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Colonialism and Environment in India

Comparative Perspective

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Although colonial rule throughout the world was accompanied and supported by exploitation of forests and environmental destruction, independence has not put a stop anywhere to these processes. Rather, the disruption of the relationship between local societies and their natural resource bases has continued in the worldwide movement towards modernisation. Instead of contrasting this situation with a mythical golden age of equilibrium between society and nature, what is needed is a radical critique of capitalist expansionism, of which the colonisation of nature has been one of the major objectives.

CURRENT anxieties regarding our dwindling capital of biomass resources at the world level have brought to the fore the question of the relationship of rural societies with their forest environment. The social perception of nature has always been a central preoccupation of social anthropologists. But students of peasant societies have long considered the forest as of peripheral importance, probably simply because it was situated at the periphery of the cultivated space. Agrarian history, both western and non-western, has up to now largely been a study of techniques, yields, appropriation patterns, taxation, commercialisation, social stratification, peasant resistance. It has too rarely examined from a truly ecological standpoint the effects of land colonolisation, agricultural and animal husbandry practices, hunting and gathering by peasants, and the functioning and crises of agrosystems (except in the special case of famine). The opening chapters of many books of agrarian history are geographical presentations of the areas of study which convey the impression that the natural setting of agrarian life is a timeless framework of unchanging biophysical conditions. Any static conception of the relationship between human communities and their environment is of course misleading, as an agrosystem is usually the outcome of a long history of ecological disruptions and adaptations. As long as it functions, it necessarily remains in a state of dynamic and unstable equilibrium. In particular, the interrelationship between agriculture and its forest 'frontier' is often ignored in these studies, or treated marginally. As a rule, the agrarian historian has left the forests where they were, on the distant horizon, or as dark wild patches in the midst of the humanised artificial landscape of peasant life and activity. The origin of the word 'forest' is a late Latin word, 'foresta', most probably derived from the adverb 'foris', which means 'outside'.[1] In leaving the forest outside his purview, the agrarian historian in fact adopts the point of view of the state, or more accurately the point of view of his sources, that is to say official records, which relate mainly to the cultivated area, that which produces revenue.

The conception of the forest by the peasant himself was of course quite different. The accessible forest was a central element in the organisation of traditional agriculture, a sort of wooded extension of the cultivated space, often criss-crossed by pathways, and daily frequented by village people who came to graze cattle, to hunt, and to collect fuel, timber, litter, green manure, and all sorts of other vegetable produce which often constituted important adjuncts to their diet or to their sources of monetary income. Prompted by the current fears of an impending world ecological crisis and by the widespread indictment of thoughtless deforestation, the agrarian historian is now reversing his perspective, and forest history has been developing rapidly over the last few years.

My purpose here is to explore briefly the colonial phase of the history of Indian forests, and this in a comparative perspective. As everyone knows, it is in the tropical world that ecological devastation is most dramatic today. The biological wealth that is being destroyed here is both the most abundant and the most vital to the future of the human species. And it is here that its destruction seems most difficult to control. The forests of the tropical zone entered for the first time into a phase of common history at the world scale when they were all brought under more or less simultaneous attack during the age of the capitalist expansion of Europe. The phrase 'imperialism and the natural world' has become paradigmatic these last few years for a new and growing range of historical problems and research. The details of Indian forest history during this period are now being gradually unearthed from the forest records by historians. I would like to review these data in the light of current general views on this new apsect of the history of European expansion.

It is commonplace to say that, in the countries which underwent European colonisation, the colonial period normally represented a very important phase from the standpoint of the destruction of the natural environment. However, let us not be overly Eurocentric here. This phase of destruction was not the first in history. The desertification of Mesopotamia, the depletion of the cedar forests of Lebanon from the time of the Phoenicians, the massive fellings in Roman North Africa, the extensive hill clearings in the Southern Maya Lowlands of Mesoamerica, the ecological decline of the classic Khmer empire, the over-exploitation of forests and consequent energy crisis in Tokugawa Japan, the almost complete denudation of China for agriculture by its own peasantry, are only scattered dramatic examples of a general historical phenomenon, the gradual depletion of the world's forest cover for the needs of agricultural expansion and urban development. India, of course, has not been spared by this general trend, and evidence is not lacking, for instance, on the impressive rate of forest clearance throughout the Gangetic basin during the medieval period. Also, considering what followed it in many countries, the colonial phase of environmental disruption has not everywhere been the worst. But it undeniably set in motion processes (economic, demographic, social, administrative, legal) that stimulated the overuse of natural resources and have proved difficult to reverse. On the other hand, the colonial period was often marked, in the countries involved, by the inception of conservation policies, even though these policies reflected the needs of the state rather than any strong concern for the welfare of the local populations. The overall picture is thus dark, but not entirely black.

I
Colonial Factor in History of Environment

The historians of the 1960s waged a long war against the structuralist notion of 'societies without history' (or rather against the distinction which Levi-Strauss made between

'cold' and 'hot' societies, which was in fact misunderstood, historicity being mistaken for history). A similar struggle might well have to be launched to combat the notion of 'nature without history'. There is, after all, a connection between the two notions. Societies without a history, in the common erroneous interpretation of the phrase, were believed to have remained outside the mainstream of history because of their total immersion in the unchanging rhythms of a natural environment which was thought to determine them completely. While historians have rightly refused such an idea, we must also reject the idea that colonisation everywhere struck the first blow against natural states of equilibrium which had remained intact since primordial times. The myth of primeval nature is found everywhere and at all times. In Europe, mediaevalists long thought that the massive clearings of the ninth to the 12th centuries had been done at the expense of forests which had been untouched until then, and they believed this on the basis of the mediaeval chronicles themselves. Now wherever precise archaeological enquiries have been carried out, they demonstrate that on the site of many of these medieval forests, there had been intensive human occupation during protohistorical or Roman times. Everywhere in the tropical world, for accidental reasons such as the construction of roads, remains of very ancient (not unfrequently neolithic) human occupation are found in the midst of supposedly virgin forests. Palynological and palaeobotanical studies of quaternary sediments within the dense forests of peninsular India show evidence of clearances and of the practice of agriculture from the beginning of our era. It is common knowledge that the terai forests of northern India contain innumerable remains of fortifications and shrines, of canals, of deserted village sites. We know, for instance, from the evidence of Chinese Buddhist pilgrims that the Gorakhpur forests were the site of flourishing towns before the fourth century, which lasted at least until the seventh century. In Sri Lanka, the forests of the dry zone, where by the beginning of the colonial period only groups of hunters and shifting cultivators remained, were actually not more than five or six centuries old. They had succeeded, after the 12th century, to a long phase of prosperous agriculture supported by a highly developed water-supply system. Vestiges of precolombian agricultural practices are found in the Mexican forests. Bantu expansion colonised many parts of the central African forest long before European colonisation. Historians have formed the hypothesis that the vast teak forests discovered by the Dutch in the centre and west of Java in the 17th century were the result of plantation carried out at the beginning of our era. In India, similarly, the 'jungle' was not unfrequently man-made, as when local kings planted forests or allowed their spontaneous regrowth in order to protect their territories against potential invaders: we have precise examples of this from Saurashtra for instance. One could go on indefinitely with examples of this kind. It must be noted, incidentally, that the western myth of the 'virgin forest' carried with it, in the colonial context, important legal and economic implications. Since by definition the untouched primordial forest belonged to no one, it seemed only logical that its control should vest in the colonial government.

