

PROMISE OF MODERNITY, ANTINOMIES OF DEVELOPMENT

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By the 1880s the colonial state in India embarked on one of its grandest projects of social engineering. It proceeded to concretize its dream of creating an ideal agrarian space within the colony. From the beginning of colonial rule, in Punjab and elsewhere, colonial officials were driven by a desire to improve landscapes and modernize agrarian spaces, even as they sought to maximize revenue returns. But they found it impossible to concretize their visions in practice, to transform images into realities. Operating on already inscribed spaces, faced with deeply entrenched social structures, confronted with a maze of customs and practices, and innumerable ecological variations, they had to repeatedly backtrack, rework their conceptions and modify their vision. They had to think of policies that were viable, feasible, and workable within given contexts. The imagined ideal was persistently disturbed by the politics of the possible.

Colonizers everywhere search for open spaces that would allow possibilities of unconstrained transformation. The *bars* (pastoral highlands) beyond the Sutlej, it seemed, was such a space. On this vast scrubland, there were no valuable trees, no populous village settlements, no peasant cultivating his field, no wheat piled up on threshing floors, no carts carrying local produce to the market. The nomadic pastoralists were the only humans visible, traversing the landscape with their camels and herds, some living on the *bars* through the year, others moving between the riverine tracts and the highlands.¹ The highlands were dry, with water levels sinking to over 80 feet below the surface. From the earliest days of colonial rule, British officials traversing the region had despaired at the landscape of desolation; but at the same time fantasized about reordering this ‘wilderness’ of their imagination.² By the early 1880s the scrublands had been taken over, reclassified as *rakh* (waste), mapped, surveyed and bounded. In the subsequent decades, this space was subject to an even more dramatic process of change.

The first canal colony project was started in Multan in 1886.³ Over the next 50 years a vast network of perennial canals spread over the highlands on the interfluves between Sutlej and Jhelum. The average annual area irrigated through perennial canals boomed:

from around 943, 000 acres in the five years ending 1985-86, to 4,123,500 acres by the end of the century. ⁴ Nine colonies were settled around the canals. In the Chenab colony, settled between 1892 and 1905, over 1.8 million acres were allotted in grants.⁵ The area distributed in the other colonies was considerably smaller: in Jhelum Colony about 540, 000 acres, in Lower Bari Doab about 900, 000 acres,⁶ in Nili Bar 800, 000 acres. But together these colonies carved up over 4 million acres of pastoral land for agrarian settlement. ⁷

Colonial officials hoped to mould this space in accordance with their dream, develop it through science, capital and imperial imagination. They saw themselves working on a landscape empty of people, unencumbered by the past, unfettered by social rigidities. The high plateau was dry but the soil was good in many places. Once irrigation became available, Punjab officials were convinced, the land could be cleared, settled and ordered: pioneer settlers brought in from the densely populated and intensively cultivated tracts of Punjab where the limits of agrarian expansion had been reached. A new society could be founded with the immigrants, the industrious peasants of Central Punjab settled in new colonies, a new regime of customs introduced, villages and markets planned, valuable commercial crops produced. A desolate landscape could thus be covered with cultivating fields, made productive. In the Canal Colonies, it was assumed, the limits of the possible itself could be redefined.

As the process of colonization proceeded, this fantasy of freedom from constraint, this imperial desire to create a colonial agrarian society from above unhindered by local rigidities, gradually crumbled. The pastoral landscape was transformed, but the agrarian conquest could not proceed undisturbed, in exact accordance with imperial plans. Embedded landscapes are never erased with ease, emptied of people, re-inscribed without problem. Spaces are not as malleable as modernists minds imagine, the nomads were not as docile as colonial officials desired. The colonizing projects as they evolved were very different from the constitutive elements of the original idea. This essay will examine both the vision and experience of this agrarian colonization, and look at the relationship between the founding plan and the executed projects. It will explore how spaces become

sites of conflict and how the specific mode of their re-figuration is defined by this conflict. Through this exploration I will reflect on the different paths to agrarian conquest, and the different modes of colonial domination.

Canals and the science of empire

The construction of the canals was, in a sense, the founding act. The canal colonies were to develop around the canals; they were to derive their identity from the canals. Through the construction of the perennial canals, colonial officials sought to demonstrate their capacity to tame nature, transform wastes into productive landscapes, and create the basis of a new hydraulic order. The canals were to reveal the marvels of western science, and the power of western reason and rationality. They were to mark the transition from the past to the present, from backwardness to progress, from the age of primitive irrigation systems to the birth of the new. They were to announce the advent of modernity and civilization.

In the early years after annexation, Punjab officials were reluctant to directly undertake ambitious projects of irrigation. The potential for irrigation was widely recognized, and the need for irrigating the Bari Doab – the interfluves between Sutlej and Ravi - was forcefully emphasized. ‘No part of the new territory is so important, politically and socially,’ declared the Board of Administration. ‘In no Doab, is there so much high-land susceptible of culture; so many hands to work; so fine a population to be supported.’⁸ In the winter of 1849-50, Lieutenant Dyas was deputed to conduct ‘scientific investigations’ so that a working-plan for the irrigation of the Bari Doab could be developed. By the end of the season, officials claimed that the topography of the whole of Doab had been carefully mapped: level cross-sections were taken, the nature of the ground – its surface, its drainage, and its undulations- was ‘precisely ascertained’, and the capabilities of the existing canals were all carefully examined.⁹ Within a few years, the Punjab Administration boasted of having built a canal that was ‘second in India only to the great Ganges Canal and equal if not superior to the finest irrigation canals of Europe’.¹⁰

Yet the Board of Administration was wary of extending the scale of canal operations. Swamped by new proposals for ambitious irrigation schemes and apprehensive of the excessive enthusiasm of the Canal Engineers, the Board, in 1856, urged the need for caution:

the expediency of multiplying permanent Canals of magnitude is doubtful. On the one hand the outlay is vast, on the other the return is uncertain, until the means of exporting the surplus produce shall have been provided. Until this cardinal and crying want, namely, means of exportations shall have been supplied, a number of great Canals would be in advance of the need of the country. Let the new Barea Doab Canal be fairly tried; let effort for a Railway from Umritsar to Mooltan be made (the first measure will hardly be complete without the second); and in the meantime Inundation Canals of small size, but large numbers, will suffice.¹¹

Nervous about large outlays and unconvinced about secure returns, Punjab officials stalled new projects and talked of the immense worth of existing inundation systems. They wrote admiringly of the Great canals of Multan, started by the Pathan rulers and reconstructed under Sawan Mal, and of the value of the Derajat canals that irrigated the parched lands further west.¹² Initiated and supervised by local Chiefs and power-holders, these inundation canals were seemingly constructed without much expense and trouble to the native governments. Local people had combined not only to construct the canals – digging the channels, raising the embankments, and constructing bunds where necessary – but also to maintain them, contributing their labour every year to clear the silt. Indeed if the local people could sustain their own irrigation systems, officials reasoned, then why should the Government intervene? ‘In such cases, when the community displays so much aptitude for self-government,’ wrote Richard Temple, ‘the Board consider non-interference the best policy, while they would always be ready to afford any aid which might be solicited.’

By the 1870s colonial officials in different districts were actively extending the network of inundation canals.¹³ The policy was to initiate projects, minimize Government

expenditure, cajole and force the local inhabitants to build the canal and maintain it with their labour, but take over the control of the canal. Colonel Grey, as Commissioner of Ferozepur, got the cultivators on the left bank of the Sutlej to dig ten inundation canals without any pecuniary help from the Government.¹⁴ A decade later, while Commissioner of Hissar, Grey had three canals constructed. The total length of these canals was 600 miles and the area irrigated annually averaged about 160,000 acres. Initiated by the local government without any outlay from Imperial revenue, the canals were under the supervision of the Deputy Commissioner. The local government was to regulate the supply of water to the fields, ensure the labour contributions of each household towards the annual task of silt clearance, and mediate in disputes over water.¹⁵ These canals were not classified in official documents as ‘state canals’: they were said to belong to the community and were to be maintained by them. What this meant was state control without state investment.

