

Schedule
International Workshop (August 18th & 19th 2006)

“Nature in the Raj: Colonial Environments and Indigenous Knowledge”

[Organised by the Centre for studies in Science Policy (CSSP, Jawaharlal Nehru University), Centre for World Environmental History (CWEH, Sussex University) and Nehru Memorial Museum and Library (NMML, New Delhi)]

ABSTRACTS

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Forest settlements in the Raj:
Persistent diversity in forest property regimes in Himachal Pradesh

The forest territorial landscape of India is shaped by colossal settlement efforts that were undertaken by the colonial forest department in later half of the nineteenth century. In principle this was a systematic, comprehensive and rational process designed to make legible the complex pattern of property relations that existed over forests. However, in practice, forest settlements in colonial India were often a process of struggle and interaction between diverse economic, political and ideological forces that resulted in heterogeneous outcomes, only sometimes intended. Forest settlements in a small region of the present state of Himachal Pradesh reflect this struggle between the ideology of homogeneity and legibility on one hand and the persistent and thriving diversity of property regimes on the other. Actual settlement records reflect the perspectives and differences of individual settlement officers, influence of local power centers, different political incentives, and particular local political-economic concerns at specific points of time when the settlements were undertaken. This paper discusses the patchwork of diverse property regimes that were created in Himachal Pradesh's forests by divergent interests that defied any attempts at homogeneity.

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COLONIALISM AND ENVIRONMENT: COMMERCIALISATION OF FORESTS AND DECLINE OF TRIBALS IN MADRAS PRESIDENCY, 1882-1947

This paper attempts to analyse colonial forest policy and its impacts on the environment and tribals in the Madras Presidency, during the post- Forest Act period (1882-1947). It argues that the post-Forest Act colonial regime actively encouraged the commercialisation of forest resources while simultaneously imposing several restrictions on tribal populations and other forest users. Further, it argues that the conservation initiatives made by the government was essentially intended to curtail the access of the tribals and other forest users so that the colonial regime could extract these resources for commercial purposes. In short, post-Forest Act colonial forest policies that were allegedly intended to conserve the forests ended up enabling the colonial government to systematically extract forest resources; resulting in the emaciation of the tribal populace and the transformation of the forest environment in the Madras Presidency.

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Mapping The Use And Abuse Of Nature In The Territory Of The Princely States Of South Gujarat: A Study In Their Flora –Fauna Potentialities And The Process Of Deforestation And Conservation c. 1750- c. 1960

Princely States have attracted considerable scholarly attention on issues related to sovereignty and integration. However, even a cursory survey of literature on the princely states will suggest that environmental history is less explored. The post colonial state of Gujarat, in fact, was carved out of a number of princely states. Large states such as the Gaekwad's of Baroda and the Dang sub-region has received attention from scholars like Ian Copland and Ajay Sakaria but the lesser princely states do not find much space either in their or other scholarly writings.

Our travel in Southern Gujarat, particularly in those sub-regions which were under the political control of rulers other than that of the Gaekwad's during the nineteenth century, suggests immense research possibilities for documenting the intertwined social and environmental legacies of the region. The south of Gujarat had 14 states in the Dang sub-region and five states namely Surgana, Sachin, Bansda, Dharampur and Rajpipla other than the British and Gaekwad's Navsari *prant*. Bansda

today has a National Park, a Botanical Garden in its surroundings at Waghai and Shulpaneshwar and a Sanctuary at Dedia Pada. The region has been witness to several processes of deforestation on one hand while on the other a strong reaction for conservation had also set in. Our explorations will be based on archival material and supplemented with interviews from senior informants in the Bansda, Rajpipla and Dang territory.

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NATURAL HAZARD AND THE BRAHMAPUTRA RIVER BASIN: STATE
DESIGN, FLOODS AND PEOPLE'S PERCEPTIONS IN MAJULI ISLAND.

This paper tries to analyse policy discourses on 'flood management' in *Majuli* — one of the largest river islands that is prone to flood and bank erosion. The public policy on flood mitigation in the country in general and in the Brahmaputra Basin in particular has been overwhelmingly motivated by technocratic interventions such as embankments and large dams. In recent years, this structural model has been criticized for causing adverse impacts on river regimes and the flood plains.

