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Environmental Histories of South Asia: A Review Essay

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'Would you tell me please which way I ought to walk from here?'
'That depends a good deal on where you want to get to', said the Cat.
(Lewis Carroll: *Alice's Adventures in Wonderland*)

I.

Ecological histories of South Asia are going through a growth phase. Within a few years of the first ecologically informed study of a peasant movement, there has been a welter of fresh monographs.¹ From an initial focus on forests and irrigation, the agenda is also broadening out to include a range of sectors, from small dam systems to urban air pollution, from changing attitudes to fauna to histories of science.² Yet, the unifying theme largely remains the nature and significance of the colonial experience.³ The only overview of the processes of change, *This Fissured Land*, is an ambitious attempt to span centuries and subregions to map the changing patterns of prudence and profligacy in resource use.⁴ Two broad themes taken up in the literature will be the focus of this essay: how far colonialism was an ecological watershed, and how producers responded to new pressures. The third issue is of what we can or should learn (or unlearn) from the colonial experience. Such a select reading of themes still omits a large corpus of work, but it can help focus attention on interpretive problems that may well be of wider interest.

It may be useful to identify the defining features of the South Asian ecological experience in the British era. Lenin once wrote that Marx's thought had three components: German philosophy, French socialism and British political economy. Perhaps it would be no exaggeration to say that imperial land management in the sub-continent had three dimensions: state forestry, modern irrigation systems and the campaign to wipe out 'vermin'.⁵ These distinct but inter-connected projects were also specific to South Asia in a variety of ways. Thus, state forestry was never quite as marked a feature of the British experience in southern or eastern Africa where stock control and watershed management

were much more prominent.⁶ The canal networks in northern and southern India were among the most ambitious ventures of their time and influenced the creation of modern irrigation systems in the United States.⁷ Conversely, the preservation of wildlife never acquired, at least in colonial times, the centrality that it had in the United States or in southern Africa. This triad of government forestry, canal irrigation and carnivore control has left a deep and abiding mark on the ecological landscape of the sub-continent.⁸ Despite enormous variations in terms of revenue arrangements and agro-ecologies in different regions, they were critical components of colonial, and in many ways of postcolonial policy.

In fact, it is public concern about the adverse aspects of this legacy that has contributed to fresh research. The new wave of work does have roots in older traditions, especially those of fieldwork in anthropology and agrarian studies.⁹ But the major driving force has come from outside the discipline. In common with popular history and gender history, ecologically informed social history too has had its linkages with social movements. The focus on the fight for the forest in the past mirrors present day concerns about the contest between commercial forestry and the livelihood and rights of the rural poor. Similarly, the interest in exploring alternative techniques of irrigation reflects anxieties about the adverse socio-ecological impact of large dams.¹⁰ The interest in 'traditional' technologies and in discovering alternatives to state control and capitalist market economies is evident in much of the research. It comes as no surprise that colonialism is often seen as a crucial divide.

The pioneers of environmental history have tended to set up an opposition between the equilibrium between people and nature before colonialism and the disharmony that arose as a result of British intrusion. Previous rulers had rarely intervened in woods and pastures, mainly to assert monopolies over valuable animals like elephants. Gadgil and Guha also argue that caste and custom mainly regulated the use of natural resources.¹¹ Such an approach sharply focuses on the consequences of imperial policy for rural producers and also reverses any notion of a long period of decline before the coming of Pax Britannica. Despite its merits, this paradigm does not take adequate account of the relations between pre-colonial regimes and the hinterland. This leads to the assumption of a stasis or a 'long equilibrium' in the pre-colonial period. While the idea of a colonial ecological watershed remains valid, it needs to be problematised much more clearly.

The environmental implications of the changes on the agrarian frontier in the medieval era demand more attention than they normally receive. There was a contrast between the British and their predecessors but to bring out the nature of the disjuncture, it is necessary to avoid too narrow a reading of the environmental impact of pre-colonial society. For instance, the establishment of human settlements in the passes of Dohad and Rajpipla by 1761 cut off the elephants in the Gujarat forests from those in central India.¹² What is crucial is not the mere extension of town and farm at the expense of wild animal habitat. After all it

would be possible to argue that, despite such changes, the overall scene was one of harmony. But this would be missing the significance of such changes. The process of the fragmentation of the habitat of large mammals, so marked in the nineteenth and twentieth centuries had antecedents. Of course, the extent of the break-up of habitats was not as pronounced in the Mughal and post-Mughal era as in the colonial period.

