calligraphic, floral and geometric motifs. The outstanding feature of the structure is the arrangement of two domes, one low and other raised in Mughal style. The main dome is crowned by a lotus bud finial and is flanked by two beautiful minarets of Iranian design with arcaded projecting balconies.

The western entrance and interior wooden verandah is supported on fluted pillars in Central Asian design, and embellished with pieces of mirrors and mother of pearl. An inscriptional marble slab on the northern entrance is executed in *Nastaliq* Script and records the construction of the burial place of the martyrs, i.e., the *karbala* in A.H 1268 (1851-52).

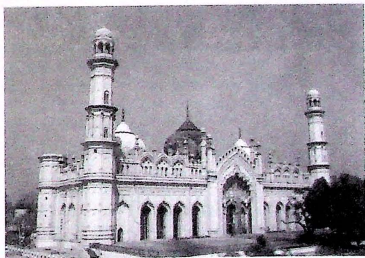
Karbala Kazmain (rauza): The Kazmain Rauza is located about 200 meters from Dayanat-ud-daula. Deriving its name Kazmain from the name of a place in Iraq, Kazmain *Rauza* is believed to be a replica of a sacred mausoleum of the seventh and eighth *Imams* in Khurasan, namely Hazrat Moosa Kazim and Imam Hazrat Ali Raza. The Kazmain complex is composed of several courts, containing a mosque, many gateways and buildings. It has an entrance gateway composed of a main arch surrounded by smaller one.

The shrine of *Rauza* Kazmain lies in the centre, has a large chamber having rectangular doorways with superimposed recessed pointed arches. The chamber is surrounded by arcaded galleries with ceiling of wooden beams. Two domes, are covered with copper sheets painted in gold. Four *Isthami* minarets are at

corners.

Jama Masjid: Built during the reign of Muhammad Ali Shah (1837-42) on an elevated basement, the *Jama Masjid* is the most imposing and grand mosque built in Awadh. It is approached by a flight of steps leading to a wide platform in rectangular plan. The mosque comprises fourteen vaulted chambers divided by arched piers. The interior and wall surfaces are richly decorated with delicate sketched ornamentation admissible under the traditional Islamic Campus showing floral geometrical, textile designs. Some of the finest specimens of Islamic calligraphy are also witnessed here. European architecture is apparent in minarets. The whole façade is exquisitely decorated with fine *stucco* work on three domes. Central dome follows the outline of later Mughal style, and the side domes are in fluted designs with inverted lotus finials.

Tombs of Saadat Ali Khan and Khurshid Zadi or Murshid Zadi: the tombs on the mortal remains of Nawab Saadat Ali Khan, his begum Khurshid Zadi (and the third one said to be of their daughter Murshid Zadi), within the rectangular structure of a mixed or hybrid architectural style in the Qaiserbagh area of Lucknow, are the classic examples of the later Mughal times. The monument was built by Nawab of Awadh Ghaziuddin Haider, the son and successor of Saadat Ali Khan, on the site of some old palace.



It is a three storeyed structure having a large basement floor with chambers and a low verandah with openings. This basement floor is connected with first floor through a staircase which is presently closed. The plan of the first floor, treated here as the ground floor, has a large central octagonal chamber. The floor of this chamber is decorated with black and white marble slabs laid in the pattern of the chess-board. The grave of the Nawab Saadat Ali Khan is erected in the underground vault. The vault also contains grave of his brother. The

corridor in the rear contains the graves of his three Begums and on the eastern side are those of his three daughters. It has a vaulted ceiling supported on a pointed arch. The first floor is remarkable for its rectangular porticos on two sides and its foliated tri-arched opening. The central chamber has four rectangular chambers on its cardinal points with coved ceiling supported on arches and spiral staircase are placed on rectangular bays on all its corners. These staircases lead to the upper floor which consisted of a lone vaulted passageway running all around the central vault and opening on cardinal points into terraces with parapet fringes. The four corners of the first floor are strengthened with square, double storeyed bastions crowned by octagonal *chattaries*. The last floor is also notable for *chattaries* in the later Mughal style. The central dome is remarkable for its height and is adorned by an ornamental inverted lotus petal and finial. The façade of the tomb is decorated with lime plaster and *stucco*. The interior decoration is done with beautiful colours, deep blue and maroon on a white base.

The tomb of Khurshid Zadi or Mushid Zadi is built close, in the east of the tomb of Saadat Ali Khan. This tomb consist of four levels. The first one is the ground level for basement which has a rectangular entrance doorway, leading in a low passage to a room containing the grave of Begum Khurshid Zadi and the another one which is said to be that of her daughter. The double storeyed bastions are raised at corners with attached opening containing stairways, to the second level. Having an octagonal chamber with a cenotaph. The third level is a spacious terrace at the centre of which stand a triforium enclosing the outer surface of the vault of the central chamber and second level and supporting the outer dome. A narrow staircase at each corner leads to the turrets on the third level. It is almost identical to that of the Tomb of Nawab Saadat Ali Khan except that the attached octagonal double storeyed bastions have arched openings and the dome has octagonal *chattaries* at the corners. The main dome is fluted and crowned by an inverted lotus petal finial.

C. British Period

The appointment of the British resident in the court of the Nawab along with other Europeans also had deep impact on the Nawabi architecture and this gave rise to the hybrid style. The main constituent of this style are columns of a Tuscan, Doric, Ionic or composite order, enrichment, mouldings, door with window surrounds, Cornice profiles, pediments with usually segmental or triangular heads, radiating fan-lights

on windows and door openings and a number of other motives drawn from the European architecture. These components were properly combined with varying degree of details derived from Indo-Islamic school such as arabesques, *kanjoos*, foliated arches, *chhajjas*, perforated arcades as parapet fringe, *chattaries*, domes and numerous features and enrichments commonly applicable in the native style. During this period, the mark of the work of the European military engineers work in the army of the East India Company are seen on the important buildings in Lucknow such as Asafi Kothi, Farhad Baksh, La-Martiniere, Bibiapur Kothi, Musa Bagh, Dilkusha and several Nawabi gateways. This hybrid style was introduced in the region some time in 1773-1775 and became popular till the end of Nawabi period. i.e., 1856 Col. Polier, Maj. Gen. Claude Martin, Capt. Marsak, Capt. Ousely, Col. Wilcox, Capt. Truckett and Capt. Fraser were some of the important military engineers who designed the Nawabi buildings in the European manner.

Lucknow became the main center of the first war of independence of 1857-58. After 1857, British rulers reorganized the city to serve either their own religious and cultural needs as also to improve the living standards and services in the city. As a result, churches, memorial towers, military cantonment, municipal buildings, educational institutions, gates, towers, hospitals, railway lines were constructed during the Victorian and Edwardian eras. i.e., from 1857 to 1947. After 1857, British administrators constructed initially cemeteries and memorial towers in the honour of their officers who died during the first war of independence and later erected a number of churches. The finest example of the architectural monument in Lucknow during Victorian era was the clock tower in Hussainabad. Some of the finest British public buildings were constructed during the Edwardian era. Some important buildings of this period are described below:

Chhattar Manzil : It was built by Claude Martin about 1780 as his house on the bank of river Gomti located about half a kilometer from Baily Guard Gate and the Residency and one kilometer away from Machhi Bhawan. It was known as Martinsville during the life time of Claude Martin, but was renamed as Farhat Baksh after its acquisition by the Nawab Saadat Ali Khan.

This building consists of two levels, a ground and upper one. Its design is based on neo-Palladian styles. Its doors and windows are made to face the river Gomti in front of ground floor as its terraced garden touches the edge of river Gomti. Its first level has rows of pilasters and half columns of Tuscan order. The building was designed by Claude Martin in such a manner so as to

put an astronomical observatory for defending it from trouble and also suiting it for the local climatic condition in European style as the underground chambers and front portion was extended upto the river edge. The layout of the palace prepared about 1857 reveals that it consisted of a large number of rectangular courts and gardens in an intersecting pattern about one another along the Gomti in descending order. Its rooms were richly furnished with expensive carpets, silk curtains and a variety of chandelion and mirrors of various sizes and shapes. Later it was incorporated into the Chhattar Manzil complex. This building was purchased by the Nawab Saadat Ali Khan in 1803 from Claude Martin and after extending it, it was known as Farhat Baksh Kothi till the annexation of Awadh in 1856 but after the first war of the independence of 1857 it is known as Chhattar Manjil Kothi complex.

The Chatter Manzil or Farhat Baksh Kothi consisted of the Bari Chhattar Manzil, Chhoti Chhattar Manzil, Kothi Farhat Baksh, Lal Baradari, Gulistan-i-Iran and Darshan Villa. Presently Lal Baradari houses the office of the State Lalit Kala Academy, Chhattar Manjil houses the office of the Central Drug Research Institute, and Gulistan-i-Iran and Darshan Villa had been demolished and reconstructed to house the State Government office of the Director General (Health). The complex also comprises the series of European houses with central garden and structures like *Baradari*, pavilions, cover passages, gateways and walled areas. River Gomti and Khas Bazar respectively formed the northern and southern boundaries of this complex.

Nawab Ghaziuddin Haider completed the Kothi complex which was earlier it was built by the Nawab Saadat Ali Khan in memory of his mother Chhattar Kunwar. The important feature of *chhattaries* gave its name to the two Kothis as Bari Chhattar and Chhoti Chhattar Manzil. It is also believed that it also received its name after Chhattar Kunwar the mother of Saadat Ali Khan. This shaped pinnacle became so popular in Lucknow to form the crown of Awadh architecture that almost all later domed buildings were decorated with an umbrella (*chhattary*).

The Bari Chhattar Manzil under went a number of alterations over the years. It was raised from the edge of the river to a towering height. In plan it has two storey with underground chamber known as *Tehkhana*. The first floor level has railing with oval openings and large octagonal turrets at its corners, the second floor has, a pediment and still larger octagonal turrets with cupolas and the top floor is a central octagonal which supports a gilded tomb with flutings and with a crowing chhattaries.

This palace complex was known as Chhattar Manzil on account of the *chhattaries*.

The Chhoti Chhattar Manzil was demolished in about 1917. On the basis of its plan and photographs available it can be drawn that this complex had a spacious verandah on the south side of its ground floor, supported on seven arches, which lead into a large chamber, small rooms and corner rooms containing spiral stairway to ascend to the upper floor. There is a large terrace in the upper floor with the chamber having a cupola and at the corner of which rises a pair of octagonal turrets with conical heads. It was richly furnished with Iranian carpets, wall paintings, mirrors, portraits and chandeliers but all are now missing. The manzil complex with its garden were enclosed with a compound wall which was destroyed or demolished by General Henry Havelock during the war of 1857. It was occupied by members of the royal family of Awadh including favourite *begums* like Malka Zamam, Kudsuya Mahal and Malka Kishwar, mother of the Nawab Wazid Ali Shah. After 1857 it was converted into the United Service Club with library for senior British officials. It was declared as monument of national importance in the year 1920, but was deprotected in the year 1950 and after that the Central Drug Research Institute has been located in the complex. It is now a state protected monument.

Kaiser Bagh Complex : The Kaiser Bagh complex lying to the south-west of the Farhat Baksh or Chhattar Manjil was built by the Nawab Wajid Ali Shah between 1848-1850. It consisted of three main squares covering a large area, the largest to the east containing the two tombs of Saadat Ali Khan and his wife, the Roshan-ud-daula Kothi in the south-west direction and the Chaulakhi in the south eastern angle. Two gateways led into the central courtyard and there stood number of building including Chandiwal Baradari. Naginawali Baradari now shifted to Banarsi Bagh, two tanks, three small marble pavilions, four wells and some other structures. The famous mermaid gates of Kaiser Bagh complex were built by providing aesthetic composition of four gates which can be seen into the arched gateway. Although these are no more existing, but from the photograph of these gateways, one can understand their architectural details. There is another remain of the outermost gateway to Kaiserbagh namely Chini Bazar Gate or Sher Darwaza, g now known as Neil's Gate.

The center point of the entire complex was the main court, which was rectangular on plan and had a large garden. Buildings were arranged to be north, east and west of the court, but unfortunately these were demolished to accommodate other structures. The



important architectural achievement were Roshan-ud-daula Kothi and Chaulakhi which were acquired by the Nawab and there were incorporated into a larger scheme of interlinked buildings built around the large square. It became the headquarter of the Indian native forces of Awadh and suffered heavy damages during 1857-58. It was further demolished and altered by the British ruler after the annexation of Awadh. The southern portion was demolished and a road was built. The remaining portion were given to the Talukdars who were loyal to the British. The Amiruddaula Public Library and the Bhatkhande Music Academy were built on either side of the *Baradari*.

The Roshan-ud-daula better known as Kaiser Pasand was built by Nawab Raushan-ud-daula, the then Prime minister of the Nawabof Awadh about 150 years ago. The large halls and spacious rooms on both floors were lavishly decorated and the ornamentation was done in *stucco* and painting on plaster. It has a golden *chhattri* and dome and was used as court for long time during the British period and now houses the office of the State Archaeology Department. The Chaulakhi was built in hybrid style both traditional and European style. The Chaulakhi was purchased by the Nawab Wazid Ali Shah from the royal barber Azimulla Khan and was incorporated into the Kaiserbagh Palace complex. Besides these are the eastern and western gateways which still survives.

Number of marble statues, once adorning the gardens and courtyards of the Kaiserbagh complex, either were demolished or some were shifted and placed in the Geological Garden known as Banarsi Bagh which also presently houses State Museum and Zoo. The famous Naginawali *Baradari* was also removed from Kaiserbagh complex and was transplanted in the Geological garden of Banarsi Bagh.