By the 1880s, however, the enthusiasm for the inundation canals began to fade as the perennial canals were increasingly projected as the embodiment of science, modernity, and progress. Even Grey, a great advocate of the inundation system, stated:

the days of inundation canals have passed. The rivers have been or are being tapped to a degree which much lowers the value of these works by depriving them of the early and later water which is so important to irrigation. The method was after all but a makeshift; it has had its day, and the time has come for arresting the summer floods by weirs, and for distributing them scientifically over the country to afford a duty of 200 acres to the cusac, instead of the 30 to 40 acres which is the average of inundation canals.¹⁶

The pronouncement was unambiguous: inundation canals had come up against the natural barriers to their expansion. A shift to perennial canals would help overcome this barrier. It would enlarge the total irrigable area, reduce wastage, and optimize utilities, with each cusac of water irrigating a bigger area.

The argument for perennial canals was thus framed within a discourse that played on a set of ideas and themes. There was, first, the idea that inundation canals epitomized wastage and perennial canals optimized utilities. The Deputy Commissioner of Dera Ghazi Khan recognized that an inadequate supply of river water made construction of perennial canals in the tract difficult, and inundation canals the only option. ‘However,’ he emphasized, ‘as frequently before urged by officers in charge of this district, very much of the water supply must be wasted, vast labour be year by year rendered fruitless, and the resources of the country remain in a great measure undeveloped, until a scientific system of irrigation, is applied to the river, and the water supply regulated at pleasure, and distributed as it might be in quality sufficient for the fertilization of the whole country...’¹⁷ This argument was official commonsense: inundation systems inevitably meant wastage – of natural resources, of labour, and of productive potential. In the monsoon, when the rivers were in full flow, vast quantities of water poured into the sea without being used. The water that inundated the fields at this time was also in excess of what was necessary. Only western science could optimize the use of resources, harness natural and human potential for the greatest common good.

Second: there was the question of variability, continuity and stability. Inundation canals were seasonal. They flowed between April and September and were dry in the winter. When the snow in the high mountains began to melt, the water level in the rivers rose, and the inundation canals began to flow. In the monsoon when the rivers swelled, the channels overflowed, the water spilled over the embankments and inundated the fields. The channels continued to flow for a while after the rains, providing valuable late water for the *kharif* (autumn harvest). But by end October they ran dry as the river water receded. This seasonality meant excess in one season and shortage in another. In monsoon there were frequent floods and breaches in the embankments, and in winter there was no water to raise a spring crop (*rabi*).

Beyond these seasonal fluctuations between winter and monsoon, there were the annual variations. The Irrigation Commission of 1901 estimated that in the last two decades of the nineteenth century the average area irrigated from the seven major inundation canals

of Punjab increased by about 19 per cent, from 896,296 to 1,069,606 acres,. But the annual figures actually varied enormously. In 1899-1900, for instance, it was only 859,981 acres while in the following year it went up to 1,357,699 acres, an increase of 58 per cent. The annual supply was linked to the level of snowfall, the movement of the barometer, the intensity of summer heat, and the level of precipitation during the monsoon. There was no way, so the officials felt, that this supply could be stabilized, the variations eliminated, and a continuous flow in the irrigation channels ensured.

To colonial officials such instabilities were deeply troubling. Their anxiety derived, first, from an anthropomorphic modernism. To be subject to seasonal rhythms was to be subject to nature, with all its fickleness and unreliability, its capriciousness and unpredictability. To be at the mercy of nature was a quality of the primitive. Modernity announced itself by asserting the human capacity to tame and regulate nature. The perennial canals, British officials believed, would enable them to overcome the dictates of nature, and allow them to reshape the landscape in the way they wanted. Inundation canals, on the other hand, embodied nature's constraints.

Third: official anxieties about seasonalities also revealed a bourgeois concern with broken cycles of production. Capitalism strives everywhere to establish a regime of continuous time that can ensure a stable line of production and a continuous flow of commodities. When the logic of capital gets naturalized, seasonalities in general appear intolerable, discontinuities cause worry. The fear of uncertainty also pointed to an obsession with fixity and stability that Utilitarianism had transformed into the doxa of nineteenth century Britain.¹⁸

Fourth: there was the question of production efficiency. Within the late nineteenth century colonial discourse, inundation canals came to represent a system of inefficient and slack cultivation. Consider the assessment of CM King, penned in 1901, about the canal lands of Ferozepur:

The type of cultivation on lands irrigated from inundation canals is necessarily a low one; the supply is limited to one period of the year, and is very difficult to control; the consequent flooding prevents the proper tilling of the ground, and if kharif crops are sown at all, they are sown after a very inefficient preparation of the soil. The results of the annual floodings and slack cultivation are very apparent all over the Bet, where all the canal irrigated tracts are burdened with heavy growths of weeds, and all areas subject to percolation are heavily impregnated with kallar,...Whilst the evils, as far as can be seen, are permanent and progressive, the extra crops raised by canal irrigation diminish year by year as the virgin soil gets worked out, and the position in the Bet is very similar to that of a man living on his capital. ¹⁹

It was as if all problems, all evils, flowed from the intrinsic quality of the inundation canal system. It nurtured slack cultivation, allowed weeds to spread, *kallar* (salinity) to accumulate, and unhealthy conditions to be reproduced. Introduction of the perennial system, it was repeatedly asserted, would solve all these problems. It would allow water supply to be controlled, flooding to be regulated, cultivation to be intensive, and productivity to develop. Inscribed with impermanence, associated with a discontinuous temporality, the beneficial effects of the inundation canals were seen as ephemeral and illusory. Only the perennial canals could bring permanent benefits, ensure continuous growth and progress.

Fifth: there was the issue of control and regulation. Modern perennial canals came to be associated with a regime of precision and regulation, estimation and survey. Before a canal was constructed precise surveys were to be made to determine soil types, gradients, depth of water, velocity of flow, volume of silting, estimated costs, and projected returns. Cross-sections were cut to decide on the point at which the weir was to be built and the headwork located. Survey reports were to be written up, schemes were to be proposed and reviewed, and then once the schemes were in operation, regular annual reports were to assess their working. Through the year the level of water was to be gauged, and its flow regulated from the head works. Inundation canals were neither

constructed with any such scientific surveys and careful planning, nor could their operation be as carefully and scientifically regulated.²⁰

Within the official mind, in many areas inundation canals were synonymous with poor planning, uncontrolled irrigation, water logging, *kallar*, *reh*, and sickness. In 1867 Adam Taylor, a Civil Surgeon, was asked to survey the villages around the Western Jumna Canal.²¹ In the tracts near the canal he found stagnant swamps with reeds, vegetation in abundance, a spring level near the surface, and widespread sickness. The connection between the inundation canals, marsh miasma and illness was undisputable, he asserted. The canal network and drainage lines were badly aligned. They intersected in such a way that the high banks of the channels blocked the natural drainage of the countryside and created swamps. Percolation from the elevated watercourses raised the ground water level and made drainage of the swamps difficult. Stagnant water on clayey tracts brought the salts to the surface, destroying the fertility of the soil and causing sickness. Some of the problems could of course be solved by lowering the canal level, realigning the channels, draining the swamps, and filling up the hollows and ditches. But could the fundamental engineering flaw of the 'native system' be overcome? Taylor was not entirely skeptical but other officials were unconvinced.²²

Jolted by the devastating famines of 1878-79, and persuaded by the Famine commission of 1880, Punjab officials gave up their ambiguity towards perennial canals. They had always seen the perennial canals as superior to the inundation canals, but had hesitated to construct them on any large scale. From the early 1880s new schemes were widely discussed and a series of ambitious projects undertaken. The earlier fiscal over-caution gave way to large outlays. By 1900 a total of Rs. 92,000,000 had been invested on the perennial canals in Punjab, and by 1926 over Rs. 158,600,000 were spent in just five of the major canal projects.²³ The total outlay on all the irrigation canals in 1926 amounted to about Rs 295,400,000. By the turn of the century it had become clear that the fear of low and uncertain returns from investment that had plagued the officials in the 1850s was unfounded. The original capital outlay in most of the canals was recouped with ease. The Lower Chenab Project, started in 1892, proved to be one of the most remunerative.