While the proponents of the techno-centric approach see the populations occupying the flood plain as being subject to natural hazards they tend to ignore the technological risk's and hazards that have been brought on by the embankments. Thus, these floods are perceived as being inherent natural hazards that can only be controlled by regulating the flow regime of the river through engineering measures. A strong emerging counter argument that is echoed today by *neo-indigenistas* is the claim for the relevance of traditional ecological knowledge or Indigenous Knowledge (IK) of the local people. This discourse has sought to ground itself in knowledges involving 'adaptive management' that has been oriented towards creating social 'resilience' in the face of the annual flooding and erosion. IK, moreover, is based on community participation and advocates the replacement of state led interventions that tend to privilege institutional or big science and technical expertise. Thus, the emphasis in IK is for democratic and participatory risk assessment based on community perceptions and choices.

For IK advocates, moreover, the complexities brought on by the floods are not revealed merely by the limitations of cost-benefit analysis nor by the mapping of hazards, through sophisticated cartographic implements such as G.I.S (Geographical Information System) or Remote Sensing; instead it is argued that these tools are intricately embedded in power structures and development goals of the state. In contrast what is suggested is for a "non-technical" and "non-scientific" understanding of flood hazard that draws from local little traditions, folklore and aphorisms. This paper will explore the credibility of this seemingly sharp divide between big science and little traditions.

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COLONIAL NATURALISTS, INDEPENDENT INDIANS AND THE EXOTIC
WILDLIFE – A PHOTOGRAPHER'S VIEW

This visual presentation will largely argue that Colonial Naturalist writings on Indian wildlife had a strong element of exoticism. This trend, I will hope to show, continues to resonant and is driven in contemporary times by the western media (National Geographic and the Discovery Channel etc). In part, such visual exoticism, I will hope to show is also driven by the emergence of several "pro environment" groups in young urban India. In effect, this urban grouping in their quest for the 'exotic' in wildlife, chooses to remain oblivious to various types of social, political and environmental complexities on the ground. Within wildlife photography, photographs that have an "exotic" element are appreciated more than photographs that reveal the less romantic aspects element of 'wild India'.

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Photography and Environmental History: Documenting the Memory of Tehri.

This visual presentation is based on a series of photographs taken between 1988 and 2006 on the submergence of Tehri town and its surrounding environs (Uttarakhand, India) by the Tehri dam. My attempt will be to explore the idea of using contemporary photography as a format for environmental documentation and the shaping of memory for environmental activism. In other words, the meticulous and careful compilation of environmental change through photography offers not only a credible means of recording landscapes for posterity but critically as well for shaping 'memory' as a volatile element to environmental politics.

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Water, State and Society in pre-colonial Rajasthan

Despite the fact that water is central to making agriculture possible, the political and social relations of water use and abuse in Indian society have only recently been scrutinised by historians. The pre-colonial state in India is widely viewed as being passive in this regard; exercising only a limited set of interventions for the manipulation or control of water in rural society. The belief is that the actual practices of water management was largely run by communities and their conventions and norms. In contrast, this paper argues that the pre-colonial state in Rajasthan was an active agent in creating and enabling the hydraulic conditions for agrarian production; especially with regard to responding to the complexities of drought and environmental distress. Thus this paper questions the dominant assumption(s) about the 'relative apathy' of the pre-colonial state towards 'environmental uncertainty' in agricultural production.

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Colonial Intervention in Flood Control in North Bihar, 1850-1954

The British believed that the rivers of north Bihar had to be controlled, and that it had to be done by the zamindars as the British had fixed its rent in perpetuity. They thus encouraged the zamindars to control the rivers in an indirect way. By the middle of the nineteenth century the administrators realized the dangers of obstructing the free flow of rivers and came up with various policies : (a) force the zamindars to pay for any works that the administrators thought necessary and (b) control the haphazard and competitive embankment construction by taking over the maintenance of existing embankments (only on condition that the zamindars paid for it). These policies had little effect. Along with the railways and roads (which were extended in this region), the haphazard and 'unscientific' manner in which many zamindari embankments were built led to further deterioration of the flood situation. By the 1930s there was a consensus among the irrigation engineers that controlling the rivers in the region was a bad policy and that embankments should be removed where possible. But considerable interests had developed along the 'protected areas' to allow any positive change to happen. The only option left to the administrator was to build dams which were being touted by the colonial government as the solution for not only floods but also an avenue to employ the

war veterans. The developments immediately after independence led to the shelving of the dam project, but embankments made a comeback in to the scene in a big way. Colonialism may not have directly helped in the project of controlling the rivers, but the (bureaucratic) structures it had left behind, the ideas which it encouraged and propagated (private property in land, controlling nature, etc) and the forces that it had unleashed in the countryside, have not allowed a rethink in the flood policy even in the post-colonial period.