Musa Bagh Complex : The building cum garden known as Musa Bagh is located on the outskirts of the city about Lucknow-Hardoi road about 5 km west of Thakurganj on the right bank of river Gomti. The building of this started during the reign of the Nawab Asaf-ud-daula and completed during the reign of the Nawab Saadat Ali Khan in European style. It is also known as Barown or Bariow after the name of a nearby village. Rosie Llewellyn Zones has described the drawing of this building in her book '*A Fatal Friendship*' which was prepared by Smith in 1814. The three storeyed building was built on the picturesque spot overlooking the river Gomti and enclosed with high compound wall with an impressive entrance on the southern side. A large garden was laid down within the enclosure wall on its west direction. At the corners of the enclosure wall were provided towers and bastions. It was built in two sections, first the building itself facing east and second its west side adjoining the building was another walled enclosure with a sunken floor and having pavilions at corners containing



staircases, connecting it to the ground level of the building. The *baradari* was placed in first floor of the building, now consists of the remains of a wall with arched opening and ventilators over the doorways facing garden on its west. It was made as garden, however it had an open terrace facing towards east, i.e. the river side.

It was raised on a rectangular ground floor plan and was approached by semi circular shaped flight of steps from east through a bow front verandah and consists of a suit of three large chambers. It turns further into a large rectangular chamber at centre flanked on its east and west sides by pair of small chambers having spiral staircase which leads to first floor of the building. The first floor had the same composition of

chamber surrounded by terraces. The columns of composite orders were placed on the podium of the first floor and second level and its west elevation had a large verandah having round headed arches with radiating of antiques and were supported on clusters of columns of composite orders. The balustrade on the upper level had circular opening, the circular turrets on the roofs had small finials. It exhibits a high class of workmanship in delicate *stucco* fringes, witty imitation of rolling *tattis* or blind of *stucco* over each arch.

It was the last *morchha* of freedom fighters of the Awadh under the leadership of Begum Hazrat Mahal. Today it stands in a ruined condition. It suffered heavy damages during the First Battle of Independence of 1857.

Within the garden in front of the pavilion stands the tomb of Captain Tiwale, Commander of 1st Sikh Irregular Cavalry who was killed in action on the 21st March 1857. Today it is known as Gora Baba Ka Mazar.

To understand its plan, design and function an archaeological excavation was conducted here. The excavation revealed its plan, drainage system, sewage line and water management system. Its entrance, the bow-front verandah and flight of steps were exposed. The drain pipes and underground water outlets covered with Chunar stone slabs matching with the floor were also exposed. The outer face of the walls are veneered by Chunar stone slabs. The sewage line has been found built of *lakhauri* bricks which was provided with manholes at regular intervals both circular and rectangular size. It was also connected with river Gomti. There are a number of wells inside the palace as well as outside. The artefacts recovered also provide glimpses of the rich material culture of the Nawabi colonial elites. The objective of providing sunken courtyard was two fold, first it made the surrounding rooms, verandah and walls cool and secondly the front portion of the building made to suit as winter residence. Besides, it was designed in such a manner so that it could be approached through the semi-circular portico on the riverside to the sunken floor courtyard as the courtyard floor was laid on the same level of the ground floor.

Nawab Asaf-ud-daula and his successor Nawab Saadat Ali Khan built number of pleasure resorts or *kothis* on the outskirts of the city near the banks of Gomti river. These were used as festivities and also as hunting lodges. About 5 Km on the same highway Dilkusha and Bibiapur Kothis are located. Perhaps the Musa Bagh was connected with these *kothis* via boating.

Bibiapur Kothi : This building was constructed in European style during the reign of the Nawab Asaf-

ud-daula in the picturesque surrounding of the river bank, south east of the old city which now comes under the Cantonment area.

It is a double storeyed building built of *lakhauri* bricks in lime mortar, coated with lime plaster, and supported by wooden beams and rafters. It comprises two floors with matching sets of chambers proportionately distributed in both the floors. A large arcaded verandah on the ground floor opens into the chambers of equal size in the middle of the floor, flanked to either side by pairs of rooms. On the west lies the long verandah and on the south end is built a staircase connecting ground floor with upper floor. There are two more staircases also ascending to the upper floor.

The west façade has a podium with round headed arched opening, and series of eight bays formed by pairs of column of Ionic order. Its cornice is surrounded by a low balustrade on the roof line. The outer façade is simple but interior is decorated with mouldings, *stucco*, fire places and chimney.

After the death of the Nawab Asaf-ud-daula, a darbar was held here, in which the British Resident Sir John Shore, declared Saadat Ali Khan, the step brother of the deceased, as the proper successor to the throne. It also gives indication that these pleasure buildings built on the outskirts of the city were also used for numerous meetings with the British resident. After annexation of Awadh in 1856, this building was used by the British army. Later it came in the cantonment area with the shifting of cantonment from Madaon to this place.

Dilkusha Kothi : Dilkusha Kothi cum garden was located on the outskirts of the old city which now stands in the cantonment area. It was built in 1800 by Gore Ouseley, a friend of Nawab Saadat Ali Khan. The extension of some construction continued during the reign of Nawab Nasir-ud-din Haider (1827-1837). It was initially used as a hunting lodge and subsequently a summer resort. At present it is a picnic spot.

This magnificent building represents the earliest example of the composite English and Awadh style of Lucknow. It was so beautiful in its design and setting within the garden that it was named as Dil Kusha (pleasing to the heart). It was erected on a raised platform with entrance facing west. The gateways has fallen but the bastions which flanked are still there. These bastions have square rooms with arcuate openings. Two flights of steps on the east and west fronts lead to the ground halls of equal sizes. On the sides of these halls are small rooms having four octagonal

towers at the corners. The first floor has a rectangular wing in equal size to that of ground floor chambers. The small rooms at corners were meant for guards. The fluted pillars which partly survive are classical in design. The building was designed to resemble an English Castle or Seaton Deval, designed by Sir Jaoh Vandrug. The roof was destroyed during the freedom struggle of 1857. Although it is in ruined condition, but on the basis of its drawing and photographs before its destruction, one could assume that the English classical building design was transformed in the construction of this building, under the patronage of the Nawabs of Lucknow.

Another roofless building is situated on its north-east direction. Built on east-west axis it is a classical example of hybrid style of Indo-European architecture. The façade with its main entrance facing south, was built in *lakhauri* bricks coated with fine lime plaster. There are double sets of pillars of, round, fluted and projecting shapes, which are crowned by solid rectangular structures with projecting eaves. The entrance is having double arches, the upper ones being wide and the lower ones pointed in Neo-Gothic style. The façade have large rectangular windows crowned by pediments.

It was used as a pleasure resort and hunting lodges of the Nawabs, as the surrounding area was rich in wild life. Famous French painter Mr. Matz stayed in this building for painting the portrait of the Nawabs during the reign of the Nawab Nasiruddin Haider. Some of his works can be seen in the Picture Art Gallery at Hussainabad. There is evidence of a *baradari* and garden in the cantonment complex of Dilkusha.

It was occupied in 1857 by the British forces under the command of Colin Campbell. Presently it falls within the cantonment area. The well, remains of baradari and graves of unidentified British officers lie within this area.

Farhat Baksh Kothi : It was built in 1781 by Major General Claude Martin as his house in European style, on the bank of river Gomti. It was also known as Martin villa during the life time of Gen. Claude Martin, but renamed as Farhat Baksh after its acquisition by the Nawab Saadat Ali Khan.

This building is constructed on neo-Palladian style. Its doors and windows on the ground floor are made to face the river side. It is said that Maj. General Claude Martin kept astronomical instruments in this house as he was military engineer-cum-surveyor. It was designed by Maj. Gen. Martin, first to fix astronomical observatory for defending it from trouble, or suiting it from extremes of climate of Lucknow. As such its underground

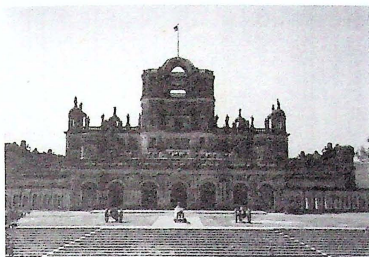
chambers (*tekhkhana*) and its portion built on the edge of the river Gomti. It was richly decorated and furnished with expensive carpets, silk curtains, a variety of chandeliers and mirrors. Later on, it was incorporated in Chhattar Manzil complex.

Hayat Baksh Kothi : Originally built by Nawab Saadat Ali Khan, this building was converted to the official residence of the Governor of United Province of Agra and Awadh. Today it is Raj Bhawan.

This double storeyed building is reported to have been designed by Maj. Gen. Claude Martin. It has also a large hall (*Diwan-e-Aam* or *Diwan-e-khas*) with arched openings. The arches and spandrels were decorated with floral design and the bonds. This building suffered damage during the war of Independence in 1857 and was re-occupied by the British. In 1873 an elegant garden was laid down with water channels and fountains. The original architectural features of this building underwent major additions and alterations for the official residence of the Governor of U.P.

La-Martiniere : A large and pretentious building with extensive grounds, originally known as Constantia, the La Martiniere was built by General Claude Martin and after his death in 1800, it was subsequently completed by Mr. Quierers, executing the three storeys on the original plan desired by the departed General. Fully built structure came to be in vogue by 1814 General Martin was, however, not destined to use this building as his residence. In his will he desired to be buried here. The quadrant wings were added by 1840 under the supervision of Lt. Cunningham and later Lt. Fraser, both the Engineers working for East India Company. Martin wanted the palace complex to serve as an exemplary educational institution. The Constantia on an area of about 35 acres was made a school as per his wishes, and the famous La-Martiniere Boys School holds the unique distinction in the educational institutions in the Lucknow.

Its plan shows a design for producing a broad symmetrical relationship between the radiating wings and the central piers. Accordingly the plan of the central portion of Constantia consists of four massive polygonal piers, enclosing a sixteen sided chamber and three radiating rectangular arms to its north, south and east sides. These piers support the four floors above the ground floor and the radiating arms to the north and south support only one storey. The plan of building also includes a large basement for the summer season. It seems that four circular wells were sunk to the water level and octagonal tower piers containing rooms and a



spiral staircase were raised on these wells to the top level of the structure, for cooling the air by a series of terracotta ducts set into the walls of the wells. The cool air through walls will disperse on being evaporated through eight funnels on the roof which also provide drainage during the rainy season.

There is a chapel and library in the ground floor. The walls are decorated with *stucco*, motifs, Wedgewood medallions and endless pattern of scrolls and floral arquesquels. The sixteen sided room, having a domed ceiling is repeated up to top floor between the four piers which support the four floors above the ground floor, culminating in a block composed of four linked but autonomous towers.

The first floor is ascended through circular staircases. Twelve lions are fixed on the circular bastions at each corner of this terrace. The façade of this floor is articulated by pairs of composite pilasters and half-columns, framing a series of Venetian windows with radiating semi-circular fan lights. The façade of the first floor is defined by fluted and plain pilasters and half-columns of a composite order. Its roofline is adorned with statues of figures and with open pavilions supported on half columns. The upper two storeys are confined to four octagonal towers. At the top level, two arches from the octagonal towers bisect each other. Constantia is an excellent example of mixed architectural styles, similar to other buildings of later Nawabi period.

The school has a place in history-it is the only school (certainly in India) to have won battle honours (for the role played by its boys in the 1857 uprising in India).

Lakhi Darwaza (Kaiserbagh Gateway) : Lakhi Darwaza or Kaiserbagh gate is the best example of Indo-European mixed architectural style in the late Nawabi time, in which triangular pediments, Corinthian capitals and Roman round arches were combined with fluted

domes, arcades, and arabesque foliage. Since in the construction one lakh rupees were spent, it is named as Lakhi Darwaza. There are two gateways one at the eastern and the other on western side of the *baradari* in Kaiserbagh. These were built by the Nawab Wazid Ali Shah during 1848-56. The plan of the gateways being polygonal, is almost identical and flanked by rectangular tower. The tri-arched gates with their Indo-European profile and parapets were crowned by an umbrella pinnacle, remains of which still exist. The recessed cusped arches were decorated with a pair of fishes in *stucco* and the Awadh emblem on the crown held by mermaids. Its western front had two projections, one rectangular and the other semi-octagonal which forms the *burji*. On the eastern front, the central passage way was also flanked by a pair of small side gates and a pair of rectangular *burjis* which are connected with upper level through spiral stair case. The old photographs and drawings show a series of gates which might have existed in the northern and southern sides of the complex. These gates were built more on European theme than in Indo-Islamic style. Each gate was flanked by two square structures with parapets and cupolas at the corners. The central, semi-circular arch-way was also decorated with mermaids and the royal emblem of Awadh. On account of this, these gates are also known as mermaid gates. The façade was also notable for its engraved circular columns with Corinthian capitals. In these gates made up of red bricks, *stucco* used to join the bricks constituted of lime, sand and organic polymers.

Sikander Bagh Gateway : This gateway located on Ashok Marg, was built by the Nawab Wajid Ali Shah in memory of his favourite begum Sikander Mahal. The gateway deserves special mention as it exhibits an exquisite architecture, embellished with relief of floral decoration. Most significant parts of the structure are two rectangular dome on either side of the gate, built in pagoda style. Adjoining this, there are circular domes. Its plan is a polygonal one comprising five distinct bays fused into one entity, dominated by a round headed arch with superimposed engrailed at the center and is crowned by a semi circular gable with semi-circular opening flanked by *stucco* fishes in high relief. Its flanking pairs of bays has rectangular door openings with pediments on its ground level. Originally it had a walled enclosure made of *lakhauri* bricks, with lime plaster and decorated with *stucco* mouldings and comprises a summer and a garden. The remains of structures like Kangoordar fortification, small mosque and gateway still survive. The monument reminds the battle of 1857 in which 2000 freedom fighters lost their lives, fighting British forces.