After the first twenty years it brought in an annual net revenue amounting to 35 to 50 per cent of the capital outlay.²⁴ This meant that the returns of two to three years paid for the capital costs, estimated in 1927 to be around Rs 35,900,000. In 1917, the accumulated outlay on all the ‘major works’ was Rs. 223,305,164 where as the accumulated net revenue was almost double Rs. 428,026,809.²⁵ By the twentieth century investment in irrigation had become an appealing financial proposition, and the possibility of high fiscal returns began to attract large investments for ambitious projects of perennial irrigation. The logic of imperial science could unfold without burdening the exchequer.

As imperial science marched forward – cutting through the *bar*, transforming the commons into cultivated fields – the older inundation systems went into decline. While the area irrigated by perennial canals expanded dramatically from the late-nineteenth century, the area under inundation canals stagnated, increasing less than 20 percent in the last two decades of the century.²⁶ Convinced of the superiority of the perennial canals, and assured of high returns, the Imperial government in the late-nineteenth century was willing to make large capital outlays on perennial canals. Inundation canals on the other hand were starved of funds. Expenditure on their construction and maintenance was to be met from whatever money could be spared from current revenue, which was rarely adequate even for the maintenance of existing works. The construction of the perennial canals, moreover, cut the flow of water in the rivers and squeezed the supply to the inundation canals.

The annual maintenance of the inundation canals had, in any case, become a general problem from the time the Canal Department began to supervise the clearance. Once *cher* – the collective labour that the community contributed in the pre-British period for the maintenance of collective utilities – was demanded by the state, and the amount of labour to be contributed by each irrigator was specified by the canal department, rather than regulated by the community, the system began to break down. Cultivators resisted working as *cher*, saw it as coercive, and refused to clear the silt. The state reacted by threatening to impose water rates wherever the irrigators were seen as obdurate.²⁷ When in the 1870s an *abiana* (water rate) was imposed at a uniform rate of Rs 5.5 per acre, in

addition to the demand for *cher* labour, angry zamindars refused to pay and petitioned against the unjust rates.²⁸ The consequent clashes between the local zamindars and the irrigation Department paralyzed the management of inundation systems.

The Irrigation Commission of 1901, meeting after the terrible famines years at the turn of the century, re-emphasized once again the protective value of inundation canals in the dry tracts of Punjab.²⁹ But the ideal agrarian order of British imagination was to be built around the perennial canals that were to stretch through the *bar*, transforming the pastoral tracts, displacing pastoralists, bringing the wilderness into the fold of ‘civilization’.

A regime of squares

From the beginning of British rule colonial officials had despaired at the absence of order within the agrarian landscape. Fields were of irregular shape, plots were splintered into innumerable scattered small fragments, and meandering village boundaries interlocked in complicated ways. In the canals colonies they could at last hope to impose their own sense of order.

Over the years, colonization became associated with a regime of squares. The entire landscape was plotted within a network of straight lines. In most places before the construction of the canals, the Canal Department carried out a complete survey of the whole *Bar*. A central base line was laid down in the middle of the Bar, and from this cross lines were run out at right angles on both sides at distances of 1100 feet. On these cross lines bricks were laid at intervals of 1100 feet. The water courses (*rajbahas*) were designed to run along the sides of the canal squares. This canal survey became the basis of the subsequent field survey on the square system. Permanent pillars were laid at the corner of each square of 27.7 acres, and these were subdivided into 25 equal squares.³⁰ The rectangular plot with straight lines – so important in modernist imagination – was designated as a *killa*. And the act of enclosing the commons, erecting the demarcating pillars, and subdividing the land into smaller squares came to be known as *killabandi*.³¹

Killabandi was seen as an act of mapping order onto space. The early reports on colonization describe with great enthusiasm the annual progress of *killabandi*. We are told of the innumerable obstacles faced, and the way each one was surmounted, as colonizing officers set about transforming the imperial vision into reality. Apprehensive of surveys, scared of a further loss of their rights over the bar, and certain that measurement meant taxes, the nomads inevitably resisted *killabandi*. In the existing proprietary villages too, fields had to be remapped, irregular boundaries straightened, ancestral shares transformed into neat rectangular fields, and fragmented plots consolidated into uniform large holdings. The task everywhere proved more difficult than was initially visualized. People resented the exchange of lands that was necessary to straighten the boundaries of villages and holdings, and they were reluctant to give up their ancient shares. In many places where *killabandi* was completed but irrigation water was yet to reach, people refused to extend cultivation into the waste.³² And *killa* marks usually disappeared wherever land was not brought under plough. In the low-lying *chahi* lands, irrigated by the wells, the old field boundaries were the well-runnels; and when canal officers insisted on demolishing these to construct the new boundaries, the Hithari cultivators refused to oblige.³³ To subdue recalcitrance and counter resistance, canal officers withheld supply of canal water and threatened to impose high taxes. If *killabandi* was essential for the agrarian conquest of the landscape, for the creation of an ideal order, all barriers to it had to be overcome.

Killabandi created a regime of squares - the cartographic grid for an ordered society. It was an image of order that drew upon a long western obsession with the straight line. Within this imagination, the straight line signified clarity, confidence, certainty; it reflected the power of man, the order of science. Squares and rectangles represented uniformity, homogeneity, regularity, symmetry, precision, and neatness – all essential elements of order. This visual imagination defined itself against an alternative aesthetic that celebrated the curved line, the irregularities of nature, the beauty of the unusual, the strange, an aesthetic that discovered in homogeneity, symmetry and uniformity only a deadening sameness, a numbing monotony.³⁴ Colonial officials sought to reconcile these

opposing aesthetic ideals, appreciating at the same time the beauty of nature and the rationality behind symmetry. They searched for the picturesque but recognized the need for precise measurements and ordering of space. A regime of squares, it was almost universally felt, would make governance easier and more efficient, the landscape more legible, calculation of revenue demand and crop output simpler. It would affirm the rationality of science as well as the power of the colonizers. The agrarian conquest was not only to extend the arable, but also to civilize the nomad, reorder space, and create the basis of an ideal agrarian society.

The map of the *abadi* (residential settlement) operated on the same logic. In contrast to the traditional villages with irregular boundaries, the colony settlements were planned within a grid of straight lines, with the chowk in the middle, the rows of houses arranged in a series of concentric squares, and the residences of lower castes located on the periphery. Unlike the older settlements which usually came up around wells, the model colony villages were planned around a market place. Two sets of broad roads ran through each *abadi* at right angles, with narrower parallel lanes connecting the main roads. Each house was numbered and its location pre-defined.

FIGURE OF A MODEL VILLAGE



The village was enclosed and bounded. It had one single entry point, one exit.³⁵ If this facilitated protection of the village, it equally made possible easy surveillance and policing of inhabitants.