Similarly, the societies which lived in and from the forest when the Europeans arrived were not isolated communities preserved from all outside influence from the beginnings of history. In India, the relationship between the forest tribes and the sedentary populations of the plains were constant and diversified, and the myths of the former show how deeply the latter formed part of their cultural universe. Many forest societies of the tropical world were in fact peoples from the plains who had been driven into the forest by force or had had to take refuge in them. Many societies of hunters-gatherers have been shown to be former societies of settled agriculturists who were at some point in time driven out of their habitat and forced into the forest where they adopted a different mode of subsistence, based on the natural resources of the forest. Godelier has interesting examples of this to offer from New Guinea and elsewhere.[2] Similarly, the nomadic herdsmen of Mongolia are not originally people of the wilderness, primitive hunters grown into pastoralists, but peasants who gave up the insecurity of dry-farming in a most difficult environment for a more reliable and, in their eyes, noble mode of subsistence.[3] Shifting cultivation, contrary to a widespread cliche, was in fact not necessarily associated with insulated and primitive ways of life. It was occasionally compatible with a market economy, with land ownership and taxation, and it has at times supported urbanised civilisations, such as that of the Mayas.[4] In addition, many products gathered in the tropical forests had been items of long distance trade long before the advent of the Europeans. So, western colonial expansion did not necessarily disturb or destroy primordial states of ecological equilibrium, nor any original harmony between societies and their natural environments. At best, it destabilised *relatively* stable situations, which were the last stage of long histories of successive disturbances and adaptations.

The nationalist myth of the precolonial golden age survives today in the oft-stated view that indigenous societies, before the advent of colonialism, were able to maintain a state of ecological homeostasis with their natural environment. They achieved this equilibrium, it is said, thanks to their immemorial knowledge of the natural world and to the innate wisdom of their self-managed local communities, which were spontaneously inclined to nature conservation, and practiced collective self-restraint in the utilisation of its resources. There is no denying, of course, the marvels of ethnoscience, but such pronouncements imply more dubious value judgments which have unfortunate implications. They in fact resuscitate the Eurocentric narrative according to which the history of the non-western world was set in motion by the disruptive impact of western expansion (beginning with the 'Great Discoveries' of the late 15th century). They implicitly postulate that the access to natural resources was equally open to all, and ignore the facts of power and inequality in the structure and functioning of precolonial societies. They give a new span of life to the old opposition between tradition and modernity, an ideological construct which was believed to have foundered with modernisation theories. They seem to disregard the evident material fact that the collective preservation of a natural resource base requires no particular ecological ethos as long as population density remains low, and that it is the scarcity and overuse of available resources that generates the impulse towards conservation. They also do not raise the basic sociological question of the relationship between symbolic norms and actual behaviour or practice, and especially of the efficacy of ethical rules when individual interest, pressing necessity or strategies of survival run counter to them. This is not to detract from the value of the various experiments in joint management of forest areas by local populations and the forest departments now going on in India, or to deny the virtues of communal control of common property resources, as it is urgent in any case to do away with the abuses of exclusive state control of the forest biomass. But the emotional reference to what is in essence the western phantasm of 'the world we have lost' is scientifically unsound and probably only serves to make the necessary political compromises more difficult.[5]

This does not mean that we should systematically minimise the importance of the colonial impact on natural environments. From many points of view, it represented a radically new phenomenon. First, it was an attack on the world scale, corresponding to the phase of expansion of western merchant and industrial capitalism. Second, the intruders had means of conquest at their command which were generally out of all proportion to those of the local societies. Third, the offensive was backed by a conquering modern ideology according to which nature ceased to be the sacred order of things.

or the abode of the gods (as Marx said, it was 'disenchanted'). It had become an object to be mastered, exploited, transformed, and commoditised, a means of speculation, a merchandise (and there is no need to lay the blame for this promethean and depreciating attitude to nature on the tradition of Christian anthropocentrism, as has sometimes been done.[6] Fourth, the colonisers carried with them techniques and tools, introduced crops and forms of animal husbandry, opened up routes for diffusion and exchange, which irreversibly altered the local socio-ecological configurations. And finally, to serve their own interests, they set up everywhere an increasingly efficient framework of governmental control, which gradually denied the local populations free access to their traditional natural resource bases, at a time when their numbers were beginning to increase. Although the ecological stresses and traumas resulting from European colonisation were not by any means the first events of their kind in the tropics, the scenarios for the first time were modern, representing the onslaught of commercial and industrial capital on the natural resources of the world at large.

II
Domestication of Tropical Nature

Cultural perceptions of the forest are always ambiguous. On the one hand, the forest is a generous provider of plant and animal resources, a space for freedom, pleasure and adventure, a refuge against the evils of war or the contradictions of society, and a place of spiritual retreat, of regeneration, or salvation, where saints choose to reside, and where, according to the Hindu model of the 'ashramas', men ideally should retire as 'vanaprasthas' (forest dwellers) at the end of their life. On the other hand, the forest is viewed as a land of the unknown and the unpredictable, inhabited by outlaws and wild tribes, and a haunted space, the abode of threatening and undominated forces, demons, or the spirits of the dead. It is the 'other side', against whose dangerous intrusions men and communities have to protect themselves. One of the major responsibilities of the 'raja' in Hindu tradition was to extend his domination over these wild areas, to placate the uncontrolled powers inhabiting them, and thus to protect his people against them, while displaying his own superior might.[7] Guardian gods and goddesses in the Indian countryside are placed at the outer limits of the cultivated space, facing the wilderness. One could characterise the social perceptions of the desert in equivalent terms.[8] In one form or another, this kind of interplay between the geographical and the symbolic occurs in all cultures. The colonial perception of the tropical forest was no exception. On one side there is 'the emerald forest', the fantasmatic illusion of pure virgin nature in all its profusion and beauty; on the other there is the 'green hell', a tentacular and entangled plant-world, essentially hostile, where invisible dangers lurk.

The perception of animal life was even more ambiguous because of the anthropomorphic characterisations of animal behaviour, which projected onto it all the ambivalences of the human soul. This is particularly obvious in the vast colonial literature of hunting stories and memories. In the ideology of the colonial hunt, besides the quest for adventure and prestige, there is on the one hand a fascination with natural beauty, and on the other a sort of urge to exterminate symbolically the dark side of human nature, that is to say human defects which are attributed to animals, such as cruelty, cunning, treachery, thieving or murderous instincts. The hunt is also a symbolic re-enactment of the victory of the forces of civilisation over savage nature.

Finally, even the human societies of the forest and of the savanna were commonly stylised, according to a sort of brutal naturalist reductionism, into elementary essentialist characterisations. The aborigene in the bush or the forest was described as childlike, ingenious, unpredictable, potentially dangerous, and he was seen as a survival of primal human savagery, entirely determined by the ecology of his habitat.

Ideology of Exploitation

Everywhere in the colonies, the forest was at first considered as an obstacle to the rational and profitable use of the land. Colonisation bred the emblematic figure of the pioneer, whose symbols were the axe and the gun, both tools of destruction whose ultimate purpose was to substitute civilised order for savagery. And the aborigene himself, whenever organised and productive exploitation of natural resources became the order of the day, often came to be seen as standing in the way, as a trouble-maker, who had to be displaced or neutralised. It should be plain however that the will to clear, dominate and exploit wilderness was not by any means a cultural specificity of the western coloniser.[9] Even in Hindu culture, which lays a stonger stress than most on the necessary conformity of the human order to nature, the duty of kings, as set out in the *Arthashastra* for instance, is to extend their kingdoms both by military conquest and by clearing and colonisation of virgin land. But the colonial onslaught on the forests was worldwide, and it was carried out by Europeans with powerful technical means, so that its effect was unprecedented.