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Indira Gandhi Unrehearsed: Statecraft, Ideology and the Environment, 1966-84

Over two decades after her demise in 1984, Indira Gandhi's political and intellectual legacies are a matter of controversy amongst people in India and the world at large. Though every biographer has been aware of her environmental sensibilities and larger legacy of proactive policies neither the evolution of her thought nor her record have been subject of critical scrutiny. Her letters to her father Jawaharalal Nehru from 1922 till 1964, and her own speeches as Prime Minister constitute two very significant sets of sources. The picture that emerges in her correspondence with a range of conservationists, officials and politicians is a complex one. She shared and amplified many prejudices of her time; most notably the emphasis on centralised statist remedies to environmental issues. Yet, the level and degree of sensitivity to issues of nature, science and long term impacts of development still stand out from the vantage point of the early 21st century. In many ways, the environmental record needs to be viewed as part of her larger political legacy. This paper is an attempt to begin that task.

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Rights over Nature: Coal-mining in Eastern Assam, 1840-1914

Coal was a commodity brought in demand in Assam by colonialism and its concomitant economic order. Crucial for running the machinations of industrialism, it was first introduced into the Assam valley by the needs of the steamers running on its rivers. The growing demand for it was to be met by local production, which necessitated the installation of a new regime of private property over the coal tracts. Much of these tracts were 'discovered' by Company surveyors and geologists entrusted to explore for natural resources in the region. The initial ad-hoc procurement process gave way to the establishment of regularised working of mines, with permanent proprietary rights over them. This was at the expense of the indigenous peasantry and the coercive dispossession of them from their land with realignment of territorial boundaries in favour of commercial coal producers. By the beginning of the 20th century it came to be regarded as the most important mineral produce

of the province. The labour process involved too underwent a great change as the coal industry entrenched firmly itself in the region.

By tracing the history of coal and subsequently of petroleum exploration in the province of Assam, the paper seeks to study the political economy of imperialism and the character of new social relations forced upon by it (assumed here is that the relation of a given society with Nature is also 'social', which in essence reflects the nature of existent production relations). This is therefore an enquiry also into the ways the colonial state and finance capital came together to establish an economy based on extraction and exploitation: both of man and of Nature. Cloaked in the rhetoric of 'improvement' and 'progress', sciences in the colony mapped Nature as a potential resource to be used for furthering accumulation. The occupation and ownership of these 'profitable' resources –coal in this case- was achieved through the application of military might, aimed against the recalcitrant original inhabitants who had little knowledge or use of such 'resources'.

The harnessing of Nature for commercial production by giving its elements the freely exchangeable commodity form was to accentuate the process of industrialisation. But in doing so, the colonial structures of rule were to be firmly put in place. But the establishment of this new industrial regime was fraught with contradictions and moments of crisis. Though mining was under expansion in the second half of the nineteenth century with indentured captive labour employed in the remote coalfields of Assam -which soon acquired the stature of an important industry- it could not shorn itself from the violent past it was to carry forward to its future.

The role of modern science and that of the state-scientists -both military and civil- in bringing in the 'Nature' of the colony to the fold of imperial exploits, and thereby to the worldwide market economy, was crucial. Associated with it is the alliance of state power with the power of scientific knowledge and its application to feed global industries. Whether the relation with Nature under feudalism subsequently went through any transformation under its alignment with imperialism, is another area of study to be explored in this paper.

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Nature in discourses of deforestation and conservation

The debate on the colonial ecological encounter needs to go beyond impacts studies. There is need to examine these studies and also find questions that can free the discussion from its colonial trappings. It worth examining the extent to which colonial frames have informed these studies. This however requires a discussion on what constitutes the colonial frame from the standpoint of conservation. Further in the discussions on the subject the term conversation is loosely defined-its meaning is restricted to protection. This is an expression of the colonial framework. My paper is looks at these questions from the standpoint of ethnography of the forest.