In the long term the order of squares proved to be an elusive ideal. The *killa* (one-twenty-fifth part of a colony square – about 1.1 acres) did become a common measure of distance, but individual fields on the ground could not be demarcated through straight lines, separated into neat squares. Sales and mortgages of part holdings made it necessary to re-map field boundaries. In the process the regime of irregular plots reappeared, and the lines on the cadastral maps became messy. As for the model *abadis*, they were simpler to plan than settle. In most places, grantees claimed their right over the residential sites - extending their control over as much land as they could get - but they built their homesteads within their own individual cultivating squares. Location at the center of their large land holding, allowed easy access to the fields and management of cultivation. Dismayed officials first fretted about the intransigence of the grantees, and threatened to use punitive measures to enforce compliance to rules. Then, after the plague epidemic of 1907, they persuaded themselves to believe in the virtues of living in isolated houses. Co-residence in compacted settlements, they now declared, increased the possibility of a rapid spread of the epidemic. By 1911 they conceded to a change in the norm itself.

Enclosing the Fields

From the mid-nineteenth century, the pastoralist of the bar had found their movements restricted, and their grazing lands converted into government *rakhs*. Their ideas of territory and sovereignty were under question, and the authority of their chiefs was radically restructured. Now in the closing years of the century, they saw their land being sliced up, formed into squares and given over to people who descended in hordes from outside. ¹These outsiders cut down the scrub, grubbed up the roots and cleared the land; they ploughed the fields and planted crops. Then fences appeared, marking one field from another, barring the entry of ‘outsiders’. The pastoralists were told to stop their cattle straying into cultivated fields, trampling crops and destroying the harvest. Suddenly they

¹ The massive influx of peasants from the densely populated and intensively cultivated regions of Central Punjab dramatically transformed the demographic profile of the bar. In Lyallpur, one of the major colonies,

had become outsiders on land they saw as their own. The immigrants swarmed all over the land, outnumbered the locals, and asserted their monopoly over what till some years earlier had been the land of the nomads.

Stories of enclosures and displacements, however, rarely unfold without drama. In 1919, an exasperated Deputy Commissioner of Lyallpur, wrote to the Punjab Government in despair:

A village of Aklake Khurral aborigines exists here in the centre of a nest of villages of Arain immigrant colonists. This village, 9 headstrong janglis, for 4 to 5 months habitually pastured 3000 cattle on the crops of all neighbouring chaks. They never allowed the cattle to get to the pound, and rescued and rioted whenever the immigrant colonists made any seizures.³⁶

Every attempt at rescue led to violent confrontations. Many immigrant peasants died. A punitive post was set up in the village, but G F Montmorency, the Deputy Commissioner was skeptical of its efficacy. A system of roll calls could not tie the Khurrals to a life of innocence and order. Only a heavy communal fine, he believed, would stop such criminal villages from being a nuisance to the settled community.

As reports flowed in from different regions, it became clear that the story of the Kharral villages was re-enacted elsewhere in the Canal Colonies. Peasants from central Punjab, who had migrated to the colonies and begun cultivation, found their enclosed fields regularly invaded by cattle from neighbouring nomad settlements. Cattle rescues led to bloodshed, and official complaints provoked retribution. Cattle of the immigrant peasants were poisoned and harvested crops were burnt.³⁷ The police was as helpless as the peasants. Unable to check the cattle invasions, officials demanded that the turbulent nomads be classified as criminal tribe.³⁸ The severest actions had to be taken against

the population increased from 60,000 in 1891 to 1,167,000. This increase of over a million people was largely due to immigration.

those who impeded the progress of colonization, and subverted the foundation of a settled agrarian life in the Bars.

Cattle 'trespass' as a problem was of course not peculiar to the Canal Colonies. By the mid-nineteenth century, worried officials in different regions of India were debating the need for legislative interventions to stop the evil. The Cattle Trespass Act was passed in 1871, but the clamour for more effective and stringent measures continued for decades. The problem was particularly acute in places where pastoral lands were being taken over for plantations or settled agriculture. In these transitional landscapes, the new order of rights could not be established without the trauma of dispossession and without negotiations and conflict.

In 1883, the tea planters of Wynard, in Calicut, demanded a modification of the 1871 Act.³⁹ Trespassing cattle were destroying their plantations, they claimed, and without punitive measures the evil could not be controlled. The existing provisions of the Act were too mild and ineffective, fines were low and impounding of cattle was difficult. It was necessary, they felt, to enhance fines, punish attempted cattle rescues, brand all cattle over 18 months old, and shoot cattle straying into the plantations.

Sensitive to planter interests and keen on establishing the sanctity of the new regime of rights, GOI began a review of the Act. When in 1886 the planters petitioned once again, GOI asked local governments for reports on cattle trespass.⁴⁰ The need for some amendment was widely recognized, but local officials feared the social implications of harsh measures. With the expansion of the arable and the contraction of pastures, they conceded, cattle grazing had become a problem. In many areas, villages of pastoralists and peasants were honeycombed together. The boundaries between them were fuzzy and uncertain. The thoroughfares cut through villages, and the paths that the cattle had to take on their daily march to the grazing grounds ran past cultivated lands. It was difficult to prevent cattle straying on to grain fields, particularly when the fields were rarely fenced.⁴¹ In such a situation punitive action against unintentional straying could create needless anger against the administration.⁴²

Reports from many regions, in fact, suggested that it was the cattle owners who needed protection from routine harassment.⁴³ The Chief Commissioner of Assam asked for legal power to punish Planters and landholders for illegitimate seizures and illegal detentions of cattle.⁴⁴ They were reportedly seizing any cattle grazing near their land, and detaining the animals under their own charge instead of driving them to the official pound.⁴⁵ Graziers could not recover their cattle without paying the arbitrary amounts the planters demanded as compensation. Unless the planters were restrained, the Chief Commissioner seemed to say, the legitimacy of the legal regime itself would be subverted. True, trespass had to be controlled, and legitimate fines had to be imposed, only then could the new rights of property on common land be legally sanctified. But the efficacy of this legal regime would be undermined if publicly pronounced measures were persistently violated by planters and landholders, if illegal detentions and arbitrary and extortionate demands of the planters went unchecked.

The GOI was now caught in a bind. It was willing to deny the planters the penal powers they were clamouring for, but was reluctant to grant to local officials the authority to punish the planters under the Indian Penal Code.⁴⁶ A legal regime could not appear to be just unless it disciplined capital, unless it defined the constraints within which everyone had to operate, but could it be turned brutally against the planters? The GOI maneuvered its way out of the fix by refusing at the same time the demands of the planters and the Assam Chief Commissioner. After consultations with the Advocate General of Bengal and Madras, and a prolonged debate in the Legislative Department, the Assam Chief Commissioner was told that that his request could have no legal sanction.⁴⁷ And in 1888, the planters who had petitioned for greater punitive powers to stop trespass were informed by the GOI that their request for the amendment of the Trespass Act could not be undertaken.⁴⁸

Trespass was thus a category intimately connected to the new regime of rights, particularly in transitional zones. At one level, it expressed the state desire to settle population, demarcate fields, and define the spatial limits of mobility. It was a category

through which nomadism was to be restricted and criminalized. It signified a new process of territorialization - a spatialization of rights, the establishment of a regime in which spaces had to be tied to owners and property was to be deified. At another level, the outcry of the planters against trespass revealed the desire of capital to appropriate land as the exclusive sphere of its own operation, its refusal to tolerate any other claims on that land.

In the Canal Colonies, however, the problem of cattle trespass had acquired an added dimension. It was the sign of a war between the nomads and the immigrant colonists. The Kharral cattle did not simply stray into the fields of the Arian cultivators. They were herded in there. It was a deliberate and performative act, flamboyantly executed, in defiance of the new territorialization of space. Before British rule, the bar was under the control of different nomadic groups, each with their distinct areas of control - spaces within which the sovereignty of each group was exercised, and the hierarchy of power between the *rat* and the *jana* worked out. In the eighteenth century, the Bharwana Sials controlled the Chenab bar in the west, the Kharrals were the masters of the central bar, the Bhattis ruled the Gujranwala bar in the north-east, the Biloches were dominant in the south. Sial power was in decline by the early-nineteenth century, but the Kharrals had pushed further north, helped the Waghaz displace the Bhattis, and consolidated their power over the entire central bar. If the territory defined the limits of pastures, the limits of territory – always ambiguous and fluid - were continuously negotiated through the politics of grazing and raiding.