The agents of this development were colonisers who, so to say, "carried their ecology with them".[10] They renamed regions, trees, animals and landscape elements after those with which they were familiar in their countries of origin. They were bent on applying western principles and techniques of cultivation in non-temperate environments to which they were not adapted, at the cost of repeated failures. They were culturally biased in favour of settled agriculture or cattle raising and against itinerant life-styles such as shifting agriculture, which was considered wasteful and unproductive. As far as forestry was concerned, their ideal was the plantation - which is a domesticated, rationalised, optimised form of the forest. Colonial forestry, as a rule, was mainly concerned with a few commercially valuable species, while the species commonly used by the local populations were extremely numerous. The ideal of the foresters in French Africa or Indochina, according to the principles that were taught at the school of forestry at Nancy, was homogeneous populations, closed formations, and tall, straight tree growth. The German tradition of forestry, which spread to the Dutch and British colonies, was no less single-minded. In India as elsewhere, the foresters sought to increase the commercial profitability of the more accessible forests through the systematic plantation of a very small number of species, such as conifers in the Himalaya and teak in south India, species which were of little use to the local populations, as contrasted to many other species which were eliminated.

The application of these eco-ethnocentric concepts overseas led to the destruction or reshaping of landscapes and the displacement of indigenous populations. As always, human intervention in natural systems determined a transition from complexity to relative homogeneity. The main trend was towards the substitution of single-species cultivation for natural diversity, the replacement of prolific generalised ecosystems by specialised ones(and especially agro-systems). This was often done on the basis of an inadequate knowledge of the environments involved, leading to spectacular failures. For instance, there was an erroneous belief, particularly in the first phases of colonisation, in the exceptional fertility of tropical soils, based on the luxuriance of spontaneous vegetation. Knowledge of the dynamics of tropical forest ecosystems was extremely scanty; a high rate of failures in these conditions was inevitable.

Features of Tropical Ecocide

It was normally in its initial phase that colonisation of natural environments was most carelessly destructive. The process sometimes began with the conquest itself, when deforestation was part of military operations. Defensive forests were as common in the tropical world as they had been in the ancient and medieval west. Muslim chronicles in India often refer to the forests

that the armies of the sultans of Delhi or the Mughals had to chop down in the course of their campaigns against rebel chieftains. Even as late as the 1850s, at the time of the Sepoy Mutiny, most of the 159 strongholds of the taluqdars of Oudh were mud forts bordered by ditches and surrounded by 'jungles'.[11] A forest was an obstacle to the movement of armies; it could easily become a base of resistance or guerillas; it provided a convenient refuge to criminal elements; in short, it stood in the way of political hegemony, and it also formed a barrier to agricultural expansion. Forest destruction was consequently a common feature of the colonial conquest in south Asia as elsewhere. It is known, for example, that the forests which protected the heights of the kingdom of Kandy in Ceylon were razed at the time of the British onslaught.

In the first phases of colonisation, forest exploitation was generally extremely improvident and wasteful. The scenario was more or less the same everywhere. The vastness and abundance of the forests encouraged the illusion that they were inexhaustible. The most accessible stands, close to the coast or to river banks, were attacked first, and they were destroyed without a thought for their regeneration, thus creating increasing difficulties, costs and delays (in transport, floating, etc) for later exploitation. The forest was gutted to procure a small number of precious species. Dozens of trees were damaged in the process of felling a few. Massive felling was done just in order to extract some 'minor products', as in Java where sometimes several hundred camphor trees would be sacrificed in order to find one containing crystallised camphor. It must be added, however, that in this regard, as in the case of military deforestation, colonisation did not mark an absolute beginning, but often an acceleration or systematisation of earlier practices, made easier by the introduction of more effective techniques and tools. Everywhere the export of valuable woods or 'minor forest products' had started long before colonisation.

More radical was the razing of forests to the ground, with the consent of the colonial authorities, in order to develop plantations, commercial cultivation or animal husbandry. The most spectacular ecological transformations of this kind were those which took place on islands such as New Zealand, the Canaries or New Caledonia. New Zealand was almost entirely deforested by the European agricultural settlers in a little more than a century, and most of the wood was burnt on the spot because the overproduction was such that it had practically no market value. In New Caledonia, which became a French colony in 1853, the Kanak agricultural system, which was based on a delicate balance between forest, grasslands and horticulture, was driven back by European cattle raising. The cattle were introduced by the while settlers in the hope of repeating the Australian 'miracle'. The Neo-Caledonian savannas were more or less similar to those of eastern Australia, and as J Barrau says, "with their historical experience of livestock farming, Europeans could not see these grasslands without immediately thinking of cattle".[12] Land was taken from the Kanaks and where necessary it was deforested and converted into pastures. The bovines had been introduced in the 1850s. By the 1880s, there were close to 90,000 of them on the island, roaming freely everywhere, trampling down and destroying the elaborate irrigation and drainage system of the Kanak horticulturists, breaking up their gardens, and endangering their very subsistence. Then, as the soil was in fact poor and had become subject to erosion, and the grass overgrazed, these pastures soon became unproductive and the yield of the cattle farms went down. This prompted the settlers to take more land from the Kanaks. In the end, they were confined in a few tiny reserves encircled by huge cattle farms, where each bull enjoyed much more living space than each individual Kanak in his reserve.

This phenomenon was universal, though in differing degrees, throughout the colonial world, because exploitation of the land was one of the main reasons for colonisation as such. Let us remember that the Permanent Settlement of Bengal was designed, among other purposes, to induce the zamindars to increase the profitability of their lands: the land revenue being fixed once for all, any increase in their rent rolls would remain exclusively theirs. This of course represented a powerful incitement to the clearance of forest and jungle on their zamindaris, and in this way the Permanent Settlement became an engine of deforestation in eastern India.

Local contractors and timber dealers often played an important part in the deforestation. For instance, local merchants and proprietors carried out reckless exploitation of the forest of the western ghats during the first half of the 19th century before the advent of strict government control, and private contractors (almost all Indian) were prominent in the harvesting of the 'sal' and 'deodar' forests of northern India for railway construction.[13] The building of the huge railway system of the Indian empire was a major windfall for the Indian timber business. The story of railway deforestation in India is well known, and need not be repeated here.[14] Let it only be said that the railways required more than one million sleepers every year in the 1870s, each sleeper lasting normally 12 to 14 years. One average mature tree (sal, teak, and deodar being the only species of appropriate strength) could provide seven sleepers. Until the 1890s, when the use of coal began to become general, the forests also had to provide for railway fuel. The way in which the Indian forests were being worked by private enterprise was as a rule extremely wasteful. This is one of the reasons of the creation of the forest department in 1864, as it appeared necessary to protect the forest capital of the empire more effectively in order to cater to the needs of the railways. In Sri Lanka, Ceylonese timber merchants (who in addition had a stake in coconut and rubber planting on the deforested areas) played a decisive role in the deforestation of the island. So did Indonesian and Chinese entrepreneurs in the Indonesian archipelago, and Chinese dealers in timber and forest by-products in French Indochina. Yet the main agent of environmental transformation was the European coloniser. The local merchant or contractor who took part in the process operated within an economic framework which had basically originated in the colonial situation.