Alambagh Gate: This gateway built on rectangular plan is located in the south-eastern outskirts of Lucknow. It was built by the Nawab Wajid Ali Shah for his favorite begum. It is a double storey structure with arched openings and double set of chambers, representing the hybrid style of Indo-European architecture. Its western façade has recessed arches, pointed as well as foliated with pair of fishes carved in relief in *stucco*. The parapet has double set of windows, with projecting caves surmounted by pediments. The gates had large window doors, supported on four arches. Flat roof is made of wooden beam and rafters, with staircase on either side for approaching the chamber meant for guards. It led to a garden called, Alambagh, which was once famous for its blossoms and fragrant surroundings. This garden is now no longer in existence. It now stands in ruins and garden is abandoned. It suffered heavy damages during the freedom struggle of 1857-58. It is only recognized by its tri-arched façade and three storeyed hexagonal tower. Its design and layout is fully disturbed due to a number of additional structures made by the locals and is indiscriminately encroached.

This monument is also associated with the first war of independence of 1857-58. A large number of freedom fighters were shot or hanged here under the orders of General Outram.

Residency, Lucknow: Among the colonial monuments of Lucknow the Residency deserves special mention, even in its ruins. It still reflects the ambience of both the Nawabi and the British periods. South of the Gomti River on a high ground, the construction of the Residency was started by Nawab Asaf-ud-daula and completed by Nawab Saadat Ali Khan in 1800. Claude Martin also built a number of houses here and rented them to the Europeans. The history of the Residency can be traced back to 1774 when Nawab Shuja-ud-daula agreed to have a British Resident stationed in Awadh. Earlier a Residency was established in Faizabad, which was then capital of Awadh and moved with the Nawab Asaf-ud-daulah, when the capital was shifted from to Lucknow. When General Claude Martin entered the court of Awadh during the regime of Nawab Asaf-ud-daula, the site of the Residency belonged to Sheikhzadas. Claude Martin purchased a considerable portion towards the northern slope for the construction of houses. The buildings increased as and when the British power and population increased, over an area of 0.33 hectares.

Originally a beautiful building in sprawling lawns and gardens, the Residency witnessed a bloody battle during the first war for freedom in 1857. British had to take refuge in the Residency for safety. An English lobby



where British took shelter still stands as a silent testimonial to our tumultuous past.

The Residency-complex today consists of ruins of many buildings. During its historic siege in 1857, these buildings and other fortified posts were named usually after who lived there, such as Gubbin's Garrison, Sago's house, Dr. Fayer's house, Brigades mess, Kanpur Battery, Redan Battery, Sikh Square and Anderson's Post, etc.

British Public Buildings (1857- 1935): The incidents of the struggle for freedom in 1857-58 had changed the British view about Lucknow. British rulers started reorganising the Lucknow City to serve either their own religious and cultural needs or to improve the living standard and services in the city life. New buildings like churches, military cantonment, municipal buildings, educational institutions, memorial towers, hospitals, railway lines were constructed during the Victorian and Edwardian times.

The process of demolition and reconstruction in the city took place between 1858-1877. In 1877 Awadh was merged with North West Province with its capital at Allahabad. A gradual process in the construction continued till Lucknow became the capital of the United Provinces. A few churches of Victorian architecture were built in Lucknow from 1857 to 1901, in the memory of the British officers died during the first war of Indian freedom in 1857.

The Hussainabad Clock tower is the most striking landmark of the Victorian architecture of Lucknow. Erected in 1881 in the Hussainabad area it dominates the entire area near the Picture Art Gallery. The tower, about 78 meter high and 6 meters square, is decorated with arches, projecting galleries, parapet and floral moulding. It was built at the cost of rupees 1.17 Lakh. Designed by Richard Roskoll Bayne FRIBA in a

transitional Victorian Neo-Gothic style, it rises from battered base with machicolated brickwork beneath it scaping element. It has a profile capped by four domes, corner pavilions, onion dome on two levels, surmounted by a large uppermost dome which has a weather vane crown. In the lower portion of the tower, there are four large balconies entered through an arched doorway and supported on brackets. There is plain walled central section. Above this Bayne has applied diapered and button brick offsets and light coloured stone bonding at six points to provide scale in the structure. J.W.Benson of Ludgate Hill, London had manufactured the clock. It is the largest clock face in India, about 4 meters in diameter and originally had a chime of five bells, to announce the quarter hours indicated on the dial. The hands of the clock are made of copper. The minute hand is six feet and hour hand is four and a half feet long. The machicolations above the clock face allow the sound to resonate. The clock face was another innovation of its era. It was designed with multifoil translucent glass dial, illuminated at nights through the use of gas jets set within the clock tower.

British rulers in India also constructed a series of buildings in different parts of India to honour Queen Victoria, the first British sovereign of the sub-continent. The monument known as Victoria Memorial of Lucknow erected in 1880 was one of them. It stands on a red sandstone platform. Four impressive octagonal pavilions are fixed at the corners. This approached by a wide flight of steps from all sides. The central domed marble *chhattri* is built over a raised platform supported on fluted shafts and beautiful arches and its fringes are decorated with lotus buds. The projecting eaves and elegant brackets are topped by raised parapets with mughal merlon designs. The marble dome crowned by a lotus finial is balanced by four squared pavilions. In the year 1957 the park around it was named as Begum Hazarat Mahal Park which is a national monument.

During the Edwardian Era some of the finest British Public buildings were constructed in the city, i.e., between 1907 and 1935. One of the best public building constructed by the British at Lucknow during the

Edwardian times was the George's Medical College and Hospital located on the south bank of Gomti in old Lucknow. George V as Prince of Wales laid the foundation stone of this college on Dec. 26, 1905. It was built on the ancient site of the Machhi Bhawan Fort and Palace, purchased for Rupee fifty thousand by Sir Henry Lawrence in 1857. The Machhi Bhawan fort was demolished by the British army for strategic and military reason and today it incorporates a portion of the College.

Lord Hardings, the then Viceroy opened a hospital section along with a new bridge over Gomti river on January 10, 1914. The bridge is known as Harding Bridge. Subsequently the other important constructions include the Canning College (Lucknow University), and the Isabella Thoburn College for women. These structures were designed by Sir Samuel Swinton Jacob (1841-1917) in European and native Awadh architectural styles. The Medical college hospital, the Lady Students Hostel and Canning College were all provided with domes, pointed arched doorways, *chhattris* at their roofline and *chhajjas* to break the sun as part of their architectural set up. The Hospital building built in brick and lime mortar with fine lime plaster is a four storeyed structure with two storeys above its wings. Its roof line is provided by octagonal four sided corner *chhattris* with crenulated balcony. The domes and *chhattris* are crowned by finials. The Isabella Thorburn College for Women is built in the classical style.

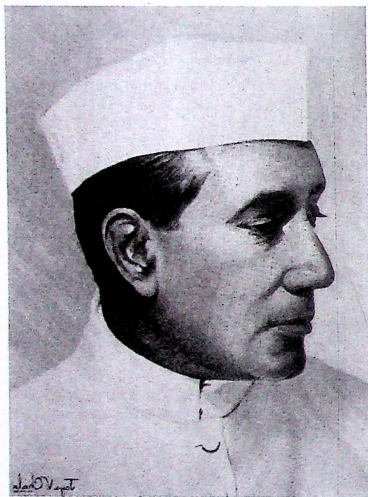
As such by 1920, several other educational institutions, such as Colvin Taluqdar College and Loretto Convent School are important to have been constructed during British time.

At the time when values seems to be collapsing, the work of great builders like Kifayatullah Shah Jahanabadi and Gen. Claude Martin who worked under the royal patronage of the Nawab Asaf-ud-daula inspires the present generation to know about the significance of Lucknow for its architectural innovation within India. In the present circumstances, the sincere task of the maintenance and preservation of the living heritage of Lucknow becomes our moral responsibility.

Birbal Sahni Institute of Palaeobotany : A Window on The Archaeology

Anil Kumar Pokharia & K.S. Saraswat

Birbal Sahni Institute of Palaeobotany, Lucknow - 226 007



While the Lucknow has its dispassionate share of its cultural heritage reflecting on the zenith of sophistication and grandeur in Nawabi Times, it has its unique reputation as an important center of education and scientific research. Several premier Institutes have long taken pride for adding feathers in the cap of this city in the scientific scenario of the country, among which the Birbal Sahni Institute of Palaeobotany and the National Research Laboratory for Conservation of Cultural Property are linked with the discipline of archaeology. The latter, established in 1976 by the Department of Culture, Government of India is dedicated to the conservation of the cultural heritage on a selective basis. The Birbal Sahni Institute of

Palaeobotany is of its own kind which in its objectives for a meaningful contemplation of fossil plants in their geological past, has also oriented for a long an interdisciplinary and appreciative avenues of Quaternary researches to resonantly resolve the paradox of pre- and proto-historic environment and the man and plant relationship in the past.

The Founder and the Brief History of the Institute

The Birbal Sahni Institute of Palaeobotany solemnizes the name of its acclaimed and scholastic founder, Professor Birbal Sahni, who was amongst the first-rank scientists of the country. Born on November 14, 1891 at Bhera, district Shahpur in West Punjab (now in Pakistan), he received his education at Lahore, first at the Mission and Central Model Schools and then at the Government College where his father Prof. Ruchi Ram Sahni held one of the chairs in Chemistry. Being meritorious he gained many academic distinctions, standing first in Sanskrit at the Matriculation examination. In 1911, he graduated from the Punjab University and move on to England where he joined the Emmanuel College, Cambridge. Here, after obtaining his tripos in Natural Sciences, he opted for research under Prof. A.C. Seward, a world-famous palaeobotanist. During the fruitful period at Cambridge he became a founder scholar, exhibitioner and winner of Hardymann prize, and also took B.Sc. Degree of the London University in 1914 and attended summer semesters at Munich steered under Prof. K. Goebel, an eminent German plant morphologist. At the same time he revised and adapted the Lowson's textbook of Botany for the Indian students. For his researches on fossil plants he received the D.Sc. of the London University in 1919 and returning home in the same year, he served as Professor of Botany for one year each in the Universities of Banaras and Punjab. He took up the chair of Botany at the University of Lucknow in 1921. His relentless efforts led to the opening of the Department of Geology, of which also he was appointed as the Head. Both the offices he held until very end of his illustrious vocation.

Along with teaching he put forward the unvarying accomplishment of original research. Professor Sahni was conferred the Sc.D. of Cambridge in 1929 and in 1936, he was elected a Fellow of the Royal Society, London.

The research contribution of Prof. Sahni covered such a vast range that no aspect of palaeobotany in India was left untouched by him. His interests were wide-Lamarckian in scope. No one who was acquainted with Professor Birbal Sahni could fail to appreciate his scientific disposition and charm of manner, as well as his scholarly qualities reflecting to outstanding estimates of his application, resolution and ability. His personality had something wholly out of the common. A bright, frank and alert expression was accompanied by a singular charm of manner. It is difficult and also not manageable here to cast light on his monumental work. Professor Sahni presided over several National and International conferences and held important position on the scientific academies and bodies.

The foremost desire and a cherished dream of Professor Sahni was to put palaeobotanical research in India on an organized basis. In September 1939 Prof. Sahni convened a committee of Indian palaeobotanists to co-ordinate palaeobotanical research and also to publish a periodic report on the progress of Indian palaeobotany. With an objective to impart a formal status of committee. The Palaeobotanical Society was founded by him on May 19, 1946 which was registered as a trust on June 3, 1946. Professor Sahni's cherished dream transformed into reality when on his behest the society resolved on September 10, 1946 to establish an Institute of Palaeobotany. Pending the acquisition of a permanent home the work of the Institute started in the Department of Botany at the University of Lucknow, with Prof. Sahni as its first Director in an honorary capacity. In September 1948, the Institute moved to its present campus received as a generous gift of an estate comprising a large bungalow on 3.5 acres of land from the Government of Uttar Pradesh, and in no time the plans were made for constructing a building for the Institute.

The Foundation Stone of the Institute was laid on April 3, 1949 by Pandit Jawaharlal Nehru, who besides being the first Prime Minister of India was at that time also the Minister of Scientific Research and Natural Resources. Only within a week of this ceremony the juvenile Institute suffered an irretrievable loss. The originator of the Institute Prof. Birbal Sahni, on April 10, succumbed to a fatal heart attack. He was, perhaps preordained to execute a mission and passed away as soon as that was achieved. Thunderbolt fell. The little

Institute was shaken to its foundations. His mortal remains were cremated within the precincts of the Institute, where his 'Samadhi' remained a sacrosanct place of inspiration to his followers to build up the Institute. To cope with unfortunate situation, the Governing Body of the Palaeobotanical Society empowered Mrs. Savitri Sahni to discharge all the duties of the Director of the Institute, in addition to those as the President of the Society, and in October 1949 renamed the Institute as Birbal Sahni Institute of Palaeobotany, as a most apt tribute to the guiding beacon.

Mrs. Savitri Sahni was faced with colossal burden of the responsibility of fostering the Institute. Shouldering the onerous responsibility she rose to occasion. Her untiring efforts and devotion led to completion of the new building by the end of 1952. Pandit Jawaharlal Nehru on January 2, 1953, amidst a galaxy of scientists from India and abroad, dedicated the building to the Science. It was realized that the Birbal Sahni Institute of Palaeobotany should function independently of the Palaeobotanical Society. The Society reconstituted itself as a purely professional scientific body and transferred the possession of the Institute to a newly constituted Birbal Sahni Institute of Palaeobotany Society, in November 1969. Under this new setup the Institute has been functioning as an autonomous research organization financed by the Department of Science and Technology, Government of India.

During the early phase the research activities of the Institute laid emphasis mainly on the composition of Indian fossil floras, the form and structure of different taxa and their distribution in time and space. Gradually the activities diversified with the growing dimensions of the research. Advancement encompassed palynological and petrological studies for building past history of vegetation and also to understand palaeoecology, biostratigraphic dating of sediments, location of areas for oil prospecting. Keeping in view of absolute dating of quaternary samples, Radiocarbon Dating was established in 1973. Considerable advances have been made, side by side strengthening the ancillary services in the recent times. This Institute offers excellent research and other facilities, and is readily resilient to changes in the dimensions of research. The seed sown by the Founder and sapling nurtured by Padamshree Mrs. Savitri Sahni has now grown into a tree, enabling the contemporary scientists to occupy the tips of its branches. The Institute symbolizes the dream of Professor Birbal Sahni, with its deep roots, a strong bole and an impressive crown, rich with blossoms and fruits.