Successive rulers tried to extend settled, cultivated arable into fresh lands to increase revenue and strengthen their kingdoms. In the 17th century, the Mughal empire bore down heavily on the nomadic tribes in the hilly and the deltaic regions of Sind. A mix of military might, religious proselytisation and revenue remissions were employed to try and induce sedentary settlement among the nomads.¹³ The clearing of fresh lands for cultivation was also given a fillip by religious institutions like the *math* (seminary) of Bodh Gaya, established in 1590.¹⁴ The influx of caste Hindu colonists into the middle Indian highlands and valleys was a staggered process, encouraged by land holders and rulers eager to reap more revenue. The tug of war between the agrarian heartlands and the drier or the forested hinterland was not specific to colonial rulers. In the nineteenth century, Ranjit Singh's Sikh state tried to settle the nomadic Gujjars and Bhattis in the Punjab.¹⁵ Even though states did not normally promote direct management of uncultivated lands as in Imperial China or regulate forest use as in Japan, disincentives and incentives did retard or speed up the process of agrarian extension.¹⁶ Despite reciprocal ties between different groups, it would be an error to ignore the conflicts of interest. In 1761, the Peshwa recognising the rights of Ramachander Bascottah commended the latter for his work in the Nimar region for repelling attacks by Bhil tribals: where, 'Jungles having overgrown the once cultivated fields, I therefore ordered you to restore these mahals to cultivation and inhabitants'.¹⁷ The classical opposition between settled agrarian lands with 'family and caste' and the wastes, 'the home of the warrior and war band' was striking.¹⁸

Such relations were not solely antagonistic. They have to be viewed in the wider context of the links between states and nomadic and tribal groups. Despite the interest in extending cultivation and the reach of pioneer peasants, rulers still relied on other producers in a variety of ways. The Banjaras with their pack bullocks provided vital support to the Mughal army in campaigns by bringing grain and supplies. They also provided credit and linked remote areas with the market with trains of bullocks.¹⁹ Thus, the Sultan of Mysore, Tipu's, drive to settle the Bedas, who were skilled archers, was accompanied by their enrolment in his armies.²⁰ Tribals were a crucial component of the military apparatus due to their specific skills and deep knowledge of the local terrain and resources.²¹ The very structure of the polity was such that dispersed forms of production could continue to play a role. There was no functional harmony in the process, and conflicts did occur. The dispersal of habitations over a wider geographical area had a major ecological spin-off. Land was more abundant than labour and

the extent of pasture and jungle made it easier to procure good fodder. This has been demonstrated for the Mughal period but the proposition would hold true in large parts of the sub-continent till well into the modern era.²²

The British were to be set apart from Indian rulers, tribal leaders and land holders by a very different notion of political power. Kings and rent receivers had looser, more flexible political arrangements and revenue systems, especially in hilly and dry regions.²³ This set of changes in the character of the polity was to be of prime importance because of its consequences for the ecology. Skaria shows how such areas had been key constituent elements in the pre-colonial polity, but in a loose and fluid way. Now, 'With the end of the tribal raids, the inner frontier was closed'.²⁴ This was only the prelude to more intrusive policies in mountainous and forested regions. To press ahead, the old order was conducive to more dispersed patterns of production and settlement: slash and burn farming, stock keeping, hunting, nomadic trade and trapping. There was an intimate connection between the more disaggregated forms of political power and the heterogeneity of human ecology. Sedentary settlement was now more strongly favoured than under previous regimes. These attempts to impose or promote a homogenous style of agrarian production vis-à-vis nomadic and itinerant groups were sustained with far more vigour than in the case of previous rulers. The Bhils of Khandesh and the Bhattis of the Delhi region became targets for sedentary settlement in the 1820s.²⁵ These were merely the precedents for much more extensive attempts later in the century. Unlike various South Asian rulers, the British were not dependent on tribal or pastoral peoples for services. They dispensed with the Banjara transporters and set up their own commissariat.²⁶

But the general attitude had far-reaching effects. The new rulers had cut themselves loose from groups on the fringes of the cultivated arable. The Agricultural Revolution in England also left a deep imprint on the new alien rulers, who had a more absolute notion of property distinct from the indigenous notion of a hierarchy of user rights. This was a complex and long drawn out process, which took place at different times in various regions.