The extent and methods of colonial deforestation all over the world have been the subject of active research for several years now. The accounts of the martyrdom of colonised nature in the tropical world are sadly repetitive, and I will not dwell at length on this aspect. Because of the lack of scientific knowledge the fellings led to massive and irreparable ecological mistakes. Even past experience did not always restrain destruction, because the quest for short-term profit led to disregard of long-term consequences. One significant example is that of the extensive fellings carried out in Ceylon by the first generation of coffee planters, who were but adventurers looking for quick profits at all cost and who were ready to abandon their lands as soon as they were exhausted, as the cost of virgin land at that time did not exceed a few shillings per acre.[15] Once they had left, however, the ecological damage remained and the local populations had to put up with it. Actually, in the colonising countries themselves the disadvantages of too-intense deforestation were well known. England and the Netherlands had lost almost all their forest cover when they started exploiting that of their tropical colonies. In France, the forestry school at Nancy was created in 1827 in response to the need for careful management of what remained of the forests in the country. But nowhere in the colonies was any serious attention paid to the necessity for scientific working of forests before the second half of the 19th or the beginning of the 20th century. Indigenous practices for the management of the natural environment were unknown or ignored. In pastoral zones, overgrazing was the great danger. Thus in the South African veldt the grass was over-cropped by the sheep of European settlers, whereas in former times the indigenous Hottentot farmers used to migrate with their cattle at the first indication of decline. The same was the case

with the rapid degradation of the grasslands of New Caledonia, which had been mistaken by the European settlers for rich natural pasture, and which, besides losing their fertility through soil erosion, were soon overgrown because of selective grazing by the cattle, by unpalatable grasses and various introduced weeds.[16]

One of the main reasons for these ecological failures was the fragility of the specialised agrosystems which took the place of the destroyed generalised ecosystems. The more an agrosystem is specialised, the more it is rigid and vulnerable and the greater are the efforts necessary to protect it and to maintain its productivity. As a rule, the replacement of a diverse biocenosis by a monoculture activates predators and parasites who live at the expense of the cultivated species and whose impact was previously limited. The expansion of open, disturbed habitats favours the proliferation of weeds (many of which were unwittingly introduced by western man himself, particularly from the New World). Such ecological mechanisms soon lead to difficulties in maintaining the artificial ecoysystems, and sometimes to total failures. To give only one Indian example, one may cite the case of the coffee plantations in Coorg. Coorg had been occupied by the British in 1834 and was still covered with dense evergreen forest or (to the east) thick jungle 20 years later. It was only after the advent of the European coffee planters that the large-scale felling of forest began. The first European plantation was started at Mercara in 1854. Land being cheap and profits substantial, a veritable rush developed during the following years. Thus 20,000 acres of dense forest were cleared in a little more than a decade. But within a few years, the coffee trees began to suffer from bug, leaf rot and leaf disease, and they became prey to a devastating pest, the borer. A commissioner was appointed in 1868 to investigate the ravages of this insect. The felling and burning of extensive areas of forest had destroyed a great deal of the surface soil. Then the practice of exhaustive weeding, designed to show a clean surface (a clear case of imported ethno-ecological prejudice), increased soil erosion. Forest destruction caused recurrent failures of drainage and also induced unforeseen imbalances in the fauna. All this largely explained the proliferation of the borer. An increasing number of estates were abandoned, especially after a commercial slump had set in because of competition from Brazilian coffee. And to crown it all, the abandoned estates were soon overgrown by lantana, a shrub introduced in 1863 by local British settlers for their gardens, which proliferated across the hill-sides in the form of a dense scrub.[17] This kind of ecological blunder, due to the under-estimation of the vulnerability of artificial monocultural ecosystems, occurred everywhere in the colonial tropics. The reafforestation with single species led to similar difficulties. Drastic changes in vegetation and mistaken agricultural practices such as total removal of grass-cover or down-slope drainage, had destructive effects on soils: erosion, leaching, laterisation. In 19th and early 20th century Sri Lanka for instance, deforestation by coffee, tea and rubber planters caused heavy soil erosion. Streams and rivers were increasingly blocked by alluvival deposits; they became unnavigable and subject to sudden flooding; peasant irrigation systems and rice fields on the valley floors became silted up. In 1931, when a soil erosion commission was finally set up, the director of the Kew Botanical Garden wrot to the government of Ceylon that "this island seems to be dissolving in water".[18]

I will only mention in passing the question of the extent to which deforestation affects climate, and especially rainfall patterns, as this question, which has been a subject of speculation for two centuries, is still controversial. But it is highly probable that the effect was not negligible. It was also injurious to the health of human populations, as in Sri Lanka, where recent research seems to show that the spread of plantations (for reasons which are still debated) has aggravated the incidence of endemic malaria.[19]

The European onslaught on the natural and especially forest resources of the colonies entailed the disruption, at least partial, of the mode of life of the indigenous societies of the areas concerned. It is the heavily unequal balance of power, and the establishment in the conquered countries of a modern type of centralised rule, which made possible the displacement or the forced adaptation of these societies, whose former relations with their natural environment were more or less brutally shattered. I would thus like to turn to the attitudes of the colonial states, particularly of the British colonial state in India, towards nature, its exploitation and conservation.

III
Colonial States and Nature Conservation

Exploitation/Protection

In the colonies, as a rule, the military administrations which took over immediately after conquest were gradually replaced by governmental structures inspired by those of the colonising countries. Whatever the official policy pronouncements, the conquered territories were generally organised empirically, according to immediate needs and without any very strong predetermined plan. Yet there was at the background the general conception of government implicit in the modern western liberal ideology, which is that government must be rational, autonomous and uniform. In this sense, the colonial governments represented to some extent attempts to adapt to exotic circumstances and conditions the processes of institutional development that the colonising nations had experienced a little earlier, or were experiencing at about the same time. The institutions of government created in the colonies were not, however, as in the home countries, the outcome of endogenous historical processes. These institutions had no roots in the culture of the colonised societies, and they often did violence to them. The establishment of state controls over the natural environment must be seen as part of these general processes of institutional growth. It went hand-in-hand with the extension of governmental structures and regulations into all domains of public life (or more exactly, with the expansion of the public domain and the creation of a new distinction between public and private). In India, for instance, the imposition of colonial state control over the forests during the second half of the 19th century was only one aspect of the all-round expansion of the modern state which characterised the post-Mutiny period of Indian history. Custom was being codified and ambitious modernising laws were passed. The colonial administrative network was growing and coming closer to the people. India was entering the statistical era, and it was being exhaustively surveyed, described and inventoried by way of maps, censuses, gazetteers and ethnographic compilations. Customary rights and practices in all walks of economic life were being listed, sifted, redefined and recorded for fiscal and judicial purposes. Road communications were being improved and the railway was casting its net over the subcontinent. In short, an attempt at the restructuring of Indian society according to the requirements of the modern state was under way. The seizure by the state of the natural resources it needed for its own reproduction and expansion was similarly on the agenda.