A Window on The Archaeology

Prof. Birbal Sahni, since his childhood, was always a dreamer and visionary. He formed deep attachments from his early days. The small town of Bhera where he was born, had been a flourishing center of trade, which had the distinction of an invasion by the iconoclast, Mahmud of Gazni. The immediate interest that centers around Bhera is enhanced by the fact that this town is situated not far from the Salt Range, which may be regarded as a veritable Museum of Geology. Excursions to these barren ranges, where lie some of the most interesting episodes and turning-points of Geology, we often co-ordinated with Bhera, where Prof. Sahni went over his childhood. Here occurred certain plant-bearing formations, on the geological age of which Prof. Sahni made important contributions. All this paved the way for him to undertake the geological and archaeological studies in his massive fold of research contributions. He was greatly interested in archaeology. To this his studies of the Yaudheya Coin Moulds from Khokra-kot at Rohtak (1936) and from Sunet near Ludhiana (1941) bear witness. These archaeological discoveries by a palaeobotanist, with a stroke of geologist's hammer, symbolize the vitality and versatility of the man. It is a tribute to his genius that he threw himself heart and soul into the studies of the coin moulds. It was the affection and the high esteem in which he was held by his friends, like Rai Bahadur Daya Ram Sahni, Prof. E.J. Rapson, Dr. K.P. Jayaswal, Dr. V.S. Agrawal, Professor Jaya Chandra Vidyalankar, Rai Krishnadas and Rao Bahadur K.N. Dikshit. He published his results on "The Technique of Casting Coins in Ancient India" in a masterly monograph in the *Memoirs of the Numismatic Society of India* in 1945, setting a new standard of research in the subject. For this purpose he set himself to the study of some of the Indian coin moulds as well as those from China. This won him the Nelson Wright Medal of the Numismatic Society of India.

Prof. Sahni in 1936 reported some food grains from Khokra-kot. He assessed the values of archaeological discoveries for the understanding of early

man, during the period which constitutes a link between the time scales of the geologists on one side and of the prehistoric archaeologists on the other. The Foundation Stone of the Institute laid by Pandit Jawaharlal Nehru was designed by Prof. Sahni, consisting 77 samples of plant fossils from all over the world, embedded in a block of coloured cement. Charred rice grains from Khokra-kot and wheat grains from Mohenjo-Daro were also implanted by him in the Foundation Stone, looking in retrospect for the future scope of archaeological plant remains also in the research activities of the Institute.

One cannot overlook the transposition of love for archaeology from a teacher like Professor Birbal Sahni into one of his pupil, Dr. R.V. Sitholey. Being a palaeobotanist in traditional sense, Dr. Sitholey at a later time in 1976 produced a monumental archaeological work, on the identification of about 40 representations of plants in the bas-reliefs on the gateways of the Great Stupa at Sanchi and the railing of the Bharhut Stupa, belonging to the first and second century B.C. respectively.

In the gradual changes implemented to enhance the diversified approaches in the fossil botany, it is to the credit of Dr. Vishnu-Mittre to have revived the scope of archaeobotanical studies at the Institute, as visualized by the Founder. Initially he joined the Institute as a research scholar in 1951 and devoted to the research in Mesozoic Palaeobotany. He was awarded Ph.D. Degree in 1957 and his work stood the best of time. During his deputation for higher studies abroad, he joined Emmanuel College at Cambridge for specialization in Quaternary palynology under Sir Harry Godwin, and got his second Ph.D. Degree in 1960. Returning to India, he organized the Department of Quaternary Palynology and co-ordinated the diverse disciplines, including the archaeobotany. His first paper on the plant remains from Navdatoli-Maheshwar in 1961, marked again the furtherance of the archaeological work in the research activities of the Institute, as initially visualized by Professor Birbal Sahni. Well known for the palynological work the Quaternary Department under the superintendence of Dr. Vishnu-Mittre, commandably

" That a palaeobotanist, with no pretensions to a knowledge of archaeology, should here venture into the field of numismatics, demands an explanation. My introduction to this field was due initially to a chance discovery at Rohtak, about eight years ago, of what has since turned out to be an important mint site of pre-Christian India. But my pursuit of this line of research would have been impossible had it not been for the help and encouragement I have received from several distinguished men versed in this science of purely human interest. At the same time my own occupation in the study of fossil plants has been of assistance to me in the present work, because the aims and methods of the palaeobotanist are not essentially different from those of the archaeologist. The aim of both is historical: the interpretation and reconstruction of the past. And the method in each case is to piece together scattered fragments of evidence found buried in the earth-in either case 'fossil' evidence in the literal sense of the word." - Birbal Sahni *Memoirs of the Numismatic Society of India*, No.1, p.1. 1945.

generated a mass of data on the past vegetation, climate and land use associated with several forms of human activity. Changes in the vegetation, mimicking the effects of desiccation contributed swimmingly on the cultural perspectives. It is needless here to elaborate on the momentous contribution of Dr. Gurdeep Singh (1971, 1974) on the environment of the Indus Valley Civilization, in the context of Post-Glacial climate and Ecological Studies in North-west India. This land-mark work is reckoned with, in the archaeological world. Birbal Sahni Institute of Palaeobotany has made major contributions to palaeoenvironmental studies critical for prehistoric archaeology. Professor George Rapp Jr. of the University of Minnesota visited India in 1983 as the Ford Foundation Consultant, on "Archaeological Science in India" and visited some of the important centers of archaeological studies in the country. He also met with several Indian archaeologists and scientists engaged in research relevant to archaeology. Regarding the Birbal Sahni Institute of Palaeobotany he wrote "Dr. Vishnu-Mittre has developed Indian palynology (pollen analysis) to the point where it ranks among the best in the world. Of equal importance is the excellent dating laboratory and is now expanding into other radiogenic dating techniques.....". Archaeology is as much an international science as any other, and this Institute has its commitment for this discipline, as imagined by the thought highly of Prof. Sahni.

It was generally a trend in the past that some archaeologists used to send a few plant remains incidentally encountered by them to a botanist, for identification. Remains of crop plants from over a dozen sites brought out an excitement among archaeologists and centrality of subsistence in time and space in the writings of Dr. Vishnu-Mittre, particularly his paper in 1974, secured the scope of such studies in the Indian prehistory. The Institute became known all over as a center of archaeobotanical studies. Keeping in view, the progress, which was, however, considerable, less satisfactory had remained the comprehensive site-reports. The reason was that the collaborating botanists were not given access to digested site-data. The recovery of plant remains was confined to just small areas of the production levels in archaeological sites. As a result, the potentially rich sites also yielded much little to be convincing. The need of an active participation of a botanist in excavations was ultimately realized in 1983, for more efficient means of collecting the plant remains. Seeking active collaboration of field archaeologists and generating data systematically through the course of excavations, a major breakthrough was made. Our information from a number of sites in northern

India has consequently contributed to a much broader understanding of the ways in which pre- and proto-historic people may have exploited plants in their environment, and also as providing some clues about ancient agricultural systems. Radiocarbon dating at the Institute significantly contributed to make chronological frame-work of agricultural developments in the archaeological context. Now, some of the informations from a few settlements of Harappan culture in Punjab and Haryana and of Neolithic-Chalcolithic cultures in the Ganga Plain, have contributed to a much broader understanding of the ways in which ancient people exploited the plants in their environment, during the time-bracket of past 5000 years. The vast data seem to offer not only a point of departure from the earlier traditional picture, but also could be evaluated about the diffusional trends of agriculture. The sign of the substantial change may be regarded to have been underway in the region of Ganga Plain during Neolithic times before 2000 B.C. Diffusion of wheat, barley, lentil, pea, etc., which were the crops of Harappans in north-western India, is worthwhile to draw meaningful conclusion in terms of direct or indirect communication of settlers in the rice-growing Ganga Plain with the communities cultivating Harappan crops. We need to know what sort of cultural network led the widespread diffusion of these crops and how it took place at such an early dates, one gets the impression that it was the development in the Middle Ganga Plain, in no small part, owing to the fact that there must have been contiguous ecological zones right from the north-western India where highly advanced Harappans were flourishing, up to the regions of Bihar.

These zones were exploited agriculturally in different ways and evolved through different cultural stages, and their geographical and cultural closeness inevitably allowed the varied subsistence economy to interact and interstimulate each other (Saraswat, 2004). This supposition seeks further support by the records of rice cultivation during 3rd millennium BC, in the Harappan economy in Haryana and Punjab (Saraswat and Pokharia, 2003). The botanical approach at the Institute, in spite of some lacunae in its own right, has fetched for an enquiry from archaeologists and cultural geographers, particularly those interested in long-term cultural diffusion and trans-regional adaptations, to conceptualize the problems mechanism of early cultural transmission between the Harappan Zone in northwestern region and the rice-growing Middle Ganga Plain.

The Institute is heading to bring an increasing swing towards generating a mass of data, critical to the

varied interests of archaeologists, anthropologists, botanists and cultural historians, in the ecological and economical aspects of human past, by tinkering with priori models of exploitive relationship of early man with the plants in preferred ecological situations. Viewing domestication and the early agriculture, traces of fully domesticated rice have been found at an early site Lahuradewa in Sant Kabir Nagar District of U.P. The finds have reliably been dated to 7532 yrs BP: cal. 8259 BP, demonstrated in the present conference. The scope of further intensive work in the vast tracts of Ganga Valley, viewing the domestication and beginning of agriculture is being realized at present. Botanical aspect

in archaeology at Birbal Sahni Institute of Palaeobotany is no longer peripheral but of considerable significance to many unresolved problems of human past. The most fateful and portentous development in the whole story of man was his learning how to produce food by intention, instead of harvesting it from natural production. The working avenues in this line of archaeology are immediate requirements. Where a vision is limited, action is circumscribed. The novelty of such integrated research work, as visualized by Prof. Birbal Sahni, is at present evinced up to know by botanists and archaeologists at the executive and programmatic levels in the future excavation campaigns.

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A TRIBUTE TO PROFESSOR BIRBAL SAHNI

A bright, frank and alert expression accompanied by singular charm of manner to view on Himalayan Uplift and caring for stern resolution and correct observation from minute facts on the Stone Age Man, as early in 1936

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THE HIMALAYAN UPLIFT SINCE THE ADVENT OF MAN: ITS CULTHISTORICAL SIGNIFICANCE

By B. SAHNI, Sc.D., F.G.S., F.A.S.B., F.R.S.
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IN this age of specialisation, which inevitably tends to confine thought in compartments, one is apt to overlook or to underrate the bearings of one branch of science upon another. A palaeobotanist or a geologist, accustomed to think of Time in millions of years, stumbles upon an archaeological discovery which at once brings him down to the human epoch. It forces his attention to the wanderings of man since the time he began to leave signs of his handiwork in the form of stone or metal implements, inscriptions, coins, seals or other monuments of his ever-increasing intelligence and power. The object of the present article is to draw attention to the significance of recent geological changes in northern India to the wanderings of pre-historic man.¹

Among the most interesting scientific results of the Yale University North India Expedition², led by the German geologist

Dr. Hellmut de Terra, is the discovery, recently published, of Palaeolithic stone-flake industries in three widely separated parts of northern India. The location of these sites of early human activity is of special interest from our present point of view. One was found by chance at Chitta, southwest of Rawalpindi, in the Potwar plateau; another, also accidentally discovered, was at Pampur, a few miles east of Srinagar, in the Kashmir valley; the third was at Kargil, just beyond the main Himalayan range, on the ancient trade route over the Zoji Pass connecting India with Central Asia, Tibet and China. A few years previously stone implements belonging to two distinct cultures, one Lower to Middle Palaeolithic, the other Middle to Upper Palaeolithic, had been discovered near Pindigheb³, in the Attock district, only about 10 miles from the Chitta locality (see foot-note 1).

These relics of the Old Stone Age, discovered at short intervals within the last few years, focus attention upon northern India as an area of unusual promise for our knowledge of early man. The special value

1. A brief account of the physical conditions in Kashmir during this period, written from the point of view of the general reader, is given in the July number of this Journal, under the title: "The Karewas of Kashmir". The map in that article also illustrates the present paper.

2. Hawkes, Hawkes and de Terra, "Palaeolithic human industries in the N.W. Punjab and Kashmir and their geological significance", *Mem. Conn. Acad. Arts & Sci.*, 1934, 8, Art. I, i-iv, 1-15, six text-figs., two plates.

3. *Loc. cit.* p. 9. Another discovery of Palaeolithic implements in the Potwar area, by Mr. D. N. Wadia, is mentioned below.

of these discoveries lies in the fact that at least some of the finds are stratigraphically datable, and therefore constitute a valuable link between the time-scales of the geologist on the one side and of the prehistoric archaeologist on the other.

For details the reader must refer to the illustrated memoir by Hawkes, Hawkes and de Terra, published under the joint auspices of the Connecticut Academy of Arts and Science and of Yale University, and to the literature therein cited. Here a few extracts must suffice as a basis for discussion.

At Chitta, numerous flakes of indurated limestone, some of them of a material which must have been brought from a locality half-a-mile off, were found in a terrace overlying a lake deposit regarded as of early Pleistocene age. The geological evidence points to the implementiferous layer being of Middle Pleistocene age. At least four of the specimens are considered to be definitely due to human agency and have been assigned to the Lower Palaeolithic. The conclusion is that this race of man flourished here during an interglacial phase or phases preceding the last major Pleistocene glaciation of northern India.