With British annexation, the bar was first taken over as Government waste, and then colonized and settled. Faced with the power of the colonial state, the nomadic chiefs were forced to accept their new position as *Tirni Guzars*, and collected the grazing tax (*tirni*) for the state. But they hated the loss of their power, their territory, their sovereignty, and their grazing lands. In 1857, the great Ravi tribes led by Ahmad Khan, a Kharral chief of Jhamra, rose in rebellion. When the Gugeira revolt was ultimately crushed by the British army, the rebels were cut to pieces, their villages burnt, their cattle tracked down in the

jungles and slaughtered. ⁴⁹ The civilizing state reenacted in macabre and perverse fashion the logic of tribal feuds. ⁵⁰

The rebellion failed but the war continued. It was a daily, unrelenting war against the new rules and new demarcation of spaces, against the new regime of canals and cultivated fields. Within the political culture of the nomads, outsiders could gain entry into a nomadic territory, either through a war, or by submitting to the chief who controlled that space. Otherwise the alien presence would subvert the very idea of territoriality. By the late- nineteenth century, the cultivated field had appeared as the symbol of the new regime, the visible marks of the radical re-territorialization of space. Hemmed in from all sides, surrounded by Arain villages, the Kharrals were now unable move freely between their summer and winters pastures, from the uplands to the low lands, or enter the jungles in times of drought when the open pastures withered. The killas that demarcated the fields and the rakhs, marked the lines the nomads could not cross without trespassing. In herding the cattle onto the cultivated fields, and allowing them to pasture on the crops, the Kharrals were asserting their right over the space. The Arains were seen as the usurpers, the outsiders, who had to be displaced. The illegitimacy of their claims had to be visibly and overtly challenged.

If cattle trespass emerged as a major crime within the colonial rule of property and signified a new territorialization of rights, its dramatic persistence reflected the effort of the nomads to question and renegotiate these new notions of rights, property and spatiality. This process of negotiation shaped not only the relations of the nomads with the migrant peasants and the state; it specified the meaning of property. The rights associated with property were not all embedded in the term itself, specified in the grants of land that were given to the colonists.

A new language of claims

The war against immigrant colonists continued through the colonial period. Their crops were ruined by invading herds, their harvests burnt by night, their fences demolished, their cattle poisoned with arsenic or carried away in large numbers, their villages regularly raided. Silent resistance, enacted off stage, in the anonymity of darkness, away from the eye of power, combined with collective actions, theatrically performed and provocatively executed. This was a war against the new ideas of territoriality and agrarian order, against the new notions of normality and legality, against the colonization of the *bars* by immigrant outsiders, against the new rule of property.

Yet at another level a different process was at work. By the early twentieth century we can hear a different language of negotiation, expressed in petitions to officials, articulated in local newspapers, and later by the 1920s, asserted on the floor of legislative assemblies. This was a language of rights that accepted the founding premises of the new order and demanded a space within it. It narrated painful stories of displacement, suffering and distress, and asked for justice. At times it defended the right of the pastoral groups to live in harmony with times past: be nomads, retain their control over their animals, if not their sovereignty within the spaces they saw as their territory. But more often, it claimed the right of the nomads to a life of dignity within the new set up. It protested not against colonization as such, but against the specific form in which the project was implemented. Hear Sayad Muhammad Khan of Montgomery during a 1929 debate on allotments of grants in the Nili Bar Colony:

I stick to my old principle that the sons of the soil should get precedence over others in all claims for grants. These are the people who are born and bred there, these are the people who had been earning their bread there and these are the people who have been living there from time immemorial, and now that land is made irrigable, is it fair, is it just and is it equitable that these sons of the soil should be turned out of their holdings, that they should be turned out of their hearths and homes and that they should be sent to some remoter corner, simply because they are not good cultivators? I ask is that a right

principle for the Government to follow. Is it right, Sir, that the sons of the soil should be turned out from this place for facilitating people who are much more advanced educationally, economically, and morally, to receive their share in the colonies.⁵¹

This is no defence of nomadic pastoral life. Mohammad Khan sees irrigation as progress, expansion of cultivation as desirable, peasants as superior to nomads in every way. But he questions the principles on which allotments were being granted. Using the language of equity and justice, he pleads for the claims of the ‘janglis’ within the new order, and recounts their anguish and misery. Operating through the discourse of indigeneity, he projects the nomads as sons of the soil – tracing their rights back into the mists of time, to the originary mythic moment of creation when the bars were supposedly settled. Aware that colonial laws generally recognized the rights of the original settlers, Muhammad Khan transforms the nomads into *abadkars* (those who settled the land – the original settlers) who, he claims, had cleared the land and settled on it. It was as if nomadism and mobility could not be the basis of any right over space. The critique of government policy was at the same time an affirmation of the colonial agrarian vision. This dialectic between critique and affirmation has a contradictory logic: it naturalizes as well as transforms what it affirms.

Much before this discourse of indigeneity acquired rhetorical power, colonization had become a site of negotiation. By the end of the nineteenth century, as cattle theft and cattle trespass became endemic, and cattle raids led to riots, it was clear that the policy of colonization required rethinking. The original colonization project was based on a radical hostility towards the nomads. They were seen as lazy, rebellious, violent, turbulent, imprudent, and thieving. With their dislike for cultivation, love for mobility, and proclivity for crime, it was said, they could not be pioneer colonists. They had to be displaced, watched and disciplined.

Gradually it was reluctantly admitted that the refusal to allot any land to the janglis was unjust and unfair: they had to be given grants even if they were bad cultivators. As the Settlement Officer of Chenab Colony said in 1903: ‘it was only a bare act of justice to

acknowledge their claims.’⁵² But once they were given grants, officials found it difficult to sustain the stereotypes through which they perceived the janglis. They soon recognized – with a sense of surprise – that the janglis were proving to be good colonists.⁵³ Their lands were carefully cultivated, their villages clean and well kept, and their animals properly groomed. After the success of the grants to the ‘janglis’ in the Chenab Colony, officials decided to replicate the experiment in the other colonies that were coming up. But stereotypes are tenacious. And when they become the foundation of a societal vision, they acquire an amazing resilience. Many officials grudgingly accepted the need to accommodate the demands of the nomads, but saw this only as a pragmatic move, necessary for peace and order. The anger of the rebellious nomads could not be controlled without conceding them a space within the new order. But could they be seen as either fine cultivators or good subjects?

Caught in a bind, officials both accepted and denied the claims of the ‘janglis’. When Muhammad Hussain declared that the indigenous population, the sons of the soil, had the first claim to the colony lands, the Financial Commissioner sneered at the idea:

I cannot accept the honourable member’s proposition that the local people have the first claim on the Crown waste that becomes available after colonization. The Government are the trustees of this underdeveloped wealth, which is the property of the province as a whole. The first consideration must be to get the land colonized by the best cultivators in the province. Local people in Montgomery and Multan, are not I am afraid particularly famous as good cultivators. In fact many of them are really not cultivators at all. However, as I have stated, the Government did recognize that it is only fair that the local people should have a certain proportion of land and as long ago as 1913 and 1914.⁵⁴

Craik could not entirely reject the claims of the janglis, but was unwilling to acknowledge them as ideal colonists. In a familiar move, he deployed the rhetoric of the greatest common good to deny the prerogatives of the indigenous population, and justify their displacement as a historically necessary act. If colonization was a collective good

and the peasants of central Punjab the ideal colonists, then dispossession of the janglis was stated to be unavoidable in the general interests of the population.