There are instances of royal or aristocratic monopolies over natural and especially forest resources in all great civilisations since very ancient times, and India is no exception to the rule. The prescriptions of the *Arthashastra* regarding the establishment of forest reserves for the protection of elephants, which were a basic component of the military strength of the Maurya sovereigns, are often cited in this regard, as well as the forest rules laid down by the Marathas in the 18th century to cater to the needs of state naval construction. What the ruling powers required everywhere for civil and military building as well as for their navies was high quality timber of large diameter, usually provided by species of slow growth, which had to be efficiently preserved by successive generations. This was the prime motive behind

Colbert's Forest Ordinance of 1669 in France, which organised forest reserves on the basis of growth cycles of 120 years. Forest (and game) were also very commonly protected to permit the proper accomplishment of an important ritual, the royal hunt, and of its more modest replicas at the level of lesser princes and local lords. The attempts of the ruling classes to control forest resources are thus in most areas a very old story.

What seems to have been lacking behind these efforts before the 18th century, as R Grove has shown, is an explicit theorisation of the finite character of the earthly stock of natural resources and of the vital need to organise its conservation.[20] The consciousness of the risks consequent on centuries of overuse of forest resources was however present in 17th century Japan when the Tokugawa rulers decided upon increasingly restrictive forest legislation to avert the impending scarcity of timber. The fact that Confucianism, which stresses the notion of harmony between nature and society, was then the dominant political ideology in Japan, may have contributed to the emergence of this policy.[21] Yet ecological problems of comparable magnitude in early modern China do not seem to have evoked the same kind of governmental response.[22] The genealogy of modern European conservationism both in Europe and in the colonies from the 17th to the 19th centuries is now known thanks to the work of R Grove.[23] It was strongly influenced by the realisation of the fragility of overexploited forest ecoysystems in several tropical islands colonised by the French or the English, combined with the preromantic idealisation of nature. In France, the rigorous forest legislation of the Revolution and the Napoleonic Empire completed and reinforced by the Forest Code of 1827, marked the end of the extensive utilisation of the forests by the peasants and the confining of agriculture within strictly circumscribed spatial limits. The French National School of Forestry was created at Nancy at about the same time (1824). Nature had then come to be perceived not only as a vulnerable provider of precious resources, but as a public heritage to be preserved. This conception arose simultaneously with the idea of the monumental or architectural heritage. The phrase 'historical monument' was coined in the early 19th century.[24] Both the vestiges of the national past and the remnants of supposedly unspoilt nature, forests and marshlands, sites and landscapes, were now viewed as a legacy from past generations which was to be protected. Why were they 'sanctuarised' in this way? Apparently mainly because they were part and parcel of the collective cultural identity of the people, of its common history, symbols of a beautiful or glorious past, the memory of which had to be protected as a base of national unity. In any case, whatever the ideological content of the new conservationism, it was clearly directed *against* the local populations, and especially against the peasants. Their customary rights of user and the depredations of their cattle were considered from then on as the major threat to the remaining forest areas.

It is no matter for surprise that these conservationist ideas were introduced in the 19th and early 20th centuries in many areas of the tropical world in the wake of European colonial expansion, though generally with more exclusively utilitarian aims and at times considerable delays. The expansion of state control over nature was in fact much easier there because of the absolute character of colonial rule. However, one should not overlook the fact that official policies were only partially effective. There were frequent variations in official policy options. There were contradictory pressures from the non-official European settler communities. There was the chronic dearth of financial and human resources in a domain that was long considered of secondary importance. There was the lack of scientific and technical expertise. There were the numberless difficulties of policy implementation. And, last but not least, there was the fear of social disorders. In spite of considerable variations in chronology and emphasis from colony to colony, the overall line of development was more or less the same everywhere. First, natural resources were exploited in a virtually uncontrolled fashion by the newcomers. Then the colonial authorities would begin to protect them for their own use. Finally, the expanding modern state would increasingly take over the management and exploitation of these resources, while conservationist imperatives began to find a place in official policies.

The protection of nature in the colonies appears to have been mostly limited to the minimum required for the satisfaction of the states' needs for biomass. Early prohibitions on felling were made partly under pressure from the navies, for which the colonial forests were precious suppliers of timber for shipbuilding. Such was the case in the Netherlands Indies in the 18th century, as well as in British India at the beginning of the 19th century (after American independence had stopped the timber supply from North America), in New Zealand a little later, and again in French Indochina in the 1860s. South Africa's 'Forest and Herbage Preservation Act' dates from 1859. It was one of the earliest of its kind. Dutch action in Indonesia was unusually early, with the first forest regulations appearing in Java as early as the 17th century and the first attempts at sylviculture in 1730. But these were only sporadic localised efforts, not an overall policy. Forest regulations in Indonesia kept changing at short intervals up to the end of the 19th century, and they aimed only at ensuring a steady supply of teak. In British India there is evidence of governmental interest in environmental questions at least from the 1840s. But here also the main motivation was the necessity to meet state timber requirements (especially for shipbuilding and later for railway construction), and this was the main consideration behind the famous Indian Forest Act of 1878.[25] In Ceylon on the other hand, the planters' lobby managed to block any serious conservationist attempt on the part of the government until the 20th century. This was even more the case in New Zealand, where although a forest law had been passed as early as 1874, the public authorities shared, in a more or less unacknowledged fashion, the basic objective of the settlers, which was to extend agriculture through forest clearance. In the French colonies, where forest management seems to have been much less strict and systematic than in the British ones, no serious consevationist measure appears to have been taken before the 20th century. The earliest forest reserves in Indochina date from after 1903. They only began to be created in French Africa from the 1920s onwards (although the first reports pointing out that they were needed date from 1900).

These matters often aroused the interest of public opinion in the colonised countries (mostly in European circles, at least to start with) from the end of the 19th century onwards. Colonial associations for the protection of nature appeared, which exerted pressure on the local authorities. The nationalist movements, it must be noted, were often suspicious of these bodies, and saw conservation as another ruse of the colonisers to alienate the local populations from their traditional natural resource bases. Official recognition of the gravity of the problem, in any case, sometimes took much longer to manifest. While in India the first effective measures of forest protection were taken towards the middle of the 19th century, in New Zealand nothing of the kind was done until after the first world war, and in French Indochina (where foresters had however, been giving warning reports on the topic since the end of the previous century) before 1930.

One of the major problems of forest policy everywhere was lack of funds. Forest services were for very long periods mere extension of departments of agriculture or revenue, and only gained independent departmental status much later. The forest department of British India, created in 1864, seems to have been the first of its kind, although Dutch initiatives in the same direction, but not followed up, had shown the way in Java. Before and even after the creation of these departments, the responsibility for the exploitation of the forests was often left to private enterprise, since the governments

did not have the means or even the desire to take it up themselves. The French forest services in Africa and Indochina all date from the 20th century, and that of New Zealand from 1920. One of the conditions imposed on these services was that they should be self-supporting and provide surplus revenue to the state. In India, for example, it is well known that the principle of British imperial policy was that the country had to pay for its own management. When the creation of the forest department was under discussion in the 1860s, one of the main objections that were raised against Brandis, the then inspector general of forests, was that a forest department was bound to be unprofitable and would be a burden on the colony's exchequer. After the creation of the forest department the suspicion remained, and the department always had to prove conclusively that it was making profits. Thus the forest departments had to put their main emphasis on commercial exploitation of the forests rather than on maintenance and improvement. The number of professional foresters was everywhere very limited. Both the administrative staff and the subordinate forest staff (especially forest guards) were few in number and for a long time training was inadequate. To cite an Indian example: in Coorg around 1890 there was only one qualified forester for 850 square miles of reserved and protected forests. In north Kanara district in 1882, there was one forest guard for every 60 square miles of reserved and protected forests. The foresters, as a rule, rarely had time and money to spend on research, and they complained bitterly of this. For both forest conservation and sylviculture, they mostly proceeded empirically, by imitation or by trial and error, with frequent failures. The conservator of forests for Madras Central Circle, in the evidence which he laid before the Indian industrial commission of 1917, declared that "the forest department in the Madras presidency is so seriously undermanned that it is quite impossible for any of its officers to engage in serious research work", that "the government is content to keep it in a constant state of struggling inefficiency", and that "there seems to be a deeply rooted objection on the part of government to permit the growth of the forest organisation in this country to keep pace with the times".[26]