At Pampur, in a Mid-Pleistocene lake deposit of the Upper Karewa formation, Dr. de Terra found, among other relics, a broken flake of trap (volcanic) rock. This is also regarded as being undoubtedly an artifact, and as showing affinity with the Levallois stone-flake industry of Europe, which there stretched from Lower to Middle Palaeolithic times. This specimen is said to belong to the same great family of flake industries as those found at Chitta; but being of more refined workmanship it may be of Middle rather than Lower Palaeolithic age. Incidentally we may add that in an ancient soil cap covering this lake deposit, about nine feet below the surface, the remains of a very much younger culture were found, including ash and charcoal, with pottery and the clay figure of an ox. So far as I know, these have not yet been described, but their dating would obviously be of the greatest interest in view of recent speculations concerning the distribution of that archaic but highly developed Indian civilisation to which the probably unduly restricted name of the Indus civilisation has been applied.

The Kargil find was a solitary flake of trap, picked up on the surface of an old terrace. It must have originally belonged

to the same family of industries as those recognised at Chitta and at Pampur, but was subsequently re-worked (probably in post-glacial times) into a square-ended scraper which might be of Upper Palaeolithic or even of Neolithic date. Although not stratigraphically datable, this surface find "helps to confirm the presence of Palaeolithic (and probably Lower Palaeolithic) flake-industries in the N. W. Himalayan region".

Of the two industries recognised at Pindigheb we are here concerned mainly with the older, which is regarded as Lower to Middle Palaeolithic and clearly related to that of Chitta, although a good deal more refined. In the opinion of the experts "neither the Pampur nor the Kargil flakes would be out of place in the Pindigheb find". Incidentally, some of the Pindigheb specimens indicate contact with the South Indian stone-core culture which thus seems to have extended its influence into northern India, although its original affinities are clearly with Africa.

Further observations of great interest in the present connection are made by Hawkes and Hawkes and de Terra on p. 10 of their memoir. They tend to the important conclusion that the flake implements from Chitta resemble those of Peking man (*Sinanthropus pekingensis*), who is regarded as an early member of the same group of human races as Neandertal or Mousterian man in Europe. We may sum up the entire evidence by saying that round about Middle Pleistocene time, when the main valley of Kashmir was still occupied by the great "Karewa Lake", interglacial man of about the same stage of cultural development as Neandertal or Mousterian man in Europe and as Peking man in the Far East, flourished (a) in the plains of the northern Punjab, (b) on the shores of the Karewa Lake in the heart of Kashmir and (c) just across the Great Himalayan range.

It is to this evidence of contact between early human cultures on the two sides of the main Himalayas and of the Pir Panjal range that I wish to draw the special attention of the reader.

The distribution of primitive man, like that of plants and animals, must always have been largely controlled by natural barriers, such as seas and high mountain chains. The close cultural contacts between India and China during the historic period are not difficult to explain. Not only do we

possess ample evidence of the sea-faring powers both of the Chinese and of our own people in ancient times, but Buddhist pilgrims have long been known for their hardness as mountaineers. Palaeolithic man, on the contrary, if one may say so without insult to his memory,⁴ presumably had no incentives to travel beyond the hunt for the necessities of life. Although he may well have wandered between the Punjab and Kashmir by way of the Jhelum valley, it would be difficult, without special evidence, to explain his crossing even the Zoji-La (11,300 ft.) which is the lowest pass over the Himalayas. It is here that the significance of the recent work on the uplift of the Himalayas during the human epoch comes in. No one, so far as I know, has suggested that *migration across these mountains was possible in palaeolithic times because the passes over them were then presumably not so high as to offer a serious obstacle to primitive man.*

On the contrary, Dr. de Terra regards it as "a surprising fact" that traces of a prehistoric human industry should have been discovered "even north of the Central Himalayan range on the border of Little Tibet". It is true that at the present moment we have no adequate idea of the extent to which the Himalayas have been uplifted since Kargil man existed. Not only is the exact date of the Kargil terraces still unknown, but the solitary implement from there was only a surface find: and the evidence of subsequent retouch which it shows further complicates the history of its provenance. But at the same time we have the expert opinion that "in its original form it may certainly be attributed to the great family of Palaeolithic flake-industries" known also from Chitta and from Pampur, and that a Lower Palaeolithic date is indicated. Considering that in recent years the evidence for Mid-Pleistocene and even late Pleistocene upheavals in the Himalayan zone has steadily accumulated—evidence to which Dr. de Terra himself has made such outstanding contributions—is it not at least a plausible hypothesis that the Zoji-La, if not other passes, afforded to Palaeolithic man an easy traverse across the Himalayas?

For this evidence of geologically recent upheavals in northern India we can scarcely

refer to a more authoritative source than Dr. de Terra⁵ himself, who has corroborated and extended the work of his predecessors in the field, namely, Dainelli, Filippi, Middlemiss, Wadia and others.⁶ Although a detailed account of his researches is still awaited, he has told us enough to confirm the old view that in the Himalayan zone the mountain-building movements initiated towards the close of the Mesozoic era continued, at intervals, till as late as the end of the Pleistocene and even into sub-Recent times, that is, till long after the advent of Man in northern India.

In his important work on Prehistoric India (1927, pp. 52-91) Professor P. Mitra of Calcutta has discussed in some detail the changing geological background of the history of primitive man in northern India. But it may not be amiss to give here a brief statement of the outstanding conclusions based upon recent work.

(i) The region of the Himalayas was once occupied by a Mediterranean ocean, the Tethys Sea, separating India (which probably lay south of the Equator) from the Eurasian land-mass in the north. Into this sea India sent out two great promontories: the Kashmir promontory on the N.W. (which according to Wadia was for some time connected to Eurasia by an isthmus) and the Assam promontory on the N.E.

(ii) Following an estimate by R. D. Oldham, de Terra concludes that the width of this ocean in Triassic times was at least 1,485 kilometers (930 miles).

(iii) Throughout the long ages from the Permian period till the end of the Eocene, the bed of this ocean was settling down under the weight of the accumulating sediments totalling a thickness of well over 15,000 feet.

(iv) With the dawn of the Tertiary era the loaded ocean floor ("geosyncline") began to upheave: the sediments were squeezed, uplifted and folded into a mountain chain by the slow but irresistible movement, towards each other, of the northern and southern land blocks, between which they were caught up as in a vice.

(v) Round the resistant angular promontories the pile of sediments, folded somewhat like a Japanese fan, became bent

5. de Terra, "Himalayan and Alpine orogenies", 1934. *Rep. XVI, Internat. Geol. Congr.*, Washington, 1933. See also *ibid.*, 1936, in *Nature*, April 25, pp. 686-688 and *Science*, March 6, pp. 233-236.

6. References in de Terra, 1934, and in Wadia's works.

4. He certainly had an extraordinary eye for fleeting line and form, and could give points to most of us in the delineation of running animals.

sharply to the southwest (into Hazara)⁷ and to the south (into Burma).⁸

(vi) These "orogenic" or mountain-building movements continued, off and on, throughout the Tertiary era and far into the Quaternary or Pleistocene period, when the greater part of northern India came under arctic conditions during at least three epochs separated by warmer (interglacial) intervals.

(vii) Along the southern border of the mountains, at least, there is clear evidence that, as in the Alps, the folds of the strata followed like waves one behind the other, sometimes leaning over those in front. During the Middle Pleistocene "the Potwar basin was overthrust by Himalayan folds advancing southward",⁹ and in places broken off portions of the folds ("nappes"), composed of the oldest rocks from the Inner Himalayas, were carried horizontally for several miles to the southwest, riding over the folds of the much younger Siwalik strata.¹⁰

(viii) The final phase of uplift of the Himalayan mountain belt witnessed the folding and dragging up of the youngest Karewa beds on the Pir Panjal range by at least 6,000 ft. and the tilting of late Pleistocene lake terraces round Srinagar.¹¹ The effects of this upheaval were felt in the Potwar and even as far west as the Salt Range, which shows post-Pleistocene deformation.¹² Wadia records that between the Soan and Rawalpindi a thickness of some 5,000 feet of the upper Siwalik Boul-

der Conglomerate (which cannot be older than the Lower Pleistocene) have been tilted into a vertical position. These beds contain fossil bones of the elephant, horse, dog and other familiar animals. In addition Wadia found several hundred human artifacts, probably of Chellean age, which are also suspected to belong to the Boulder Conglomerate and would therefore show that the tilting movement must have taken place after the arrival of man in this part of the World. In the Salt Range, again, Wadia and Anderson have shown that strata as old as the Cambrian have been thrust over Siwalik beds of Late Pliocene age.

On various grounds Godwin-Austen based the opinion that "within a comparatively modern period, closely trenching upon the time when man made his appearance upon the face of the earth, the Himalaya has been thrown up by an increment approaching 8,000 or 10,000 feet."¹³ Indeed there are geologists who hold it as probable that this movement of uplift is still in progress.¹⁴ The frequent earthquakes felt all along the southern face of the Himalayas, parallel to the Great Boundary Fault (a plane, or rather a series of planes, of weakness in the strata from Baluchistan as far as Burma), may be cited as proof that stability has not yet been reached. A further argument is derived from the evidence of the far-reaching changes which have taken place in the drainage of the Indo-Gangetic plain within recent times.

The way in which the river systems of northern India responded to the changing aspect of the land has been described in an unusually clear and interesting paper by Wadia.¹⁵ He supports the view of Pilgrim and Pascoe¹⁶ that during early Pleistocene times the drainage of the present Ganges valley flowed northwestwards and was discharged into the Indus by a great prehistoric river. Of this river, variously called the Siwalik River or the Indobrahm (for the Brahmaputra was a tributary), the lower part is believed to have flowed along a northwest prolongation of the present Jumna river,

7. Wadia, "The Svataxis of the N.W. Himalayas: its rocks, tectonics and orogeny," *Rec. Geol. Surv. Ind.*, 1931, LXX (ii).

8. Sahni, "Permo-Carboniferous life-provinces, with special reference to India", *Curr. Sci.*, 1935, IV (6), 388-390, and literature cited, see esp. Figs. 2, 3. The view here expressed as to the southward continuation of the Himalayan mountains into Burma (as opposed to the idea of their eastward continuation into China, once suggested by Prince Kropotkin and J. W. Gregory and now advocated by Kingdon Ward) has been strongly supported on geological grounds by Mr. D. N. Wadia in a paper recently sent for publication in the *Himalayan Journal*. I have had the privilege of reading in advance this admirable exposition, by an acknowledged authority, of the origin and structure of the Himalayas.

9. de Terra (1934), p. 8.

10. Wadia (1931), pp. 215, 219.

11. de Terra (1934), p. 9; Hawkes, Hawkes and de Terra (1934), p. 14.

12. Wadia, "The Tertiary geosyncline of N.W. Punjab and the history of Quaternary earth-movements and drainage of the Gangetic trough," *Quart. Journ. Geol. Min. & Met. Soc. of India*, 1932, 4 (3); de Terra, 1934, p. 9.

13. See Burrard and Heron, "A sketch of the geography and geology of the Himalaya mountains and Tibet," 1933, 2, 74.

14. Wadia, "The trend line of the Himalayan range: its northwest and southeast limits," *Himalayan Journ.*, 1936 (vide supra, note 8).

15. Wadia, 1932, pp. 86-95.

16. References in Wadia, 1932.

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and then through the broad but now almost deserted channel of the Soan River in the Potwar, to join the Indus near Makhad. With the differential earth movements which converted the old Potwar basin into a plateau, the Punjab section of the Siwalik River was severed from the upper part of the channel, in which the flow of water became reversed and which became the modern Ganges. Wadia writes, "There are both physical and historic grounds for the belief that the Jumna, during early historic times, discharged into the Indus system, through the now neglected bed of the Saraswati river of Hindu traditions."¹⁷ In the low plateau, west of Delhi, which now forms the imperceptible watershed between the Indus and Ganges systems, there is plenty of evidence of a varied character in support of this popular belief.

To return to our point. All these changes in the physical background cannot but have exercised a profound influence upon the development of human cultures in northern India. Without more precise data (which a close study of the finely layered clays or "varves" in the Karewas of Kashmir¹⁸ seems to promise) it would be rash to express an opinion about Godwin-Austen's view of the extent of the recent elevation of the Himalayas. But unless his figures are a gross overestimate (which to the present writer seems highly improbable) we have no reason to assume that the Himalayas or the Pir Panjal range were a barrier to the migration of Palaeolithic or even Neolithic man.

On the view here adopted northern India and China must have had direct contacts across the Himalayas since the dawn of human existence, and the passes over these mountains probably mark some of the most ancient routes trodden by man. If, therefore, signs of Stone Age man were even to be found, say, on the Zoji-La itself, such a discovery would only be in accordance with expectation.

It is for the future to show how far these routes were used by the descendants of

Neolithic man in India, that highly enterprising and intelligent race of people who flourished nearly 5,000 years ago in the Punjab, Sind and beyond, and who were among the first to learn the use of metals. Their distant connections to the west are now well established. They also employed materials of which the nearest known sources are far away in peninsular India. Their knowledge of *śilājī* (a drug of obscure nature used in India since time immemorial) may well indicate that they had explored the Himalayas. And who knows but that the script of Harappa and Mohenjodaro, which still baffles the palaeographer, will after all prove to have had early affinities with the ancient Chinese writings?¹⁹

Conclusion

The main point of this article is that between India and China cultural contacts have probably existed since the very dawn of human existence. Long before man conquered the ocean intercourse between these two ancient countries was possible by the direct route across the Himalayas which, during Palaeolithic and Neolithic times, were probably not so high as to form an effective barrier.

GULMARG,

July 1, 1936

Postscript—I have just read a brief report of the recent discovery by Dr. de Terra (*Science and Culture*, July 1936, 49-50) of an outpost of the "Indus" civilization in the valley of Kashmir, not far from the route connecting Srinagar with the Zoji Pass. The exact locality is the village of Burzahom, only a few miles north of the present site of Srinagar, a city which thus proves to have a far longer history than ever imagined.