The clock did not move at the same pace everywhere. But the process runs like a thread through narratives of different regions. Inclusive and accommodative modes of power were elbowed out as a new polity took shape.

But the privileging of certain modes of resource use, especially of sedentary cultivation was accompanied by another significant departure from past practice. It also set the ground for further regulation of the uncultivated wastes that had earlier only lightly felt the ingress of polities. In place of tribute or the tapping of skills of those who used the 'wastes', the British actually began to intervene in the production process itself. The colonial disjuncture was aptly summed up by a pleader who appeared before a committee of the Poona Sarvajanic Sabha in 1872. Vitallput of Colaba near Bombay lamented that, 'Under previous rulers only rice-producing lands were assessed before: barren lands used for subsidiary

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purposes were not assessed ... and the cultivator was permitted to collect decayed vegetable matter from the jungles and hillsides which he is not allowed to do now.²⁷

The annexation or the regulation of uncultivated lands was both an index and a consequence of the break with the past. The nature of the transition sketched out here is only tentative but it might help take the debate beyond the polarity of 'harmony' and 'disequilibrium'. Adivasis and Banjaras were not outside of the power structures in the pre-colonial era. Despite major changes, they retained varying degrees of autonomy within such state systems. The change in the nature of the polity now pushed such groups to the margins of power. This process began long before the enactment of the forest legislation in the 1860s and 1870s.²⁸ In fact, the drive to transform the forests into managed landscapes has to be seen against the backdrop of previous interventions. The British empire in South Asia was part of a global network: not only did it expose resources to new pressures, it could draw on sources of power outside the region. It was thus more insulated from pressures within the sub-continent than previous rulers. In the process, little of the hill, pasture and jungle was left untouched by the transition to a more intrusive political order and a harsher fiscal regime.

II.

It comes as no surprise that environmental histories of the colonial period are in large part about the fate and fortunes, the strategies and struggles, and the changing practices and consciousness of under-privileged or 'marginal' groups. More often than not, these are groups living on the fringes of the cultivated arable. Alternately, they might be cultivators but living in areas where the rainfall is low, the reliance on rainfall high and the cycle of crop production historically tied in with the use of uncultivated land.²⁹ The narratives follow a familiar line in which the adivasis or tribals, peasants, keepers and breeders of livestock, fisherfolk or artisans are 'marginalised' by a combination of colonial policies and the growth of capitalism. These processes, uneven as they were, facilitated the rise of more market and state-oriented patterns of production which were and are more ecologically disharmonious than the systems that they supplanted. The retreat of the jungle, the nomad and the swidden cultivator is central to stories of environmental transition in South Asia.³⁰ The twin themes of the decline of older patterns of land use and the degradation of ecosystems are interwoven in the narratives. Blending such complex and multifaceted processes into wider histories of social change is a more challenging task. Despite the history of attempts at homogenising social and ecological diversities, South Asia retained a level of heterogeneity that is perhaps without a parallel. 'Traditional' resource users proved resilient enough to adapt, innovate, survive and in rare cases, even flourish through the colonial era and into the present day. This was in contrast

to America, where the onset of new settlers and the pathogens, plants and animals that accompanied them overwhelmed indigenous peoples and organisms. This story of eco-political conquest, the theme of Alfred Crosby's theory of Ecological Imperialism, would, in any case, hardly hold true for Southern Asia. Not only did invasion by exotic animals remain a non-starter, even the environmental changes had more to do with social processes than 'purely' biological ones. This makes it all the more necessary to trace the career of political conflicts, for they had so much to do with changes in the land.