The protection of animal life followed far behind forest conservation. Hunting regulations in the 19th century were only arrangements to maintain monopolies, similar to those imposed on their lands by the local rulers before the colonial era. In British India these regulations weighed mainly on tribal groups who hunted for subsistence, while the 'shikar', a European pastime, was allowed to thrive (as it did in the princely states). These game laws, it must be added, were widely evaded by the local people. It is, however, the Forest Act of 1878 which instituted closed hunting seasons and which made hunting permits compulsory. The first truly conservationist acts passed for the protection of endangered species date from the 1920s in Indonesia and the French African colonies. Overall, in actual official practice, the protection of nature, in the strong sense of maintaining sanctuaries, is a recent phenomenon. The first wildlife sanctuary and the first national park were created in India during the last 20 years of colonial rule (while there are today some 70 national parks and more than 400 sanctuaries covering 4.5 per cent of the total geographical area of the country). Throughout the larger part of the colonial period, conservation of the natural heritage everywhere aimed primarily at ensuring a permanent supply of forest products to governments and commerce.

Rationalisation

Wherever state control over colonial natural resources expanded for the purpose of organised exploitation, it did so at the expense of local societies whose mode of subsistence was closely dependent on the natural resources in question and only marginally on the market. From the productivist point of view of modern management, the indigenous cultivator with his customary rights of usage, his manifold uses of biodiversity, his small-scale, erratic clearings, as well as the nomadic pastoralist with his destructive herds, represented a hindrance which had to be done away with somehow or other. The European coloniser had been brought up in an old foodgrain civilisation and was ill-prepared to understand the modes of subsistence prevalent in tropical rainforest environments. He carried with him the archetypal opposition of the Latin agronomists between *ager* and *saltus*, which was deeply ingrained in the European mind. In his view, civilised order was not a climax forest with humans living in symbiosis with it, no matter how knowledgeable and sophisticated this interaction might be, but the domestic order of cultivated fields, or a plantation of selected species, where yields are carefully monitored and the return of spontaneous vegetation efficiently prevented. The representation of space which accompanied the expansion of the colonial state was the modern conception of the administered space, where the central authority carries the same weight everywhere within fixed territorial boundaries, where rights of occupation and usage are clearly defined, where limits are clearly drawn. This vision of things cannot easily accommodate collective and unwritten customary rights, the uncontrolled complementarity between agriculture and open forest, the migratory habits of shifting cultivators and nomadic herdsmen. Last, states cannot function without revenues. Accordingly, productive activities must be taxed, and the exercise of individual rights over public resources such as the forest ought to be licensed, a practice which discourages wastage while producing income. Thus colonial states everywhere created from scratch vast domains of public forests by declaring all wood-covered areas without a certified owner to be government property. Then the social groups who derived all or part of their living from those forests on a customary basis were brought under strict control or displaced. In such cases, of course, the recourse to legal concepts such as 'general interest' or 'public good' was particularly convenient.

Nothing typifies this attitude better than the frequent repression of shifting cultivation. This activity more than any other felt the brunt of the ethnocentric ecological prejudices of the colonisers, because it combined all the features which the modern ideology condemns. The shifting cultivators felled and burned substantial areas of forest for the sake, it seemed, of a few poor crops of low yield and nutritive value. They had no established rights in the land they cultivated. They led an unsettled and mobile mode fo life and paid little or no taxes. And their activity seemed incompatible with any organised policy of forest conservation. Nomadic pastoralism was criticised along similar lines. It is usually the alleged destructiveness of nomadic herding, its low profitability and the mobility and indiscipline of the social groups practising it which were incriminated. The policy of the colonial administrations, where they were bent on suppressing shifting cultivation or restricting it, consisted in limiting the forest areas where the clearings were allowed, in reserving the activity to strictly defined social categories, in subjecting the grant of permits to the performance of labour prestations for the forest departments, and finally in encouraging the populations concerned to adopt sedentary ways of life as settled cultivators or agricultural labourers.

It is however important not to over-simplify colonial attitudes. In fact, they were neither uniform nor unchanging. By and large, the dominant trends were more or less similar all over the colonial world. But the timing, the thoroughness, the modalities of the policies varied considerably. These policies were rarely adopted without discussions, which at times developed into vehement and protracted controversies, as was the case in India. In addition, the rules were often imprecise, the policy options varied, the latitude of evaluation and initiative left to the local administrators often considerable. In India, the discouragement of shifting cultivation often began at the initiative of the district authorities, before the ques-

tion, when it assumed importance, was submitted to the provincial authorities and by them to the central government. At that level, it gave rise to some heated debate during the last third of the 19th century. There were at that time among the officials many severe critics of the forest department, who indicted the ignorant and unsympathetic forest officers for the sufferings of the dispossessed hill people. But they were eventually defeated by the advocates of the 'cilvilising mission' of the colonial state (implicitly defined, according to the liberal conception, as the guardian of the general interest – which in the colonial context is not, to say the least, self-evident.)

On a more general level, the question of whether management of the forests of India should be taken over entirely by the state or carried out through community forestry and joint management between the state and villagers was subject to wide debate. Brandis, the first inspector general of forests, consistently (but eventually unsuccessfully) advocated the constitution of village forests of the kind that existed in his native country, Germany. The government of the Madras presidency, which was also in favour of community forest management, had similarly to give in for the sake of the superior interests of the imperial government (thus the Madras Forest Act of 1882 followed the Indian Forest Act of 1878 in all essentials).[27] The same debate was going on in France at about the same time between a small school of non-conformist foresters around Frederic Le Play, who refused the exclusion of the local communities from forest management, and the dominant tendency in favour of state monopoly over forest management. One authorised spokesman of state forestry (Berger) summed up in these terms the official thinking in 1865: "The state alone, which does not die, can be concerned about the future of society and assume the task of raising for it these great plants which take centuries to grow."[28] The terms of this old debate have of course become very relevant again in India today thanks to the rise of social ecology, to the work of NGOs in this direction all over the country, and to the ongoing experiments in participatory forest management conducted first in West Bengal and then in various other states with the active support of the forest departments. But in the colonised world, the state always had the last word.