This discovery lends point to the suggestion that we may hopefully look for an extension of this ancient culture, marking the end of the Neolithic period, even across the Zoji-La.

July 23, 1936

17. Wadia, *loc. cit.*, p. 93.

18. As explained in a previous article, "The Karewas of Kashmir" (*Curr. Sci.*, July 1936).

19. See C. I. Fabri. "Latest attempts to read the Indus Script", *Indian Culture*, 1(1), p. 53, where the recent work of Dr. G. de Hevesy and of Professor Baron von Heine-Geldern is referred to.

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Lucknow Theatre-A Perspective

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Lucknow theatre, though almost amateur, has a glorious and rich past. Its history dates back to about 150 years. It is said that it was during the years 1840 to 1850 when Nawab of Lucknow, Wajid Ali Shah – a well known art connoisseur, first staged a Rahas – “Kissa Radha Kanhaiya Ka” followed by stage enactment of his own story “Daryaye – ta – Asshuk”. Subsequently, he started Shahi Theatre Group, which brought Lucknow theatre to an organized form. The play “Inder Sabha” written by Sayyad Aga Hasan Amanat Lakhnavi was staged around the year 1853 and became so much popular that its performance were repeated. In early years of its happening, Lucknow theatre got linked to a controversy : in the year 1875, Great National Theatre Company of Bengal came to Lucknow and staged their play “Neel Darpan” at Chatar Manzil (presently housing Central Drug Research Institute). The show faced the wrath of the British Government because the play highlighted the atrocities on Indians by Britishers who came here to negotiate the trading of Neel Gai. Furious British Govt. brought “Dramatic Performance Act” to ban such plays which point towards the high-handedness of Britishers. However, Lucknow theatre remained active during that period with stage shows of Inder Sabha, Rahas, Nautanki, Raas Lila & Dhubiya Raag etc.

It was in the year 1902 when, with the formation of a theatre group named “Prabodhini Parishad”, Hindi theatre in Lucknow got an important outline and emerged as a strong media of expression and entertainment. Ganga Prasad Agarwal and Shyam Sunder Kapuria were instrumental in the formation of Prabodhini Parishad with a sole objective to ensure hectic Drama activities. Thereafter, 1908 saw emergence of another very active theatre group Hindu Union Club, which was formed with the efforts of Raja Ram Nagar (F/o Amrit Lal Nagar), Gopal Lal Puri and Kalidas Kapur. Further, prominent theatre activities in Lucknow took place in 1912-13 when Pt. Madhav Shukla, an active theatre person of Allahabad came to Lucknow on transfer. Shukla, had by that time

established himself as writer, actor & director and staged a number of plays namely Satya Harish Chandra, own written “Maharana Pratap”, “Mahabharat – Purvardh” and Bhartendu Harish Chandra's plays. With the passage of time, theatre activities in Lucknow continued to surge ahead and till 1940 it remained major cultural activity. Plays were being staged – sometime more – sometime less and new Drama Clubs were formed while some clubs closed down or slowed down. Major Drama Clubs of this period were Hindu Union Club, Young Man's Musical Society, Madan Mohan Rastogi Hindu Association-Ashrafabad, Indian Railway Institute Club-Chitwapur, Indian Heroes Association, Mahalaxmi Club-Chaupatia. Other clubs which also made their presence felt were Sanskritik Sangh and Navyuvak Samaj both of Raja Bazar, and Sahitya Sansad. Aga Hashra Kashmiri, Bhartendu Harishchandra, D.N. Rai, Radhey Shyam Katha Vachak, Harikishan Premi, Shakespere etc. were the popular playwrights of that time while episodes from Mahabharat, Ramayan, other mythological and historical events were popular contents of the other scripts taken-up for plays alongwith Hindi Translation of Bangla Plays. Worth-mentioning plays staged during that period were Satya Harishchandra, Julius Ceasar, Maharana Pratap, Chandra Gup, Bilv Mangal, Shahde Hawas, Tage Tilisim, Khubsurat Bala, Silver King, Yahudi Ki Ladki, Gautam Budh, Durgawati, Mewad Patan, Shahjahan, Abhimanyu, Bharat Durdasha, Deval Devi, Maharana Pratap, Daksha Prajapati & Sati Anusuiya. There were number of artistes which were active on the stage and they were : Raja Ram Nagar, Gopal Lal Puri, Vishoo Babu, Baldev Jaitely, Tulsi Ram Vaishya, Jogendra Prasad Saxena, Janab Aleekdar, Sudhanshu Kumar Bose, Swaraj Kumar Bose, Gokul Chandra Rastogi, Nand Kishore “Bachche Babu”, Tej Krishna Srivastava, Kishan Lal, B.N. Sinha, Radhey Bihari Lal, P.N. Srivastava, Balak Ram Vaishya, Sant Ram Shukla, Mahaveer Prasad Agarwal, Gauri Shanker Tripathi, Bishan Narain Tandon, Shaharyaar Mirza, Nawaboo, Krishna Agarwal etc.

Some of the interesting highlights of stage productions of the plays during that period are –

- Parsi style of theatre dominated the productions.
- Cover-Discover was the common arrangement wherein curtains with paintings were rolled-up or rolled-down to enact scenes on the stage.
- Painting was used for make-up and as such, make-up artistes were generally called as "Painters".
- Mantle Lights were used for Light effects which were later replaced by Petromex. In 1935, use of foot lights came into existence and spot light was created with the help of arc-lamp and tin boxes.
- Female characters were played by Male artistes only.

During the period after 1940, theatre activities in Lucknow slowed down appreciably due to flare-up in the Independence struggle, II World war and onset of cinema as well as Radio. Yet, there were plays being staged, of course not very often and were restricted mostly to the annual functions of Schools/Colleges/Universities and major Indian Festivals like Holi, Dussehra & Diwali etc. However, Indian Peoples Theatre Association (IPTA), hit the theatre scene of the country in the form of a revolution. Branch of IPTA was opened in Lucknow also sometime in 1943, when a number of artistes joined it and started staging the plays. During this period, Kala Natya Mandir, Ganeshganj was established by active theatre persons of that time like Rajnath Kochhar, Radha Ballabh Chaturvedi, Harikrishnan Arora "Hallo Bhayiya", Sita Ram Khanna, Kailash Tiwari. It staged a number of plays like Nirdosh, Nadir Shah Durrani & Parvane etc.

In the era prior to independence, there was no well equipped auditorium for plays. However, plays were generally staged in various auditoria or halls like Railway Institute Club Hall, Chitwapur; Tilak Hall, Municipal Corporation Building; Bengali Club, Hewett Road; Cathedral Hall, Hazratganj; Rifahe-am-Club; Chatter Manzil; Safed Baradari, Kaiserbagh; Ganga Prasad Memorial Hall, Aminabad. Besides these Halls, plays were also staged very commonly in the open at – Roof of Kothi of Madan Mohan Rastogi(Ashrafabad) and after 1941, it shifted to ground floor Lawns of the Kothi; Field opposite Rifahe-am-Club(Golaganj), Lawns of Motilal Bankers(Behind Hanuman College, Raja Bazar); Bagh

Makka (Raja Bazar); Jagdishpur ka Dharamshala (Yahiaganj) etc.

After country's of Independence in the year 1947, a fresh wave of socio-cultural consciousness was sweeping across the entire country and a fresh energy among the people of India was being very obviously felt. Effect of such fresh energy was also reflected in the theatre activities of Lucknow which in turn activated artistes in all age groups. Theatre groups were recharged and new artistes were motivated to join the theatre activities and new theatre groups were formed. From the year 1950 onwards was the period of hectic theatre activities in Lucknow. Amrit Lal Nagar had come back to Lucknow from Mumbai and with his newly acquired enthusiasm for theatre emerged as a keen dedicated theatre personality. Others like Yashpal, Bhagwati Charan Verma, Sudhanshu Bose, Swaraj Bose. Dr. Ghanshyam Das, Raghuvir Sahai, K.N. Kacker, Kunwar Narain Singh, Naresh Mehta, Sant Ram Shukla, Hallo Bhayia, Radhey Behari Lal, P.N. Srivastava, Nand Kishore(Bachche Babu) etc. alongwith some of the Drama Clubs like Kala Mandir, Madan Mohan Rastogi Hindu Association, Lucknow Natya Sangh, Sanskritik Sangh, IPTA, Lucknow Rangmanch, Natraj, Bharti, Rashtriya Natya Parishad made noticeable impact on the local theatre.

In 1951, a newly formed drama club "Lucknow Natya Sangh" staged Yashpal's famous literary piece Nashe-Nashe Ki Baat at Chatter Manzil which was a collective directional effort with actors like Yashpal himself, Raghuvir Sahai and K.N. Kacker.

In 1953, Lucknow theatre found itself in a difficult situation, when Begum Razia Sazzad Zahir's stage adaptation of Prem Chand's story "Idgah" directed by Amrit Lal Nagar was being performed at Rifahe-am-Club, Govt. tried to stop the show under Dramatic Performance Act of 1876 and then moved the court against the organizers. This move of the Govt. was widely criticised. However, the case was rejected by the court in 1956 considering the provisions of the Act as against the freedom of people after Independence. In another development in 1953, Prithviraj came to Lucknow with his Drama group and performed the plays "Deewar" & "Pathan" in Mayfair Hall(Hazratganj) and "Shakuntla" at Jagat Cinema Hall(Aminabad). He was accorded an Honour at Rifahe-am-Club and on behalf of Lucknow

artists few scenes of play 'Raksha Bandhan' directed by Sudhanshu Bose were staged before him.

Amrit Lal Nagar continued to let his presence felt on Lucknow theatre. He directed many plays over a period of time : among which are Skandgupt(1949), Idgah(1953), Chet Singh(1956), Godan(1956), Rupaiya Tumhe Kha Gaya(1957), Nukkad Par(1963) etc. He also wrote plays like : Ygavtar, Nukkad Par, Parityag etc. It was Nagar Ji who used a revolving stage for the first time in Lucknow for the play Godan at Navyug College and Trolley Stage for the play Rupaiya Tumhe Kha Gaya. He motivated and inspired the theatre to surge ahead with activities. He remained active in Lucknow theatre till 1963. He encouraged theatre activities also during his assignment as Vice-Chairman of U.P. Sangeet Natak Academy during 1978-81.

New Skyline Composite Setting Stage was introduced in Lucknow in the year 1955 in play "Vikramaditya" written by Sitaram Chaturvedi and codirected by Chaturvedy and D.N. Sanyal. Another achievement of this event was the construction of open-air stage inside the campus of Girls Hostel of Bhakhande Music College, especially for the show of this play. A play "Mughlon Nein Saltanat Baksh Di" based on a novel of Bhagwati Charan Verma was staged in 1956 under the direction of Dr. Ghanshyam Das in which two Americans studying in the city portrayed the characters of Britishers. Dr. Ghanshyam Das groomed himself into direction with the plays like Raksha Bandhan of Hari Kishan Premi in 1955 and put a number of plays mostly in Fairfield Hall of Christian College, Golaganj.

Already active Lucknow stage got rejuvenated when K.B. Chandra, a well known theatre person of Allahabad, was appointed Song & Drama offices in Deptt. of Information of U.P. Govt. It was in the year 1957. Under the guidance of K.B. Chandra, a Drama troupe was initiated by the Deptt. of Information recruiting a large number of local theatre artistes on fixed salary. It took off with the staging of K.B. Chandra's play "Sarhad" in Moti Mahal Lawns in 1958. Another important event of 1958 is said to be the commencement of Annual Drama Festival by Deptt. of Information, Govt. of U.P., in which best stage play team was awarded with "Shakuntala" honour. It used to be held in the ground adjacent to the Information Deptt. office building on Park Road i.e. where Civil Hospital Building stands today. It was also

held sometime in Baradari, Kaiserbagh. Highlight of this Drama Festival was the entry by Tickets of Rs. 0.50 or Rs. 1.00. However, festival could not survive beyond 1969. A large number of theatre artistes were there and some of their names deserves mention :- Pt. Vishwanath Mishra, Pramod Bala, J.N. Chopra, Rajeshwar Bachchan, Hallo Bhaiya, P.N. Srivastava, Sant Ram Shukla, Urmila Saxena, Shahid Jafri, R.K. Gupta, Y.D. Pandit etc.

While, Annual Drama Festival of Deptt. of Information, U.P. Govt. was providing opportunity to the theatre lovers of Lucknow to come across different stage plays, on the other hand theatre groups of Lucknow were also very active. Kala Mandir, Ganeshganj staged its last play "Chutkara" (Pahli Tareekh) written & directed by Rajnath Kochar at Cathedral Hall. In the year 1957, Sudhanshu Bose, a known stage Director since 1926 staged "Noorjahan" in 1958 and "Chandra Gupta" in 1962 and established his long experienced innings in stage direction. In 1958 well known play wright Mohan Rakesh came to Lucknow with his new Script "Ashadh Ka Ek Din" and staged the same in Jan '59 with Yagya Dev Pandit and Ram Pal under the banner of new group "Rangmanch". During the same period Sanskriti Sangh presented Dr. Ram Kumar Verma's "Prathvi Ka Swarg" directed by Rajeshwar Bachchan at Ganga Prasad Memorial Hall, Aminabad, and in 1962 presented Raktdaan written by Hari Kishan Premi and directed by Sant Ram Shukla. A new Drama Club Friend's Circle formed sometime in 1962 by theatre enthusiasts of Raja Bazar, staged in 1963 a play "Banaspti Shayar" directed by Sant Ram Shukla, another play Teen Din Teen Ghar in 1967 and lastly in 1971 a play Jal Kumbhi both under the direction of Rajeshwar Bachchan. In Jalkumbhi, its writer, now a famous satirist & poet, K.P. Saxena also participated as an actor. K.B. Chandra also remained busy with the direction of plays for Govt.'s Drama Troupe - "Maati Jaagi Re" written by Gyan Dev Agnihotri(1962). Vijay Yatra of Bhagwati Charan Verma(1964), Shaque written by Kunwar Narain(1966), Dushman written by D.P. Sinha(1969), Dayre written by Om Tiwari Arun(1970) - some of the productions recorded hundred or more performances through out the state. Another play Sukhi Dar Phooli Patar written by K.B. Chandra and directed by J.N. Chopra was staged at open air stage of N.B.R.I. and its shows ran for continuous 25 days. Script was awarded by Govt. of Maharashtra. In 1967, K.B. Chandra mounted the grand production of Play

"Jai Somnath" based on Gujrati Novel of Kanahiya Lal Manik Lal Munshi in which almost all stage artistes of Lucknow participated. It is said to be a memorable stage event of the city in which K.B. Chandra exploited all the stage techniques available at that time to the advantage of the production.