One feature of recent research has been that it has moved beyond groups involved in major social upheaval such as insurgency and discovered other patterns of resilience and resistance. Rebellions are exceptional moments, but their absence does not connote passivity.³² The new element in ecological history, of course, remains the attempt to locate such conflicts in their ecological context. For instance, Ajay Pratap's work on the Rajmahal hills examines the interaction of the British with the Paharias, a tribe that practised a form of shifting cultivation. The more numerous Santhals, who staged a major rebellion in 1855, do get attention. But it is the impact of land regulation and state forestry on the Paharias and their attempts to limit such intrusion that are the focus of Pratap's research. For the Paharias, the curbs on slash and burn agriculture precipitated a major crisis.³³ Similarly, the Baigas, a small tribe in the Central Provinces found their system of swidden cultivation come under intense pressure from the 1860s onwards. Again, the more numerous Gond tribals, who played a central role in the forest movements in the 1930s, were more amenable to the limitations of mobility. Their greater familiarity with the plough made colonial forest regulations less painful.³⁴ Neither the Santhals nor the Gonds were in harmony with the Forest or Revenue Departments. But even those who played a less spectacular role in rebellions did influence the course of events. The use of Forest Department records and oral sources, has helped shed light on resistance as well as cooperation in everyday life. This vital point, about the diversities of the subaltern experience, should help qualify a bleak and generalised view of disempowerment and decline. Neither process was a uniform one.

In fact, even the 'losers' were more than marginal in at least two distinct ways. One was the fact that they were often central to the cognition of colonial officials. In addition to the generation of more revenue or the appropriation of resources such as labour and forest wealth, there was the broader notion of putting an end to lawless and environmentally harmful mobility. The design and implementation of this highly interventionist project, or series of initiatives, can yield rich insights into the process of colonial rule. How far was failure due to imperial designs inappropriate for particular ecologies or simply a result of the absence of title to land and adequate capital to enable sedentary settlement?³⁵ This provides the starting point for many a recent history, with obvious resonances for the problems of displacement and rehabilitation in the present day. Either way, even rural land users like the Paharias and the Baigas, who were

marginal in terms of power and entitlement were central to the cognition of the rulers at critical junctures in history. Secondly, the expansion of the powers of the Company Raj or the market was not a unilinear process, but a complex one, with advance being held up and the terms being subject to negotiation. This part of the tale may lack the epic element inherent in histories of rebellions but is nonetheless a crucial one. There is no disputing the overall direction of changes once, 'The forest and the people who lived in there became managed as a resource in a wider system of production'. Increased fiscal pressure and the drain of wealth away from the hills were marked features of the Raj.³⁶ In the Dangs region of Gujarat, the tribals still recall the Mughal era as one of footpaths. In the British era, as an adivasi told the historian Ajay Skaria, footpaths gave way to roads. The new technologies of transport, both railways and road-building, opened up access to many such regions. But as long as labour remained scarce, or even difficult to obtain at the required time for forest or farm labour, hill peoples retained some elbow room. Despite serious setbacks, older forms of resource use did not always die out. For instance, the Paharias' form of swidden agriculture has survived, though with major modifications. Colonial policies could be modified and moderated due to pressure from below. There were limitations to the role and scope of such pressures but they did exist. The annexation of a patch of land by foresters or a new Land Revenue Settlement did not extinguish the lifestyle of rural peoples. Their responses – variegated and complex as they were – did leave a mark on policies. What needs strong emphasis is the attention to environmental change in recent work. After all, the transition from custom to contract and from fluid cultural and social ties to more sharply defined ones is a familiar theme of social history. What sets environmental history apart, and in my opinion must continue to do so, is the attention given to the changing natural world. Bereft of this, or alternately, if ecological changes were simply sought to be 'read off' the political economy or from the deconstruction of textual sources, the damage would be incalculable.³⁸ Ecologically informed history has come to stay. To evolve and grow, it has the choice of being a history as if ecology mattered. After all, humans have documented the way in which specific policy choices have led to major changes in the landscape in a relatively short span of time. To continue to do so, inter-disciplinary dialogue with the natural sciences will be a necessity. Such a dialogue would benefit both historians and ecologists. The pitfalls are obvious – not only are social scientists untrained for such tasks, the time scale we are dealing with may well expand from decades to centuries. Such agroecological history or history with an ecological flavour has many distinguished precursors. But it would also call for much more field work, and a deeper knowledge of popular culture and the techniques of production. Even the thought is daunting. The point may still stand. In the absence of a more nuanced grasp of the processes of ecological change, social history even in the narrow sense would be the loser. This is all the more apparent because so much of the research in the field is often inspired by a desire to shed