Holding Out

There was one limitation, however, which the colonial administrations could not totally ignore, which was the level of tolerance of the local populations. The social classes most affected by the regulations concerning the environment were often the poorest, the most vulnerable, the least able to pose a threat to the colonial governments: hunters-gatherers, shifting cultivators, nomadic pastoralists, poor peasants to whom the supplementary resources provided by the forest were indispensable. In the remote areas where the forest reserves were established, these regulations could represent the first truly disruptive intrusion of the modern state and of capitalism in the subsistence economy of the local people. Their apparent initial resignation, the overwhelming inequality in the balance of power between them and the state, the lack of structured channels through which they could express their anger or distress, could often create at first in the minds of the colonisers the illusion that they were indifferent to the changes. But forest regulations provided a superlative field for "everyday forms of peasant resistance"[29] in the shape of myriads of petty offences which often passed undetected and which the forest establishments were incapable of preventing or punishing with any efficacy. Localised flare-ups of violence, especially against the underlings of the forest administrations, were not infrequent however, depending on the circumstances. Tribal rebellions and peasant uprisings have punctuated the history of the colonial period everywhere. The ecological element that was often present in these movements has mostly been eclipsed in the eyes of historians by more obvious economic, political or religious motives. But pre-modern resistance movements can never be explained simply by the initiating incident which sparks them off. They are the outcome of complex combinations of social and cultural tensions connected in various ways with the life and values of the social groups involved, in which the disturbance of their relationship with nature often played an important part. To the colonial administrations, however, these crises fell under the category of agrarian or social disorders, the repression of which was part of the maintenance of public order. They were not considered as a serious danger so long as they were not taken up and organised by the educated elites able to widen their range by using modern forms of mobilisation and political agitation.

The balance of forces, from this point of view, varied widely from one colony to another. In French west Africa, where the classification of forests was extremely unpopular, the government was nevertheless strong enough to proceed with the reservation of forests in the Senegal valley despite the violence of the protests.[30] In Sri Lanka, the effects of the development of plantation economy on Kandyan agriculture played a role in the 1848 rebellion, and the repression of shifting agriculture was occasionally slowed down by collective resistance, particularly from the end of the 19th century, when it became a pretext or a tool in the conflicts which opposed local lawyers and speculators to the colonial administration.[31] The political effectiveness of these acts of resistance was greatest when there was a conjunction of popular discontent with agitation organised by nationalist elites, as was the case in some regions in India at the time of the non-cooperation movement (1920-22), and on a much larger scale during the civil disobedience movement campaign of 1930-31, when movements which were labelled, in Congress parlance, as 'forest satyagrahas' (collective non-violent violations of forest regulations) erupted all over the country.[32] The spread of state control over the environment encountered, in this case, a real obstacle. But in a context like this, it is in fact the colonial situation itself which was being challenged, with ecological dispossession figuring as only one of many aspects of a domination which was globally called into question. India, whose national liberation movement was the earliest in the colonised world, was a precursor in this respect.[33]

IV
Conclusion

Before winding up, let me first restate my initial point. Strictly speaking, it would be inaccurate to characterise colonial periods uniformly as the most dramatic phases of ecological devastation for the countries concerned. The first official measures for protecting nature, whatever their motives and effectiveness, arose in these countries on the initiative of colonial governments. And independence has not put a stop anywhere to the destructive processes that were under way. On the contrary, they have accelerated. But it is nevertheless true that it was colonisation which in most cases initiated the processes from which all later developments originated. The newly independent states took over from the colonial states. The economic and political pressures from the developed world persisted everywhere after independence was acquired. Legislation, policies and administrative structures relating to the exploitation and management of natural resources were for the most part maintained. The disruption of the relationship between local societies and their natural resource bases has continued in the worldwide movement towards modernisation, which goes together practically everywhere with an unprecedented increase in the industrial demand for biomass arising from much higher rates of industrial growth, and of demographic pressure on the environment due to the population explosion. In post-independence India, the new ruling elite, supported by the business class, was committed to a resource-intensive state-subsidised pattern of industrialisation, the ecological cost of which was bound to be heavy. But at the time, this ecological trap

in post-war growth policies went largely unnoticed.

Thus the colonial phase of the history of tropical nature has to be set against the general background of the human history of nature. This is a history of continuous alterations and traumas and of continuous human responsiveness to those changing conditions. Human societies have shown and still show an almost limitless capability for situational adjustment. It would be erroneous to present the precolonial relationship between societies and their environment as a golden age of 'equilibrium' which colonial conquest disturbed or destroyed. Such a view, like the now obsolete 'tradition vs modernity' paradigm, assumes the normative operation in precolonial times of a system which in reality probably never existed, and which is in fact a culturalist construct, an ideal type meant to provide a baseline for the assessment (and indictment) of colonial change. We cannot concur in the mythology of the unspoilt, primeval, sacred wilderness with which indigenous societies supposedly lived in perfect balance from the dawn of history until the advent of Europe. This is one of the myths which lie at the base of that green fundamentalism which is known nowadays as 'deep ecology'. What we need, on the contrary, is a radical critique, with regard to this aspect, of capitalist expansionism, of which the colonisation of nature on a world scale has been one of the major objectives, and whose essential dynamics remain in operation, in a multipolar and greatly diversified context, throughout the formerly colonised world today.

Notes

[This paper is a revised version of the fifth Daniel Thorner Memorial Lecture given at the Madras Institute of Development Studies on March 16, 1993. A penultimate version has been presented at the Department of Sociology, University of Lund (Sweden) in April 1995]

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19 E Meyer, op cit.

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Rapid Growth – The Corporate Mission

Statement of Shri Hari Shankar Singhania, Chairman & Managing Director, JK Corp Limited at the 56th Annual General Meeting held on Monday, the 7th August 1995

I cordially welcome you to this 56th Annual General Meeting of the Company.

RAPID GROWTH — CORPORATE STRATEGY

Our strategy for accelerated growth is yielding results. During the year under review, the turnover rose to Rs. 560 Crores and Gross Profit to Rs.103 Crores. The Net Profit at Rs. 51.5 Crores registered an increase of over 57% over the previous year. Exports at Rs. 29.2 Crores were nearly two-and-a-half times higher.

The momentum of rapid growth is evident from the fact that in the last two years, Turnover has doubled, Gross Profit has grown 2.3 times and Net Profit 4.8 times. The Earnings per Share has risen to Rs.13.18 from Rs. 5.60 in 1992-93 on a substantially enhanced Equity Capital of Rs.44.88 Crores which is more than three times the Equity Capital in 1992-93. The dividend to shareholders has gone up to Rs.11.79 crores in 1994-95 from Rs 3.22 Crores in 1992-93. Shareholders Funds at Rs.677 Crores have grown by two and-a-half times in last two years.

All the businesses in which the Company is engaged, viz: Paper, Cement, Polyester and Magnetic Tape are sectors of high growth and our strategy is to grow rapidly in these areas.

New capacities in Paper, Cement and Polyester Divisions involving an investment of nearly Rs.500 Crores were commissioned during the year under review. These have started yielding results. The Gross Profit during the first quarter of the current year is higher by 40% over the corresponding period of the previous year.

Further investments for increase in capacities and modernisation in the various Divisions amounting to Rs.700 Crores are on hand. These expansions would substantially increase the turnover and profit of the Company during the coming years.

HIGHLIGHTS

- **During 1994-95**
  - **Turnover rose to Rs.560 Crores and Gross Profit to Rs.103 Crores.**
  - **Net Profit at Rs.51.51 Crores was up by over 57%.**
- **In the last two years**
  - **Turnover doubled, Gross Profit grew 2.3 times and Net Profit 4.8 times.**
  - **EPS rose to Rs.13.18 from Rs. 5.60 in 1992-93 on three times enhanced capital.**
- **New capacities in Paper, Cement and Polyester Divisions at an investment of Rs. 500 Crores commissioned during the year.**
- **Additional investments, for increase in capacities and modernisation, in various Divisions of Rs. 700 Crores on hand.**
- **Gross Profit in the first quarter of the current year increased by 40% over the corresponding period of the previous year.**
- **All Divisions of the Company accredited with ISO 9000 Certification.**

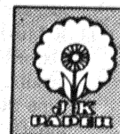
GDR ISSUE

During the year under review, the Company made a GDR Issue of 55 million US dollars successfully. The GDRs are listed on the London Stock Exchange.