Another Drama Club "Nakshatra International" formed in 1966 commenced its activities with the play Kanchan Rang (Original Writer : Shambhu Mitra, Translation : Nemi Chandra Jain) directed by Kumud Nagar (Son of Amrit Lal Nagar). It got prominence with its second play "Laghu Keshni Tiruvallidum" (writer : Padamkant Malviya) directed by Iqbal Majid winning prize in Girish Chandra Ghosh Memorial Hindi-Bangla One Act Competition in the year 1968. Its another play Jagdish Chandra Mathur's "Konark" directed by Kumud Nagar staged in June '68 is known for introducing actors namely Urmil Kumar Thapliyal and Jaidev Sharma "Kamal" who later became famous theatre personalities of the city. Rajeshwar Bachchan also directed some plays for Nakshatra.

The decade of 1960-70 also saw another two important events which had obvious impact on the city's theatre activities – U.P. Govt. established in the year 1963 a separate agency by the name "U.P. Sangeet Natya Bharti" which later came to be known as "U.P. Sangeet Natak Academy" for the promotion of Sangeet and Natya activities in the state, and second one being the opening of "Ravindralaya" – a magnificent well equipped auditorium at Charbagh in the year 1964. Ravindralaya came as gift to Lucknowites and theatre lovers, when all Drama presentations shifted to the stage of Ravindralaya and it became the major centre of such activities.

With K.B. Chandra, Santram Shukla, J.N. Chopra, Rajeshwar Bachchan, Dr. Ghanshyam Das, Kumud Nagar establishing themselves as successful stage directors, another man Kunwar Kalyan Singh also emerged as noticeable and successful stage director who formed his well known drama club "Rashtriya Natya Parishad" and brought to stage a number of plays viz : Shambar Kanya, Hamara Desh, Chitra Lekha, Hamara Gaon, Bhagwan Dekhta Raha, Gautam Budh, Kashmir Ki Ek Shaam, Bheegi Palkein, Ashadh Ka Ek Din, Lavkush, Backdoor, Chingari, Andhi Aur Toofan, Samvat Ek Vikrami etc. and also brought a number of artistes – both young and old to his experienced fold.

This was the period when stage plays witnessed innovations – realistic approach and design were being used to replace Parsi Style, Box type sets consisting of Flats/Panels were mostly used as per requirements, modern techniques in make-up, dress and lights were being used freely and – all these factors made stage productions more realistic, more interesting and more communicating with the audience. With all these factors, Lucknow theatre was progressing ahead with capable directors, fine actors, appealing productions and active & creative theatre artistes.

A very active theatre had emerged in Lucknow which subsequently stepped into the decade of 1970-80 with a number of new theatre groups coming-up, a number of youth joining the theatre mainstream and taking a shape of meaningful revolution. The period, in the annals of recent history of Lucknow theatre, is considered to be Golden era of Lucknow theatre.

In 1971 Prof. Satya Murti, popular known as "Massab" of Kanpur established a new theatre group "Darpan" in Lucknow with the help of Ram Govind, Swadesh Bandhu, Jaidev Sharma "Kamal", Hallo Bhaiya, Urmil Kumar Thapliyal and Bimal Banerjee. First play of Darpan was "Khamosh Adalat Jari Hai" directed by Ram Govind, who later directed another plays viz. Steel Frame (1971), Romance Romance, Shabash Anarkali & Nukkad (all in 1972) and shifted himself to Mumbai alongwith actress wife Maya Govind to Mumbai.

Senior artiste Dr. Ghanshyam Das was also active directing & staging the plays like his directorial venture of play "Vajrapat" based on story of Premchand which first staged in Ravindralaya in 1971 and then repeated in 1973 in Christian College Fairfield Hall.

U.P. Sangeet Natak Academy started State Drama Competition in the year 1972 bringing about renewed energy on the stage of Lucknow theatre, Khamosh Adalat Jari Hai of Darpan Lucknow won the second prize in the first competition in 1972, Darpan's Evam Indrajit won first prize in 1973 and Lucknow's Udyan won third prize for Dhai Akshar Prem Ke. Another highlight of this competition was that entry for audience was by tickets – which of course was an appreciable effort at that time.

Momentum in the activities of Lucknow theatre resulted in the reorganization and reorientation among theatre artistes and groups. New theatre groups were

formed. A large number of new and fresh faces joined the main stream of theatre. While, Sanket theatre group was established in 1973 with the initiative of K.B. Chandra, Satya Nand Rao, Dr. B.N. Sharga, Raj Narain etc., "Meghdoot" was formed in the year 1974 with the initiative of Hari Mohan Sampson and Ranjit Kapur. Raj Bisaria, earlier busy producing English plays, also turned towards Hindi theatre in Lucknow with his group Theatre Arts Workshop – well known as "TAW". "Lakrees" another theatre group also came into being out of an enthusiastic cricket club of the city, which under the leadership of Shashank Bahuguna later became well known for its exclusive work on psycho-physical form in the theatre.

It was an important happening in the early 70s that graduates of National School Drama, New Delhi – only renowned school of Drama in the country, got attracted towards the rich possibilities on Lucknow Theatre and descended in the city, successfully directed some plays for local theatre groups to give Lucknow some memorable productions and then went on to become nationally/internationally acclaimed theatre personalities. Such, NSD products included the names of B.V. Karanth, Bansi Kaul, Ranjeet Kapur, Pankaj Kapur, Ratan Thiyam, Raghuvir Yadav, Shyama Jain, Bhanu Bharti, Ram Gopal Bajaj, Rajendra Gupta, Ravi Vasvani, Ajay Kartik, Manohar Singh –

Influence of National School of Drama on local theatre was becoming obvious during early to mid 70s as modern methodology, latest stage techniques, modern concepts for stage sets, meaningful use of hanging top lights and colour filters alongwith Dimmers controlling intensity to suit various moods & requirement, and realistic acting got introduced in the production of plays. Use of Levels and Blocks in stage setting and also symbolism in stage designing became familiar to stage directors of Lucknow. Lucknow theatre during this period of time got exposed to more creativity and innovations, and witnessed outstanding performances and productions.

First National School of Drama product to come to Lucknow was the famous B.V. Karanth. His first directorial venture in Lucknow was "Hayavadan" (Girish Karnad) and second was "Evam Indrajit" (Badai Sarkar – Hindi Translation by Prathiba Agarwal) – both for Darpan in 1972. Then came Vijay Tendulkar's Khamosh

Adalat Jari Hai(1973), Susheel Kumar Singh's Singhasan Khali Hai(1974) & Sarai Ki Malkin(1978) – all directed by Bansi Kaul, Andha Yug(Dr. Dharmvir Bharti) and Laxmi Narain Lal's Vyaktigat both directed by Ravi Vasvani, Children's plays Payalon Ka Rahasya by Shyama Jain in 1979. Other directors invited by Darpan were Ajay Kartik(Fendo aur Lis/Laharon Ki Wapsi/Janabe Ala), Arvind Desh Pandey(Rakhtbee), Alopi Verma(Burj), Balraj Pandit(Panchwan Sawar).

Meghdoot followed steps and invited N.S.D. products Ranjit Kapur to direct Ras Gandharv, Collage, Panchu Aur Mausi, Bichchu, Hoholika; Bhanu Barti to direct Tanbe Ke Keede, Raghuvar Yadav to direct Ghasi Ram Kotwal, Pankaj Kapur to direct Alberts Bridge, D.R. Ankur for staging stories, Ratan Thiyam to direct Ganesh Marka aur Chaar Shikhaen. Theatre Arts workshop opened its innings in Hindi Drama with the play Baaki Itihaas(Badal Sarkar) directed by Raj Bisaria and thereafter invited Ram Gopal Bajaj and Rajendra Gupta from N.S.D. to direct one act plays of Mohan Rakesh. Rajendra Gupta also did Andhon Ka Haathi(Sharad Joshi) for TAW. Also, Manohar Singh directed Guinee Pig for this group. Surekha Sikhari – a well known actress – also acted in one of the play of TAW alongwith some artistes of Lucknow. Raj Bisaria directed plays like Suno Janmojay, Garbo, Antigani, Sumati for TAW and later a play Hostel for another group of Lucknow and established himself as a prominent successful stage Director.

Sanket was staging plays mostly under the direction of K.B. Chandra. Other directors were from within its own fold. K.B. Chandra directed the first play of Sanket – Oh America written by D.P. Sinha followed by a number of famous Hindi plays namely – Satya Harishchandra, Dhruvswamini, Hameeda Bai Ki Kothi, Aakhri Sawal, Kase Hue Taar, Pahlia Raja, Athwan Sarg & Kans etc. K.B. Chandra has been well known for his apt and visually rich stage craft and therefore grandeur of his plays were worthseeing. On the other hand another group Lakrees, under the guidance of Shashank Bahuguna concentrated its activities with only psycho-physical theatre – a difficult task both for director as well as actors. But Lakrees made its presence felt in the city's theatre scene with the productions of Khadija Ka Ghera, Baki Itihaas, Tughlak, Dr. Fastas etc. Lakrees also invited richly experienced theatre stalwarts like Ratan Thiyam, Prabir Guha, Badal Sarkar, K.M. Pannikar, Vijay

Soni and introduced a new dimension of experimenting with psycho – physical theatre.

There was a group Apsara Arts International, said to be formed in early 1970s, which used to stage plays under the direction of Anand Chaturvedi and Idris Siddiqui and their shows were on the commercial basis and were publicised by public address system on rickshaw etc. Entry to their shows was by Tickets only. Popular plays were “Kagaz Ke Phool” and “Parchaiyan”.

Sensing the euphoria of theatre activities in the city at that time and also feeling the necessity to channelise this energy through academics and proper training, Raj Bisaria first initiated theatre-workshops in association with U.P. Sangeet Natak Academy in 1975 followed by formation of Bhartendu Natya Kendra to facilitate full time theatre training and studies. Raj Bisaria was appointed its Director and later in 1981 it was remodelled for 2-year Diploma Course and rechristened as Bhartendu Natya Academy – a state owned separate entity – retaining Raj Bisaria as its Director. Establishment of a Drama School in Lucknow became an asset for Lucknow when nationally & internationally reputed theatre persons started visiting the school as faculty members and a number of well produced & acclaimed plays were staged. Anupam Kher, now a famous film star and Devendra Raj Ankur, present Director of National School of Drama, began their career from this Bhartendu Natya Academy as Drama Teacher.

Another heartening event during the decade of 1970-80, was the onset of Children's Theatre in Lucknow. While, Kunwar Kalyan Singh was instrumental in organizing theatre activities especially for children at Bal Sangrahalay, Charbagh, U.P. Sangeet Natak Academy under the able guidance of Dr. Sharad Nagar also initiated theatre workshops for children first time in June '75 under the direction of Mumbai's Pragji Dosa. Next year in May '76 it conducted six week production oriented children theatre Camp under the direction of Shyama Jain when “Aadmi Se Bhale Janwar” was presented by children on conclusion of the Camp. UPSNA continued such children theatre groups further. Following the steps of UPSNA, some enthusiastic theatre lovers and artistes like Anand Bhardwaj, Bishan Kapoor, Kiran Raj Bisaria, Ishu Pandey, Jeet Jadhari etc. got together under motivation of Sharad Nagar and established in 1976, “Bal Rangmanch” for exclusive

development of personality and talent in children and to promote maximum participation of children in theatre. Theatre activities were held for children by Bal Rangmanch and Atul Tiwari, Amit Bhattacharya & Shyama Jain made their contribution. Such Children theatre workshops/camps enriched Lucknow theatre further and groomed children into theatre artistes.

Trained from Bhartendu Natya Kendra, some of the active theatre artistes flocked together in search(Khoj) of the work and formed a new theatre group KHOJ in the year 1978. These theatre artistes were PK. Roy Chowdhary, Hemendra Bhatia, Gopal Mishra, Jitendra Mittal, Saurabh Dube etc. and staged firstly the play Alibaba(direction Gopal Mishra), then followed by Mini Circus(direction Hemendra Bhatia), Niyam Aur Apvad(direction PK. Roy Chowdhary). After few more presentations like Poster, Ik Tare Ki Aankh, Nangi Awazein, Aaka, Miki Aur Memsahab, Solution-X and Karz etc., the group closed down some where after 1981. Jitendra Mittal of the group quickly established a new group Yayavar Natya Sansthan in 1981 itself. Most of the plays were directed by Jitendra Mittal himself, and others were directed by group's own Mohd. Hafeez and Calcutta's Prabir Guha. Its famous plays have been Chor Ke Ghar Ke Mor, Solution-X, Andher Nagri, Dhai Akshar Prem Ka, Bagia Bancha Ram Ki, Daswin Daur, Adab Arz Hai, Mantri Mandal, Chandragupt, Toba Tek Singh, Bejuban Biwi and Darar urf Turup Chaal. Jitendra Mittal also wrote a number of plays viz. Mantrimandal, Pyade etc. Another active member of Khoj, Gopal Mishra also established a new group in 1983 known as “Vision” to cultivate his potential and to satisfy his own interest and that of his colleagues. Gopal Mishra directed a number of plays for his Vision and for other groups. Some of the play directed by him are Darshanik Gadha, Ko Hanse Ko Rowe, Swapna Mrityu, Reshma, Rishte, Bojhil Lamhe Ke Such, Leena, Panse, Bali Ka Bakra, Dubhang. Some of these plays were written by him only. However speed of activities of Vision remained restricted. Srishti and Rang Yog etc. also came up as active theatre groups but had a short life.