The developing contradiction within the colonizing project was even more evident in the way service grants were allotted. Worried by the shrinking supply of camels, horses and mules for the army, and the disappearance of pastures with the progress of irrigation, the colonial state had to rework the project of colonization. But how could the supplies of horses and camels be expanded without encouraging nomadic pastoralism? How could dry lands be irrigated and animal stock of the region reproduced at the same time? The idea of Service Grants proposed by the Horse Breeding Commission provided one seeming solution to the contradiction. It dissociated animal breeding from nomadism, tied breeders to land, linked animal husbandry to cultivation. In the Jhelum Colonies 402, 000 acres out of a total allocable area of 540, 000 acres were originally set aside as peasant grants.⁵⁵ At the suggestion of the Horse Breeding Commission of 1901, it was decided that this entire area, 74 per cent of the total, would be given out as Service Grant for horse breeding.⁵⁶ Each grantee would be required to cultivate the land as well as maintain a brood mare for every square (28 acres) allotted. The prior claim of the government over the animal stock was written into the condition of the grant.⁵⁷ Animal breeders just as much as cultivators had to be settled, confined within bounded governable spaces, subject to observation, survey, enumeration and control.

But who was to get the horse-breeding grant? Was it to be the pastoralist who proclaimed his will to settle and cultivate, or the peasant who agreed to maintain a brood mare? The gathering local anger against the influx of immigrants persuaded the state to create more space within the colony for west Punjab inhabitants. But it was still reluctant to open this space to the pastoral nomads. In the months of March, April and May 1902, J.H.R. Fraser, acting on behalf of the Colonizing Officer of Jhelum Canal, selected the first batch of 1000 for Horse Breeding grants. These grantees were all peasants from Shahpur, Gujrat and Gujranwala Districts. 'The peasant colonists so far selected,' reported Fraser later in the year, 'are nearly all men of the agricultural class, and care has been exercised in taking as far as possible only men who cultivate with their own hands.'⁵⁸ Peasants who

were willing to buy a mare were given land, though they neither had any experience with breeding nor any real desire to be breeders.⁵⁹ Yet, a year after the first round of allotment, the Colonizing Officer criticized the laxity with which the grantees had been selected and underlined the need to be even more vigilant about excluding the *janglis* from horse-breeding grants.⁶⁰ Within the ideal colony of colonial imagination, even horse breeding had to be the responsibility of settled peasants. The willingness of nomads to settle was always suspect.⁶¹

As the clamour for local grants intensified, Settlement Officers had to reduce the area of colony land that was granted to outsiders. But they still discriminated between landowners and nomads, excluding the *janglis* from the best canal lands, and favouring the big landowners of west Punjab for the Service Grants.⁶² Allotments to *Janglis* were usually smaller in size than those to landowners.⁶³ They were mostly located on poor quality land, in marginal areas, at a distance from the perennial canals, or at the end of the distributaries where water supply was erratic. The prime land on the perennial canals, near the head, was reserved for the ‘ideal colonists’ – the industrious and enterprising peasants from Central Punjab. The explosive implication of this politics of discrimination became apparent as the geography of grants came to overlap with the maps of social conflict.

Promise and betrayal:

Awal sain sachche nun saran

Ik qissa nawan aj joran

Bar agge lut khadi choran

thieves

Harn, gidar, chuhehan dian ghoran,

roamed

Sunjan jangal koi nahi raha,

Young Sahib diya mulk wasa.

First I will remember the true lord

I will tell a new tale today.

Of the old Bar that was the prey of

A tract where deer, jackals and rats

Now no barren jungle is left

Young Sahib has peopled the land.

Lyallpur da sun hal,

Ann jal da kithe sokal,

Nahr wahundi darwaze nal,

Drakht lawae pal-o-pal

Hor pae jamde sawe gha

Hear the tale of Lyallpur

Where grain and water abound

The canal runs by gateways

Trees have been planted in rows

And green grass comes sprouting up.

Young Sahib diya mulk wasa.

Young sahib has peopled the land.

These are lines from a long ballad of 43 stanzas that a blind poet, Kana, sung when Captain Popham Young, the Colonizing Officer of Chenab Colony, left Lyallpur in 1899.⁶⁴ The ballad tells the tale of a grand agrarian conquest. In a language suffused with a sense of wonder and fascination, it describes how a wild and desolate land was turned into a land of plenty, overflowing with grain, well supplied with water, adorned with trees. This extraordinary transformation was made possible only through the incredible and mythopoeic powers of the British. They created the colony, tamed the wilderness, and peopled the land: they turned the river aside, dug a canal that was straight as an arrow (*jin dita darya nun chirae, nahr kadhai siddhi tir ae*), built a weir, dammed the river, cleared the brushwood, mapped the Bar, measured the land, connected the place by railways and telegraph, established markets, and gave land to the Sikhs. They were not only heroic and mighty (*Angrez bahadur bhara bir ae*), but were capable of achieving the impossible. Like saints they could perform miracles: in a moment they could make the jungle disappear (*Eh Angrez aulia zarur, Sach man ozara na kur, Pal wich jangal kita dur*). They made no empty promises: they fulfilled them. They were true to their words (*ikko waida sachchi bat*).

The words of Kana were reassuring to colonial ears. We see them tirelessly reproduced in official records as evidence of ‘the impression that the colony made on native minds’.⁶⁵ The ballad reaffirmed the self-image of the colonizers as aggressive agents of progress, bringing nature into culture, domesticating the landscape through the application of science and reason. It celebrated both the unbelievable transformation in the canal colonies and the miraculous power of the British. The promise that Kana refers to is the promise of paradise that the British officials inevitably made while persuading the zamindars from the old districts to migrate to the colonies.

Was Kana capturing the universal experience of those who migrated to the colonies in search of paradise? Barely eight years after Captain Popham Young left, Lyallpur became the center of an intense social movement that called into question each term of

Kana's celebratory narrative of colonization. In December 1906 a Colonization Bill was introduced and hurriedly passed in the Punjab Legislative Council.⁶⁶ It was a bill that sought to amend the Punjab Colonization of Land Act 1893. When the Chenab Colony was being settled in the early 1890s, the British were keen to create an ideal agrarian setting free of absentee landlordism, minute plots, unirrigated fields, and unsanitary surroundings. Peasant grantees were given large holdings - 28 to 56 acres – but to ensure a measure of control over them, they were made crown tenants, and denied proprietary right. They were expected to live in the *abadi*, not in their farms, and maintain clean surroundings; they could not be absent for long periods or leave the colony without prior permission. Within some years the British discovered the difficulty of producing the landscape of their imagination. The colonists were building their homesteads within their farms, resisting living in the *abadi*, disappearing for long periods, and transferring their land in accordance with the customary practices of the old districts. When the Colonization Officer began confiscating grants and imposing fines for non-compliance of conditions, angry colonists grumbled and protested, often challenging his actions in court. The Colonization Act of 1906 was to extend the disciplinary reach of the state, legalize the regime of confiscation and fines, and introduce a set of new terms within the old agreements. The colonists were now required to practice primogeniture, plant trees on their farms and maintain a brood mare for supply to the government. The patriarchal power of the Colonization Officer was consolidated by making his actions sub-judice.