light on contemporary problems. Ever so often, the idea implicit in environmental histories is that there were critical junctures in the past when specific interests or the bias of dominant groups led to a certain set of choices in preference to others. The search for alternative models of development has left a deep imprint on scholarly work. The past becomes more than a vehicle for prophecy. Ever so often a researcher is asked, 'How can we solve the present crisis?' Those who study it are even expected to play a prescriptive role. In responding to such aspirations, historians have pointed to the precursors of today's alternative thinkers. For all the problems, and they are immense, 'traditional resource use systems' form a part of the answer. They are increasingly seen as dynamic and resilient. They do not, however, provide a panacea. The higher levels of accumulation and increased demographic pressures on the land have to be taken into consideration. But the work on the past does offer hope that the knowledge and skills of traditional resource users can play a part in the future. The extent to which that will be a practical proposition is, of course, a matter for further debate.

III.

Such debate is vital because of the diversities in the impact of colonial land management on different regions. For instance, the adverse consequences of modern canal irrigation in the Madras Presidency were never quite as marked as in the United Provinces. Unlike in the Gangetic basin, where British engineers mainly had to design and construct new canals, their counterparts in the Madras Presidency repaired and revived old works. The switch from well to canal irrigation in the north led to increased salinity due to the absence of adequate drainage. In the south, the very different topography and the incorporation of the old systems into the new limited such adverse consequences. The relationship between the older and the modern systems of resource use was, therefore, not always an adversarial one.³⁹ The contrast between different regions is also clear in the role of trees in the alluvial plains of Uttar Pradesh and Punjab with hilly regions. In the former areas, peasants historically have relied mainly on dung for fuel and the absence of tenant rights severely limited the growing of trees.⁴⁰ These findings by Saxena indicate that farmers did grow trees but the social and ecological milieu in which that took place has to be located and identified carefully. These caveats are all the more necessary because the emphasis on the interdependence of rural society may convey the impression of harmony and stasis, with colonial intervention being the sole agent of decline. The ties of commodity production and state regulation that bound the household to the world often meant different things to different people. One crucial point needs to be made in this respect. In much of the work and in this essay as well, the terms 'modern' and 'traditional' are often used as opposing categories. Useful as this may be in focusing on the disjuncture, it has a minor drawback. Following this

track, it is all too easy to miss out on the process by which the 'modern' or 'traditional' are reconstituted over time. For instance the rural social structure in many areas does not now permit the revival of collective institutions for managing forests. Broadly speaking this is true of plains areas as opposed to the hill and tribal regions.⁴¹ There is much in 'traditional systems' that can and must be drawn upon to meet environmental concerns. But it would be folly to imagine that the clock can be turned backward. Even a sympathetic view of 'traditional' resource use has to begin by acknowledging that they do not hold a magic cure any more than modern systems do. Nowhere is the gap perhaps as clear as in the approach adopted by Vandana Shiva.⁴² How far eco-feminism of the sort advocated in her work is valid has been the subject of debate. She undoubtedly opens up the role of modern science and knowledge systems for critical analysis. In common with others who are sceptical about the Enlightenment project and knowledge systems originating in the Western world, her critiques do pave the way for a serious consideration of alternative traditions. The popularity of the critique in India has been explained by a recent writer by referring to the central role of women in the present phase of the Indian environmental movement.⁴³ Critics have largely focused on the issue of gender, on the manner in which the role of women in the process of environmental change is often far more complex than Shiva admits. Briefly put, other scholars who have put gender on the agenda have stressed the importance of the changing social context and the consciousness of women and men in place of an essentialist notion of women being at peace with nature.⁴⁴ What has been missed out in the debate are the problems posed by this approach when it comes to the wider issue of assessing the colonial experience. The point which neither Shiva nor her critics make is a simple but vital one. In the bid to give 'traditional' resource users a new legitimacy, the colonial experience itself is being seen in a simplistic way. In this paradigm, colonial or modern knowledge is seen as inherently anti-nature and anti-people. The corollary to this view is that such systems need to be rejected. Interestingly, ecology though itself a part of the modern scientific system is seen as the way to overcome 'reductionism'. This argument has serious limitations.