Lucknow theatre was flourishing during 70-80, and towards later half, it prompted all the active local theatre groups viz. Meghdoot, Lakrees, Darpan, Sanket, TAW, Nakshatra, Khoj, Rangyog & Srishti to come together under the umbrella of “Theatre Forum” to

organize Drama festival of the plays produced by member groups. It gave Lucknowites a big treat of good plays. It was in year 1976, that District authorities alongwith Deptt. of Tourism started Lucknow Mahotsav on a grand scale with cultural programme as one of its major attraction. Lucknow Mahotsav also gave its stage to local theatre groups to perform its plays – and the same added to gear-up city's theatre life. Due to some reasons, organizers of Lucknow Mahotsav turned towards commercially successful and popular Music & Dance Programmes which in turn put the local theatre in back seat, and subsequently it became absent in Lucknow Mahotsav.

By the time the decade of 1980-90 commenced, Lucknow Theatre was firm on the saddle with propersons and rich status. The period was full of talented theatre persons/artistes and active Drama groups. With events of Drama Festivals organised by different agencies and regular presentations of plays during the period, it appeared to be fascinating bonanza for theatre lovers.

By this time, Darpan's Urmil Kumar Thapliyal, a good actor himself, had already established himself as an accomplished stage director. Though, almost all the plays directed by him won applause and proved his creative acumen, Agha Hashra Kashmiri's Yahudi Ki Ladki and his own script "Harishchanner Ki Ladai" got him national prominence. His expertise in Nautanki style brought Nagri Nautanki to Lucknow theatre. P.D. Verma of Darpan, a good actor, also surfaced as director. Out of the emerging young Directors of that time, Surya Mohan Kulsreshtha shot into prominence with his own theatre colleague Rakesh's play Ramlila. His further stage ventures proved his creative capabilities and aptitude for the direction. Atamjeet Singh, Puneet Asthana, Raja Awasthi, Ashwani Makkhan also came-up as promising stage directors, Sangam Bahuguna also a good actor made niche for himself in the direction for comedy plays. Other young directors of the period deserving mention are Gopal Mishra, P.K. Roy Chowdhary and Jitendra Mittal.

Darpan, Sanket, Meghdoot, TAW, B.N.A. continued producing good Hindi plays enriching Lucknow Theatre and satisfying the theatre lovers, and some of the famous plays of these groups put-up during that period are Andha Yug, Surya Ki Antim Kiran Se Surya Ki Pahlil Kiran Tak, Hayvadan, Panchi Ja Panchi

Aa, Laila Majnu, Parajit Nayak, Harishchanner Ki Ladai, Thank You Mr. Glad, Ramlila, Dularibai, Charan Das Chor, Mitti Ki Gadi, Sainya Bhaye Kotwal, Nautanki Laila Majnu, Mother, Ala Afsar(Rangyog), Baap Re Baap, Hamida Bai Ki Kothi, Jati Hi Pucho Sadhu Ki, Miss Alooowalia.

Encouraged by growing activities on the horizon of Lucknow theatre, State Govt. employees, too, organized themselves to float a cultural organization named as U.P. Hindi Natya Sansthan and actively engaged itself in staging shows of plays like Charu Mitra, Paagal, Khel Nahin Natak, Achut under the direction of Shyam Krishna and Adhe Adhure under direction of Chandan Gopal, during 1980-84. Sanskar Bharti also commenced its journey in Lucknow in 1981 and staged some good plays namely : Praja Hi Rahne Do, Yaksh Prashna, Andher Nagri, Neel Darpan, Matsya Gandha. IPTA was also renergised in Lucknow, somewhere in 1984 and continued their Drama activities with full vigour. It staged plays under the direction of Veda Rakesh, Jugal Kishore, Pradeep Ghosh, Surya Mohan Kulsreshtha. O.P. Awasthi. The plays were : Bakri, Taimoor, Ramlila, Kalptaru Ki Chaya, Ala Afsar, Inspector Mata Din Chand par, Troy Ki Aurtein, Holi, Yug Purush, Kissa Ajnabi Lash Ka etc.

During second half of 80s, Daya Prakash Sinha an IAS and a renowned theatre personality became Director, Culture Affairs, U.P. Govt. and gave Lucknowites Rai Uma Nath Bali Auditorium complex at Kaiserbagh which was a boon for Lucknow theatre and subsequently became very popular for Drama. During his regime, Deptt. of Culture organized a number of Drama Festivals with national level productions in Hindi as well as in other languages from all over the country. Local theatre lovers as well artistes witnessed real good Drama in superb productions which included Shyama Nand Jalan's, Hazar Chauari Ki Maa & Adhe Adhure, and Usha Ganguly's Katha, Holi & Court Martial etc. in these Drama Festivals and got to know the histrionics of the two great directors.

From the years immediately after the independence of India, theatre in Lucknow had gained momentum. it reached crescendo by 1970 and it was superb and par excellence during 70s & 80s. It was during the period of 70s & 80s when Lucknow theatre got exposed to latest and modern stage techniques, realistic style of acting, meaningful & imaginative stage setting & light effects.

importance of training in theatre. It was the period when Lucknow theatre saw superb productions, emergence of good directors and productions getting immense popularity. There were experiments and innovation too. Lucknow theatre was rich.

However, as the years passed by and 1990 was approaching, theatre activities in the city started declining. The decline was attributed to emergence of modern cinema, television and VCR. For people, entertainment would generally mean good commercial cinema and interesting Doordarshan plays. Revolution in entertainment media of Television, a number of popular T.V. programmes & serials like Ramayan, Hamlog, Buniyaad, Mahabharat, Quiz, Chitrahah etc. and film shows possible through VCR, invaded our homes. The availability of option to select TV channel of own choice & liking, pushed people to stay back into their homes and places. The people turned their back to stage/theatre and it became a necessity for the stage plays to be presented on select days at select time ascertaining that there was no popular TV serial on air at that time just to ensure considerable audience. Further, TV channels provided ample opportunities and avenues for better money alongwith glamour causing exodus of stage artistes to this media of entertainment in pursuit of money, name and fame. Theatre activities suffered. Some theatre groups shut down their doors and some slowed down their activities, and list of such theatre groups included the names of leading ones of that time viz. Sanket, Meghdoot, Khoj, Lakrees, Karvan, Nakshatra etc. While some theatre groups closed down, new groups were formed. Some of the new groups were dedicated and did wonderful job, but many of them were patronised by over ambitious youngsters trying to make the stage a stepping stone for entry into TV and films. It further deteriorated the scenario of the theatre.

Beginning of 90s saw emergence of new groups namely Manchkriti, Bhartiyaam, NIPA Rangmandali, Yayavar Rangmandal, which meticulously filled-in the gaps created by closing down or slowing-down of earlier major groups. However, inspite of these new but active groups a dull theatre continued till the end of 90s. Keeping the spirit of "the show must go on", some of the theatre groups kept the flame on. Yayavar's Script Bank with cyclostyled copies of number of plays was installed in the lobby of Ravindralay catering to the script requirement of theatre groups. Unfortunately, a few year

back, the same has been removed by the management of Ravindralaya. Lalit Pokharia, a young and active theatre personality was very competently writing scripts and staging the same for different groups. Good theatre and good stage productions did happen in between. Manchkriti a theatre group of veteran theatre persons established in 1990, besides their regular stage productions, started an annual festival of humorous plays in the year 1991 which has since become a very popular annual event. With stage productions of plays like Suraj Kahan Se Uga Hai, Khatar Patar Ki Takkar. Do Take Ki Film, Are Shareef Log, Miss Alooowalia, Thank You Mr. Glad, Kahiye Huzoor Kaisae Rahee, Katha Ek Kans Ki, Prahlad(Garhwali), Shaheedon Nein Lau Jagai Jo, Damad Ek Khoj & Nagmandal, Manchkriti found its place among the leading groups of Lucknow theatre. Manchkriti also took initiative and organized a series of Seminars on subjects relevant to contemporary theatre which brought forth thoughts of number of eminent theatre personalities, namely Habib Tanvir, Bhanu Bharti, M.K. Raina, Lakshmi Kant Verma, Dr. Bhanu Shanker Mehta, Daya Prakash Sinha, Dr. Urmil Kr. Thapliyal, Devendra Raj Ankur, Usha Ganguli etc. alongwith local luminaries like Sushil Kumar Singh, Rakesh, Surya Mohan Kulshreshtha and Lalit Pokharia. Despite a dull theatre, the play Bhagwat Ajjukiyam of Surya Mohan Kulshreshtha visited abroad to participate in International level theatre festival/events. It was during this period that Puneet Asthana, Lalit Pokharia, Sangam Bahuguna, Veda Rakesh, Sandhya Rastogi, Chitra Mohan, Jugal Kishore, Raja Awasthi and Pradeep Ghosh emerged as promising stage directors. Darpan, only theatre group to survive and sustain all through its inception since 1971 with active contribution to Lucknow theatre staged a number of plays during 90s viz. Shanivar Ravivar, Upar Ki Manzil Khali Hai, Takia, Ram Rachi Rakha, Ek Kunwara Shadi Shuda, Khubsoorat Bahu, Kanupriya, Kamla, Tajmahal Ka Tender, Teesra Machan, Octopus to complete about 100 plays and about 900 shows by the time it completed its Tridecade in 2001. While TAW, came out with productions of Raz and Pita, NIPA Rangmandali gave, Vasani-Jeernani, Har Chand Vida Hai, Exit the King, Begum Aur Baghi. Rangyatra-a simple magazine on theatre was brought out during early 90s but later this magazine ceased to become a full fledged Drama group with the same name, Rangyatra. Kadambri did the shows mainly during Hasya

Natya Samaroh of Manchkriti. Another group came out with the name of Prayas staging Lagai Bujhai and Sankraman. Theatre group Yayavar alongwith its Rang Mandal also staged during 90s a number of plays viz. Adab Arz Hai, Bagia Bancha Ram Ki, Toba Tek Sligh, Kandoos, Hamara Koi Naam Nahin, Gardabh Raag, Salim Sherwani Ki Shadi, Mritya Paridhi Aur Kendra, Ek Bayan etc., while IPTA brought to stage plays like Kalptaru Ki Chaya, Inspector Mata Din Chand Par, Safar, Ala Afsar, Khoja Nasruddin, Door Desh Ki Katha and it also produced a number of plays and a series of theatre workshops. Annual PC. Ghosh Memorial Bangla Drama Festival has been doing rounds regularly every year at Bengali Club where Bangla Plays from all over the country participate. Most of the audience of this festival is obviously Bengali. Unfortunately, all this good happening in Lucknow theatre could not improve upon the prevailing dullness, and all the activities lacked energy. Euphoria of earlier period was very obviously absent.

By the time when a new millenium was setting in, Tele media was flooded with a number of entertainment channels, news channels and information channels. A large number of popular Soaps were on the air. FM channels have also hit the radio. A number of local theatre artists shifted their base to Mumbai & Delhi for rich prospects of glamour, fame and name and are now busy with different popular serials. It was the time when Lucknow theatre felt acute shortage of stage artistes – both male & female.

May be, because of the fast-track around-the-clock availability of entertainment on the television, the people, who love theatre, got saturated and started returning to theatre. Sudden drop of theatre audience in the new millenium has been quite obviously felt and this encouraged theatre groups to shelve dullness, regain energy and revive their activities with full spirit and vigour. During the last few years, some good plays have been produced and there have been a number of theatre workshops. Government agencies like BNA, UPSNA and NSD etc. as well as local theatre groups have been instrumental in arranging such theatre workshops. Extension programme of National School of Drama have

also benefited Lucknow theatre in arranging theatre workshops by experienced theatre personalities. Yayavar Rangmandal first held a Children Theatre Camp in 1993 and since then it has become regular annual event by the name of Ullas. Besides it, other theatre groups/theatre artistes too have been organizing theatre workshops during summer, and such theatre artistes are Atamjeet Singh, Piyush Pandey, Rama Arun, Mridula Bhardwaj, Chitra Mohan, Miraz Alam, Jagmohan Rawat etc. These workshops have been successful in motivating youngsters as well as theatre lovers and grooming them into theatre artists which in-turn has benefitted the local theatre with the availability of young theatre artistes. It is also worthwhile to mention that some of the theatre groups like Manchkriti, IPTA, Yayavar & NIPA Rang Mandli have been staging their productions with entry by tickets only to develop an healthy and disciplined tradition which will definitely help in the development of a good theatre. Recently, Yayavar Rang Mandal have come up with the presentations of their plays (Century Buddha i.e. Bagia Banche Ram Ki) purely with commercial objectives. Participation of stage productions of Lucknow theatre groups like Manchkriti, NIPA Rang Mandli, Darpan and Rang Yatra alongwith Bhartendu Natya Academy in annual event of prestigious Bharat Rang Mahotsav of National School of Drama during last 3-4 years and return of Natya Samaroh mainly of Lucknow plays in Lucknow Mahotsav since 2002 also speak of noteworthy revival of Lucknow theatre.

Lucknow theatre has seen many ups and down. However, looking at the present scenario with a number of theatre workshops now being regularly held producing new talents, Yayavar Rang Mandal starting commercial theatre, Manchkriti's annual event of humorous plays running into 14th year and also Manchkriti holding second series of theatre Seminar, Darpan and IPTA marching ahead with new productions, alongwith a number of other new/old theatre groups, people coming back to witness theatre in large number, Lucknow Theatre appears to regain its energy and activities in quantity & quality both and also its glorious and rich image too.