As the terms of the Bill came to be known anxious settlers began mobilizing opinion, organizing meetings, drafting memorials and petitioning officials against the Bill. Newspapers carried angry letters and articles - detailing the complaints of the settlers, narrating their experience - some written by colonists, others speaking on their behalf. Energetic mobilization was reflected in the growing numbers in the meetings. On 14 January 1907 about 300 zamindars from 24 villages met in Samundari Tehsil and resolved to draft a memorial that was to be submitted to the Legislative council.⁶⁷ Thirteen days later, on January 27, over 3000 zamindars assembled at Sangla protesting against the Bill.⁶⁸ At the grand meeting organized at Lyallpur on February 3 as many as 8000 zamindars of Chenab Canal collected.⁶⁹ The premise of the Arya Samaj, where the

meeting was held, overflowed, with people sitting on walls and roofs of buildings, clogging the streets and immobilizing traffic. Through the month, the Bar Zamindar Association carried on an intense campaign against the Bill, appealing to the jat sense of honour and justice, and stirring them to action. On 22 and 23 March, another mammoth meeting was held in Lyallpur in which over 9000 colonists gathered.⁷⁰ By the end of March the agitation spread from Chenab to Jhelum, with nationalist leaders like Lala Lajpat Rai and Ajit Singh addressing meetings, touring the rural areas, seeking to integrate the movement in the canal colonies into the wider anti-imperialist struggle.⁷¹

Two different discourses merged and separated in the language of protest that developed around the Colonization Bill. One was a discourse of morality and ethics. Worried and agitated zamindars repeatedly asked: how could the government dishonour its words, its promises, and its assurances? Till now, declared one polemicist, everyone agreed that the British government with all its problems was 'sure to stand firm to an agreement that it has once formally made'.⁷² This conviction was now rudely shaken. The government had gone back on its words and violated its commitments; it had subverted the premises of trust and faith. How could the zamindars now rely on the words of the government?

Beyond the moral politics of trust and good faith was the question of law. Drawing upon the legal discourse that colonial officials operated with, pedagogues and publicists, lawyers and zamindars, warned the government against violating assurances that had been not only verbally stated but also formally codified, embodied in agreements that were in fact like contracts.⁷³ Colonial officials, inspired by Benthamite ideals, had emphasized for long that fixed rules and codified laws were the necessary basis of security, stability and rational order, that publicly encoded, determinate and substantive rules allowed the formation of secure expectations and rational calculations. How could the colonial officials now forget these ideas? In a powerful critique of the Colonization Bill, Harbhajan Singh, a pleader, reminded the Government of the meaning of contract: once a contract was made and its conditions specified no one party was entitled 'to vary or modify it without the consent of the other party to it.'⁷⁴ On what basis then could the government arbitrarily and unilaterally change the terms of the colony grants with

retrospective effect, modifying the original conditions? The terms could be changed in future, when fresh grants were given on newly colonized lands – though even these terms ought not to be oppressive – but new clauses could not be written into the conditions of grants that had been already formalized.⁷⁵ This was a message forcefully underlined by the Bar Zamindar Association that met on 27 January:

In the opinion of this meeting the Government has no justification to alter, amend or add to the conditions of written agreements under which lands were granted in Colonies; and it is unworthy of Government to make even the slightest alteration in formal agreements entered into with the colonists.... Though the Government is at liberty to make any conditions for future grants of Government lands, yet it is desirable that the rules for future colonies be not stringent.⁷⁶

The argument was reiterated with polemical vigour in the pages of *Zamindar*, a newspaper that claimed to represent the opinions of the rural proprietary body. If the colonization Bill were to be introduced, declared *Zamindar*, then government assurances would no longer be believed and contracts would lose their sanctity. The promises of the government would be seen as part of a deliberate strategy of deception.⁷⁷ It would appear that the government had seduced the people with false promises, persuading them to migrate to an alien land, leave their families and ancestral homes, bear the expenses and the rigours of early colonization, and then changed the terms of settlement once the new colonies came up and the soil began to yield.⁷⁸ Such a deception, such a breach of faith, could only create a popular climate of distrust and suspicion, and destroy the authority of the Government.⁷⁹

As the theme of deception and bad faith was elaborated, the story of colonization was recast as a narrative of suffering and heroism, of promise and betrayal. When the Chenab Canal colony was being developed, 150 families from Batala in Gurdaspur were among the first migrants to reach Jhang. Louise Dane had personally told them ‘that the land they were going to would be found overflowing with milk and honey.’⁸⁰ They were all told that they would get large fields, plenty of water through the year, and well-connected

markets; taxes would be light, harvests secure and prosperity unbounded. When the migrants reached their destination in 1892 they could see only a vast landscape of aridity, a desolate scrubland covered with wild *farash*, *jand* and *lana*. Water channels were yet to be dug, and for many years the supply of water was erratic and inadequate. The rainfall was good in the first year and large tracts of the land were cleared and broken up; but by July a cholera epidemic spread and then a malignant fever prostrated the population. In 1891-92, a total of 7605 peasant grantees received their allotments, 6453 took possession, of these 914 left never to return.⁸¹ In the subsequent year, the story was similar: about 151, 865 acres were given out to peasant settlers, but 47,061 acres – about a third – remained unoccupied.⁸² Disappointed migrants, enervated by illness, frightened by the wilderness, unwilling to believe the words of colonizing officers, returned to the security of familiar surroundings in their home villages.

If we move from the Chenab to the Jhelum colony the story was no different. A migrant settler on the Jhelum Canal, recounting in 1910 the experience of early years of colonization, replayed the same theme of promise and betrayal. Before the grants were given, we are told, the Colonization Officer ‘so highly eulogized the quality of soil that the colonists thought that it was veritable Eldorado’.⁸³ Only later did the settlers realize that ‘the so-called fertile land was no better than a series of mounds of sand with patches of land of worthless quality.’ Disenchanted but undeterred, the pioneers cleared and ploughed the land, sparing no pain and hardship to bring the land under cultivation, converting the ‘once barren and desolate country ...into a luxuriantly verdant field.’⁸⁴ But the problems of the colonists continued. The water supply was so miserable and unpredictable that even in 1910 the standing wheat crops were drying up. Worst affected were the lands located at the tail end of the canal that rarely got any water. While crops withered and harvests failed revenue officers refused to remit revenue, and the state imposed new water rates, adding to the burden the colonists had to bear. In addition to the land revenue and the water rates the colonists were subjected to a range of levies: unpaid labour for digging channels and dredging canals, arbitrary fines for non-conformity with conditions of grants, tips for the patwari and the tahsildar.⁸⁵ As the protest against the Bill intensified, and the catalogue of suffering became ever longer, the canal colonies

were refigured as a place full of danger and trouble. We hear of the constant threat of natural calamities, the fear of wild animals and snakes, the unrelenting attacks of the ‘savage janglis’, the oppression of the sahkars, patwaris and lambardars.⁸⁶

Narratives of suffering fused with stories of heroism to doubly underline the injustice of British action in altering the terms of the settlement. The pioneer settlers, we are told, faced a hostile environment and suffered immense hardship, but they confronted all problems, worked hard - living in savage surroundings, amidst wild animals and *janglis* – to transform a wilderness into a productive landscape.⁸⁷ Many died, many lost links with their families, but the pioneers went ahead – undaunted – to create life in the colonies. It was as if the sacrifices and the heroism of the pioneers sanctified their relationship to the land, and made the original contracts doubly sacred. To alter those terms now, would be an act of betrayal and treachery.⁸⁸

The image of canal colonies that these narratives suggest is radically different from the one offered in Kana’s ballad. Kana deifies the British, imbues them with creativity, represents them as heroic agents of progress, resourceful, imaginative and ingenious; in the counter narrative, the settlers appear as the real heroes, the pioneers who tame the wilderness and make it productive with their industry, skill and courage. In one narrative, the landscape that the early settlers confront in the canal colonies is a land of promise, bearing all the marks of progress and development – canals, markets, railways, telegraph; in the other it is a landscape of savagery and desolation, of danger and death. In one story the British appear as benevolent, self-less, honest, and trustworthy, always honouring their words, caring about the people; in the other they are seen as violating their promises, dishonouring their commitments, manipulating the poor zamindars. The complicated and tortuous association between these contrary images continued to mediate the relationship between the zamindars and the British in the canal colonies.