For one, scientific knowledge was not a monolith as Shiva herself admitted. It included many diverse traditions. Yet, the awareness of this diversity is not integrated into a broader perspective on the legacy and pitfalls of science. As Worster has demonstrated in the specific case of ecology, the 'imperial' view of nature was often in contention with the 'arcadian' one. While the former emphasised the conquest and domination of the natural world, the latter focused on the discovery of harmony and unifying processes in nature. This division was to be crucial and Worster argues that today's ecologically conscious ideologues have their roots in the latter tradition.⁴⁵ Secondly, by imposing a timeless teleology on the West (at least after Bacon and Descartes), the East-West dichotomy may well ignore changes within the Western world. The term 'Orientalism' has often been used to describe the ascription of essentialist qualities to colonised lands and peoples. In that case, the reverse process is at

work. An 'Occidental' view of the West is clearly in the making. Whatever its political affinities or moral claims, it can hardly help comprehend the roots of present day ecological dilemmas in 'East' or 'West'.

Above all, no student of South Asia's environmental record can possibly choose to ignore the fissures and cracks within the colonial state. Grove's most significant contribution, after all, lies in showing how surgeons and botanists working for the East India Company state sounded alarm bells about the ecologically deleterious impact of unrestrained *laissez faire* as early as the 1830s. In this respect they were actually at the cutting edge of scientific knowledge.⁴⁶ Irrespective of the validity of this hypothesis, his study points to the key role of internal critics and dissenters within the state apparatus. The implication of the Grove thesis is that colonial officials were not simply transplanting ideas and technologies from 'core' to 'periphery'. The ecological character of tropical colonies, with sharp climatic fluctuations and soils vulnerable to erosion meant that the environmental damage caused by unbridled free enterprise became evident much more rapidly than in Europe itself. Officials of the Company state also had more leeway to regulate private property than their counterparts in England. So, the in-house critics did not simply impose 'Western scientific practices' on South Asia. On the contrary, many critical concepts in conservation evolved in the island colonies in the Indian Ocean and in the sub-continent.⁴⁷

Later in the century, even the process of the expansion of state control had its critics not only outside but even within the corridors of power. Dietrich Brandis, the first Inspector General of Forests, fought a rearguard battle trying to ensure that community forest management was given a complementary role alongside state forestry.⁴⁸ His failure was significant but surely it is striking that both the key institutions of modern society, the market and the state, were analysed and criticised from an implicitly ecological point of view by some colonial officials. The interplay of market forces and the role and place of state regulation continue to occupy a central place in ecological debate. True, as has been pointed out with regard to the advocates of accommodation of nomadic cattle breeders, officials did not take aboard such a view because of a 'lets-be-kind-to-the-nomads' philosophy. Often, they were hard-headed realists who felt that accommodation would serve better the wider objectives of colonial policy, in this case, the breeding of good milch and draught cattle.⁴⁹ There may be hesitation in seeing any positive element in ideas emanating from 'above' After all, many farsighted initiatives in the urban and rural context did fail.⁵⁰ What is crucial is the broader insights provided by such debates. The colonial structure was not a monolith. Divisions within the ruling elites were subsumed within a broader unity. And as for rejecting ideas because of the source of origin, surely Marx would have made little progress had he ignored the ideas of the most dismal of classical economists, David Ricardo! Despite their origins, ideas can and do acquire a momentum and logic of their own. The problem goes even further.