QUALITY RECOGNITION

A significant achievement of the year was that the Company received ISO 9000 Certification in respect of all its Divisions and products endorsing the importance the Company attaches to Total Quality Standards and Systems. JK Paper is the first Paper Mill in India to receive ISO 9001 certification. Lakshmi Cement has received ISO 9002 certification, and JK Magnetics is the first and only unit in the industry in India to receive ISO 9002. As reported last year, Orissa Synthetics was the first unit in the Synthetic Fibre Industry to receive ISO 9002 for its entire range of products.

I consider this recognition of Quality Management as a tribute to the credo of excellence enunciated by the founding father of the Company, the Late Lala Lakshmipat Singhania. I also acknowledge the dedication to quality standards of the employees at all levels leading to this international recognition. I am confident that all in the Company would strive to maintain and improve upon these standards.



PAPER AND BOARD

JK Paper, true to its tradition, operated at more than 100 per cent capacity utilisation. Our products continued to enjoy excellent reputation for high quality. 70 per cent of our production is of high value added specialty papers and in several varieties we continue to maintain market leadership with strong brand image. A new thrust resulted in trebling of exports.

During the year under review, a new Specialty Paper Machine was commissioned increasing the manufacturing capacity to 75,500 tpa from 60,000 tpa. Further, technological upgradation undertaken would improve brightness and quality of paper, giving us a competitive edge.

A state-of-the-art new Pulp Mill of 1,00,000 tpa capacity being installed would increase pulp capacity, reduce cost of production, and improve the quality of pulp and paper. This would also reduce imports of costly high quality pulp.

The Paper manufacturing capacity is being expanded further to 1,25,000 tpa by upgradation of some of the existing paper machines and installation of a new one. These schemes would cost around Rs 450 crores.

The per capita consumption of paper in India at 3.2 kgs is far below not only the world average of 45.6 kgs, but even 11 kgs of Indonesia and 14 kgs of China. Paper consumption in India is thus bound to rise rapidly. In this context, it is necessary that India takes urgent steps to augment its forest resources. The need for urgently allowing industrial plantations and general afforestation programmes is therefore paramount. Industrial plantations would not only make available requisite pulp wood for the growing requirements of Paper Industry but also add to the green cover. Since these plantations have long gestation, the Government of India must immediately allow industrial plantations of renewable pulp wood. Otherwise, the consequences would be heavy imports of pulp and paper at enormous cost.

CEMENT

The Plant operated at near 100% capacity utilisation of the installed capacity. Lakshmi Cement, with its rigid quality parameters, continues to be the brand leader. Over 70% of the Company's production is of the value added 43 Grade.

Plans are on hand to produce 53 Grade Cement which is a higher value added product.

The increasing thrust on roads building, development of ports, creation of new capacities of power generation and other infrastructural projects and house building activity, is expected to result in accelerated demand growth for Cement. The growth rate of 8% p.a. during 1994-95 is expected to cross 10% in the next five years.

The Rs 400 Crores new Cement Plant of 9 lac tonnes capacity was commissioned in March 1995 increasing the installed capacity of Lakshmi Cement to 1.5 million tpa. Production on this unit is stabilising. The capacity of Cement is being further expanded to 2 million tpa by installing another unit at Lakshmi Cement with an investment outlay of Rs 210 Crores.

I am happy that the new capacities created in the Company, and in its synergy undertaking, JK Udaipur Udyog Limited, will be available at a time when demand growth of cement is on fast track.

POLYESTER FIBRE

The operations of the unit were affected in the last quarter by the unforeseen strike which has since been called off and normalcy restored.

The Polyester industry has been passing through a difficult phase due to shortage of DMT and PTA in international markets and consequent steep rise in prices. The prices of PSF and POY could not rise commensurately. There are signs of improvement in the scenario now.

The demand for Polyester Fibre in India increased five-fold during the period 1984-93. The 20% growth registered in 1993 is expected to continue mainly on account of the high preference of masses for cheaper and more durable fabrics, limited availability and high prices of cotton and the thrust on export of cotton and synthetic textiles.

On completion of part of the balancing scheme, the PSF/POY capacity of Orissa Synthetics increased from 23,000 to 28,200 tpa by September 1994. It would further increase to 38,000 tpa by March 1996 on completion of the full scheme.

MAGNETIC TAPE

Sales were higher by 27%. Magnetic Tape is a high growth sector, due to the electronic boom with expanding middle class consumers. The quality of audio magnetic tape manufactured by JK Magnetics is by far the best in the country and compares favourably with the reputed international brands. Market leader in audio pancake market, JK Magnetics is the preferred brand of leading music recording companies in India. A major breakthrough has been made in exports, with higher volumes to follow.

SYNERGY UNDERTAKINGS

Central Pulp Mills Ltd. — *a challenging task accomplished*

Last year, I had reported to you of the commissioning of 45,000 tpa capacity paper plant in Central Pulp Mills Ltd. after renovation. I am glad to inform you that with the technical and managerial inputs given by JK Corp Ltd., the two Paper Machines of CPM are operating at full capacity and CPM has turned the corner. Value added quality paper matching the market requirements is now being produced and even exported by this company — a feat accomplished in record time.

J.K. Udaipur Udyog Ltd. (JKUUL)

With the technical and managerial assistance of your Company, JKUUL has already achieved 9 lac tpa capacity and plans are afoot to increase the same to 1 million tpa. The turnaround of this unit was achieved during the first full year of operations. Substantial part of the Cement manufactured by JKUUL is of the value added 43 Grade.

REMOVE CONSTRAINTS ON BUSINESS RESTRUCTURING

The economic reforms initiated in 1991 have borne fruit. The direct results are evident in the large flows of foreign investment, increased industrial activity, growth in imports and exports, and increasing and welcome competition in the market place.

With the opening of the Indian economy, and integrating it with that of the global, the Indian corporate sector is faced with a dual challenge. On the one hand, there are new and vast opportunities, and on the other, they have to operate in an intensely competitive environment. This would require the Indian companies to formulate strategies to enhance productivity, efficiency and achieve economies of scale, in addition to induction of modern technology. Large amounts of capital would have to be raised. This would necessitate restructuring of business, flexibility and speed in decision making. It is unfortunate that even after four years of liberalisation, there still exist considerable constraints in regard to mergers, demergers, investments and loans, etc. The much talked about amendments to company law have yet to see the light of the day. Several suggestions including allowing non-voting shares, and buy-back of shares by companies are still to be accepted, although they are in vogue in a number of countries. I feel these measures, so very necessary to empower Indian corporate sector to play its due role in the rapid development of our economy, brook no further delay.

ACKNOWLEDGEMENTS

I acknowledge the continuous co-operation and support given to the Company by the Financial Institutions, Banks, Government authorities, Shareholders, GDR holders, Distributors, Dealers and last but not the least, the Customers.

Thank you.

This does not purport to be a report of the proceedings of the Annual General Meeting.

JKCORP LIMITED

Our future is in demand

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