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THE SUNDARBANS, BADAMIYAN, HISTORY, NATURE AND LANDSCAPE

...INTERPOSED BETWEEN THE SEA AND THE PLAINS OF BENGAL LIES AN IMMENSE ARCHIPELAGO OF ISLANDS. AN ARCHIPELAGO STRETCHING FOR ALMOST THREE HUNDRED KILOMETERS FROM THE HOOGLY RIVER IN WEST BENGAL TO THE SHORES OF MEGHNA IN BANGLADESH.....THERE ARE NO BORDERS HERE TO DIVIDE FRESH WATER FROM SALT, RIVER FROM SEA. THE TIDES REACH AS FAR AS THREE HUNDRED KILOMETERS INLAND AND EVERY DAY THOUSANDS OF ACRES OF FOREST DISAPPEAR UNDERWATER ONLY TO REEMERGE HOURS LATER.....

THE TIDE COUNTRY'S FAITH IS SOMETHING LIKE ONE OF ITS GREAT MOHANAS, A MEETING NOT JUST OF MANY RIVERS, BUT A CIRCULAR ROUNDABOUT PEOPLE CAN USE TO PASS IN MANY DIRECTIONS – FROM COUNTRY TO COUNTRY AND EVEN BETWEEN FAITHS AND RELIGIONS

AMITAV GHOSH , *THE HUNGRY TIDE*, DELHI, 2004,

The present paper attempts to ascertain the standing of the Sundarbans in colonial and post-colonial understanding of the Indian natural world and raises the question whether it was somewhat different compared to other protected areas of South Asia. It raises the question how a local space transformed into a global space and became central to the debate on conservation under the influence of capitalism, science and politics. The article is divided into five sections. Section one gives a brief history of the Sundarbans. The second section touches upon some of the earliest European encounters with the Sundarbans and shows how the initial scratches of Sundarban's natural world on the European mind left a rather pale and grim impression compared to the rest of the tropics. The third section narrates the story of the emergence of the Sundarbans as a revenue yielding reserved forest under colonial rule. The fourth section brings out how the British and the tiger became locked in a conflict for the command of the area and how the job of combating the tiger or the *badamiyan*¹ was left in the hands of the indigenous local *shikaris*. In post-colonial India the Sundarbans turned into a local theatre of a universal global campaign of onservation under the thrust of capitalism, science and politics. The final section of the paper deals with this.

¹ The indigenous people of the Sundarbans do not utter the word *bagh* (the Bengali word for tiger) when they enter the forest to gather forest products, but they prefer to call it *badamiyan* (senior headman). The crocodile is the *chotamiyan* (junior headman). They would also use the words like *Bada Harin* (big deer), *Bada Sheyal* (big fox), *Kabuliwala* etc instead of *bagh*, Sibshankar Mitra, *Sundarbaner Arjan Sardar*, Kolkata, 1991(first published in 1955)

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Beyond the Boundaries of Empire: Nathaniel Wallich (1786-1854) and the Transmission of Botanical Knowledge to Europe

The Danish botanist, Nathaniel Wallich was employed by the East India Company after the capture by the British of the Danish factory at Serampore, near Calcutta, in 1808. Shortly afterwards he was appointed an assistant to William Roxburgh, Superintendent of the Calcutta Botanical Garden, and later was to become superintendent himself. His work in this capacity is already relatively well known but in this paper I will examine in more detail his informal correspondence networks with scholars in Europe. In other words, the paper looks beyond links between India and Britain, at a wider fraternity of botanists who vicariously participated in the work of Wallich and other botanists in the colonies.

The paper seeks to answer a number of questions:

1. How significant was botanical knowledge gained in the colonies to the work of naturalists in Europe, both professional and amateur?
2. By which means was this knowledge acquired?
3. To what purpose was it disseminated?
4. What status was accorded to botanists who worked in the colonies?

Finally, in answering these questions, I suggest some ways in which we might fruitfully re-think – or at least – enlarge, our notions of ‘colonial science’.