However simplistic the paradigm may seem, Shiva's concerns need more critical attention. This is all the more imperative because she articulates a widespread sentiment of the environmental movement, that the experience of colonial officials had nothing positive to offer. Not only would that amount to a misreading of the evidence, it would leave us with a mechanical view of state-society relations. Contingency is integral to environmental history. The critical role of choices – made or not made – must remain part of the story. It is no coincidence that ever so often environmental ideologues turn to the past for inspiration. In addition to popular upsurges and Indian thinkers, the roots of alternative notions of development surely owe a debt to more ambiguous figures. These include, 'An Oxford priest who left Church and King to become an Indian citizen, and a Scotsman who first came to India at the invitation of the colonial government'. Such figures as the anthropologist Verrier Elwin and the city planner Patrick Geddes often anticipated many of our own dilemmas. In the case of the latter, an urban historian recently remarked that his plans for fifty cities have been 'shelved, lost, forgotten.' It would be folly to continue to shelve the work of such pioneers of environmental thought.⁵¹ Let me make it clear: this is not a case for a return to the notions or practices of the imperial past. But in the drive to reclaim popular movements for posterity, we should not neglect more ambiguous figures or moments.⁵² Environmental history is, after all more than a story of degradation and decline. The attribution of blame is a key part of the tale but not all of it. This is inevitable given the nature of present concerns. But in addition to villains, whether they are persons or processes, there is space for heroes and heroines. In addition, there is ample scope for more ambiguous figures. The contradictory impulses in our own lives – of the creation of wealth and the despoliation of nature that so often accompanies it – find counterparts in the past. Histories of environmental change have much to offer a student of South Asian history and society. The very social and ecological diversity of the sub-continent provides starting points for many an interesting story. For that very reason, there is much that histories of South Asia can contribute to the field in general. In particular, we can compare and contrast the processes in the region with other colonised territories to ask how far there were environmental consequences of the changes in the nature of the polity and the attempts from 'below' and 'above' to come to terms with the new context have so much to offer those with an interest in our present predicament. The study of when, why and where the turning points in the past lay has only just begun. It matters for more than narrowly academic reasons, because it can shed light on alternative futures. As T.S. Eliot wrote,

Footfalls echo in the memory
 Down the passage which we did not take
 Towards the door we never opened
 Into the rose garden.

NOTES

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¹R Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Western Himalaya*, Delhi, 1989. New works include A. Skaria, 'A Forest Polity in Western India, The Dangs, 1800s-1920s', Cambridge PhD, 1992; M. Rangarajan, *Fencing the Forest: Conservation and Ecological Change in India's Central Provinces, 1860-1914*, Delhi, 1995; A. Prasad, 'Forests and subsistence in colonial India, A study of the Central Provinces, 1830-1945', Jawaharlal Nehru University PhD, 1994.

²Two new collections are: D. Arnold and R. Guha (eds) *Nature, Culture and Imperialism: Essays on the Environmental History of South Asia*, Delhi, 1995; R.H. Grove, V. Damodaran and S. Sangwan (eds) *Nature and the Orient: Essays in the Environmental History of South and South-east Asia*, Delhi, in press. See D. Hardiman, 'Small dam systems in the Sahyadris' and M. Anderson, 'The conquest of smoke: regulation and air pollution in colonial Calcutta' in Arnold and Guha. For fauna, J.M. MacKenzie, *The Empire of Nature, Hunting, Parks and British Imperialism*, Manchester, 1988. The history of science is examined in S. Ravi Rajan, 'Imperial Environmentalism: The agendas and ideologies of natural resource management in British colonial forestry, 1800-1950', Oxford PhD, 1994.

³This essay is limited to the modern period but the Grove et al. volume includes papers on the ancient and medieval periods.

⁴M. Gadgil and R. Guha, *This Fissured Land, Towards an Ecological History of India*, Delhi, 1993. The book may be consulted for its extensive bibliography.

⁵Despite rich documentary and archival sources, the imperial impact on fauna has not been researched in any detail. Besides MacKenzie, *Empire of Nature*, see R. Sukumar, *The Asiatic Elephant: Ecology and Management*, Cambridge, 1989. The best guide to the impact of vermin extermination is K.S. Sankhala, *Tiger! The Story of the Indian Tiger*, London, 1978.

⁶For insights on Africa see D. Anderson and R.H. Grove, *Conservation in Africa: People, problems and practice*, Cambridge, 1988, and W. Beinart, 'The Politics of Colonial Conservation', *Journal of Southern African Studies*, ii (1989): 143-162. On game management, W. Beinart, 'Empire, Hunting and Colonial Change in Africa: A Review Essay', *Past and Present*, 128 (1990): 162-186. For comparative Views, D. Worster (ed.), *The Ends of the Earth: Perspectives on Modern Environmental History*, New York, 1988; J.M. MacKenzie (ed.), *Imperialism and the Natural World*, Manchester, 1990; and M. Poffenberger (ed.), *Keepers of the Forest: Land Management Alternatives in Southeast Asia*, West Hartford, 1990.

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⁷D. Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West*, New York, 1985.

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⁹ R. Guha, 'Writing Environmental History in India', *Studies in History*, ix (1993): 9-129. R. Guha (ed.), *Social Ecology*, Delhi, 1994 includes several key papers on historical and contemporary debates.

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¹¹ Gadgil and Guha, *Fissured Land*, pp. 106-108. The argument on caste is outlined on pp. 91-109.

¹² I. Habib, 'The Geographical Background' in I. Habib and T. Raychaudhuri (eds), *The Cambridge Economic History of India*, Volume I, Delhi, 1984, p. 2.

¹³ S. Zaidi, 'The Mughal state and tribes in 17th century Sind', *Indian Economic and Social History Review* (Hereafter IESHR) xxvii (1989): 343-62. On Punjab, C. Singh, *Region and Empire in the Seventeenth Century*, Delhi, 1991, pp. 263-270.

¹⁴ G. Prakash, *Bonded Histories: Genealogies of Labour Servitude in Colonial India*, Cambridge, 1990, p. 70.

¹⁵ C.A. Bayly, *Rulers, Townsmen and Bazaars, North Indian society in the age of British expansion, 1770-1870*, Cambridge, 1983, p. 204, and 'Creating a colonial peasantry, India and Java, c. 1820-1880', *Itinerario*, xi (1987): 93-106.

¹⁶ N. Menzies, 'Exclusion and inclusion in wildland policies in late Imperial China', *Modern Asian Studies*, xxvi (1992): 119-135; C Totman, *Green Archipelago, Forestry in Preindustrial Japan*, Berkeley, 1989.

¹⁷ J. Malcolm, *Report on the province of Malwa and adjacent districts*, Calcutta, 1822, p. 408. A mahal is a revenue circle.

¹⁸ J.C. Hesterman, *The Inner Conflicts of Tradition, Essays in Indian Rituals, Kingship and Society*, Chicago, 1985, pp. 170-171.

¹⁹ I. Habib, 'Merchant communities in pre-colonial India' in J. Tracy (ed.), *The Rise of Merchant Empires, Long Distance Trade in the Early Modern World*, Cambridge, 1990, pp. 371-399.

²⁰ F. Buchanan, *A Journey from Madras through the Countries of Mysore, Canara and Malabar*, London, 1807, p. 179.

²¹ C.A. Bayly, 'Empire and Information in India', *Modern Asian Studies*, xxvii (1993), 3-43.

²² Habib, *Cambridge Economic History*, I, 6.

²³ S. Alavi, 'North Indian military culture in transition, 1770-1830', Cambridge PhD, 1991, pp. 120-121.

²⁴ Skaria, *Forest Polity*, p. 84

²⁵ Bayly, *Indian Society*, p. 141; Alavi, *Military culture*, pp. 187-188.

²⁶ R. Varady, 'North Indian Banjaras: Their evolution as transporters', *South Asia*, ii (1979): 1-18.

²⁷ Report of the subcommittee on the Poona Sarvajanic Sabha appointed to collect information to be laid before the East India Finance Company on matters relating to India,

Poona, 1872, pp. 59, 67.

²⁸ M. Rangarajan, 'Imperial agendas and India's forests, The early history of Indian Forests, 1800-1878', *IESHR*, xxi (1994): 147-167. I am grateful to K. Sivaramakrishnan for discussions on this point. Ongoing researches on various regions will undoubtedly broaden our understanding. These include Sivaramakrishnan (on Bengal), Bela Mallik (Assam), Daman Singh (Mizoram) on various aspects of forests. Also, Niti Anand (irrigation in Maharashtra), Rohan D'Souza (flood control, Orissa), M.S.S. Pandian (the Nilgiris).

²⁹ Guha traces the emergence of peasant resistance to state forestry in Uttarakhand, among communities of caste Hindus, not tribals. Guha, *Unquiet Woods*.

³⁰ C.A. Bayly, *The New Cambridge History of India*, Vol.I, *Indian Society and the Making of the British Empire*, Cambridge, 1988, pp. 138-142, 161.

³¹ A. Crosby, *Ecological Imperialism, The Biological Expansion of Europe, 900-1900*, New York, 1986.

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³³ A. Pratap, 'Paharia ethnohistory and the archaeology of the Rajmahal hills: archaeological implications of an historical study of shifting cultivation', Cambridge PhD, 1987.

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