The contrary voices that I refer to had one element in common. Both represented the mind of agrarian settlers, whose fortunes were linked to the expansion of the arable, the

colonization of the pastoral commons. Dispossessed of their pastures and displaced from their fields, most local inhabitants of the region – pastoralists and peasants - experienced the history of this colonization as a time of violence and repression

Antinomies of Development

In the *Canal Colonies Report* of 1933 we read the following account of what colonization had meant for the bar tracts:

The year has been one of real progress. The open spaces of the desert have everywhere been portioned out in meticulous rectangles; jungle trees have been felled, and the wandering camel-tracks of the waste have given place to the durable macadam of public roads, running for miles without a curve and without a gradient. The goat-herd's pipe and the quavering love-song of the camel men are mute, and in their place we hear the Klaxon of the motor-lorry and the folding harmonium of the peripatetic preacher. The reed encampments of the nomads, their jhoks and rahnas, open to sun and wind and clean as a dancing -floor, have been replaced by the midden-infested mud-houses of the central Punjab. The nomad himself, once free of the Bar and of his neighbour's cattle, has been pegged out, Prometheus like on his 25 killas, while the vultures of civilization bury their ravenous beaks in his vitals.

A passage that sets out to recount a story of progress ends up capturing the pathos of development. The official mind, captivated by the idea of settlement, convinced of the need for agrarian conquest, struggles to free itself from the allure of pastoral imagination. Caught in a bind, it vacillates between two worlds, two visions, which refuse to blend into any coherence. Settlement is celebrated and feared, seen as necessary as well as tragic; it was a civilizing process, but also signified disease and death. Nomadism was a thing of the past, part of a world that had to be transformed; but it was equally a metaphor for freedom. The nostalgia for open spaces and the silence of the desert, the romance of

the shepherd's flute and the camel man's love songs, contrast with the cacophony of modern urban spaces. The desire for rational ordering clashes with the Romantic's fear of monotony and repetitiveness.

Year after year the *Colonies Reports* had catalogued the progress in the colonies. They had talked of the problems of measurement and allotment of land, the hitches in distributing water, the difficulties in persuading the colonists to cultivate the crops they were contracted to produce, but they also narrated how these problems were all overcome to ensure development. Yet there were times when these narratives broke down, subverted by evidence that resisted explanation within the terms of these heroic teleologies of colonial achievements, questioned by anxious Imperial voices that expressed self doubt. For every official who congratulated the British for their success in creating the landscape of their imagination, there were others who filed reports on increased salinity in waterlogged canal areas, and the steady fragmentation of the land of the colonists.⁸⁹

Optimists had no problem stitching together a story of unmitigated progress. The creation of Canal Colonies did lead to a dramatic extension of the area under cultivation. Uncultivated pastoral tracts gave way to verdant fields. In Lyallpur district alone over 1,470,000 acres were brought under the plough by 1916-17. Almost the entire area, about 99 per cent, was irrigated; most of it watered by the new canals. By 1940, a total of ... irrigated acres were being cultivated in the five Canal Colonies put together. Officials could look around with satisfaction and see the irrigated fields covered with wheat in *rabi* (spring harvest) and cotton in *kharif* (autumn harvest). Since the 1860s Britain had been keen on reducing its crippling dependence on America for supplies of wheat and cotton. By the late-nineteenth century the expansion of acreage under these crops in India had come up against barriers, and officials desperately looked for 'virgin' lands that these crops could colonize. In the Canal Colonies they hoped to produce American Cotton and American wheat without being dependent on America. As Lyallpur developed, wheat came to occupy 77 per cent of the area under food-grains in 1904-05 and about 80 per cent in 1939-40.⁹⁰ By 1920-21 over 250, 690 acres in Lyallpur were under cotton,

accounting for about 15 per cent of the total cropped area, and by 1937-38 the acreage rose by 50 per cent, as cotton came to occupy over 25 per cent of the total area under cultivation. The line on the production graph does not dip even during the Great Depression. At a time when world market prices crashed, landowners and tenants expanded production to meet their cash requirements. And as exports shrunk, cotton production was reoriented to meet the demands of a growing internal market.

There were, however, disquieting facts that could not be easily incorporated within this story of progress. It is true that in the Canal Colonies there was a dramatic expansion of total output, and the long term average rates of growth here was higher than the central districts.(see Table) where arable expansion had reached its limits by the end of the nineteenth century. (See Table) But the figures do not allow us to make a neat contrast between the two zones: the Lyallpur rate is substantially lower than other Canal Colony tracts like Montgomery and not so different from some of the older districts, like Ludhiana and Gurdaspur. Moreover, when the annual rates of output growth are plotted on a graph we see a recurring picture. In the years immediately after colonization of a new tract, there was first a phase of growth, followed by stagnation and decline. In tracts like Lyallpur that were colonized in the late ninetieth century, rates of growth plateaued by the second decade of the twentieth century; whereas Montgomery and Multan, colonized between 1915 and 1940, were still showing high growth rates in the 1940s. Clearly growth in output was driven primarily by a horizontal expansion of the arable.⁹¹ Once this expansion reached its limit, growth of output slowed and ultimately stopped. In the post -1950 period therefore the rates of output growth in the Canal Colony areas slumped.

This picture is doubly confirmed when we look at the figures of productivity per acre. Yields in Canal Colonies were not unquestionably higher than the old agricultural districts of central Punjab. In 1916-17 Lyallpur and Montgomery in the Canal Colonies produced 160-175 lbs per acre of cleaned cotton, while in central Punjab Jullunder yielded 240 lbs and Ludhiana 160 lbs. The pattern had not changed in the subsequent decades. By 1937-38 Lyallpur and Montgomery cotton fields were yielding 220 lbs

whereas Ludhiana recorded 300 lbs and Jullunder 220 lbs. Wheat figures were no different. If Lyallpur in 1916-17 produced 1040 lbs of wheat per acre on canal irrigated lands, Jullunder produced 1,200 lbs on its *chahi* (well irrigated) lands.⁹² Two decades later the picture was very much the same: Lyallpur was yet to catch up with Jullunder.

A shift of focus from absolute yields to rates of productivity growth offers further insights into the antinomies of development. In most Canal Colonies, after the initial decades the rates of growth first slowed and then turned negative. Not till the 1940s did the lines of the graph turn upwards. Imperial science and capital could not create in the canal colonies a developmental regime powered by high levels of productivity.

What explains this seeming paradox? First: these trends in yield, I will argue, reaffirm the proposition I made in the earlier chapter about the relationship between decline of pastures and agricultural growth. When the permanent pastures of the bar were brought under the plough, converted into permanent fields, the soil contained high reserves of nitrogen, as is usual in all permanent pastures. This reserve could be tapped over long years to sustain fairly high levels of yield. The nitrogen fixed in pastureland, as we saw, has a very slow release rate. Bound up with organic compounds, it is released gradually as the compounds decompose over time. Continuous cultivation of the bar led to declining nitrogen levels and stagnation of yields. The effectivity of any additional nitrogen supply through farmyard manure depends on the existing stock of nitrogen in the soil. As nitrogen reserves dropped, larger quantities of manure were required to sustain existing levels of yield. In the Canal Colonies, it would appear, nitrogen levels were not continuously and adequately replenished. Available manure per unit of land was lower in the Canal colonies than in the older districts. (see Table)

Second: the official dream of high yields on Canal Colony lands was based on false assumptions. Officials thought that when industrious peasants were granted large holdings and supplied with plentiful water, problems of growth would disappear. The steady spread of capitalist farming and scientific agriculture would enhance yields and boost rates of productivity growth. Detailed farm surveys carried out in the late 1920s

and the 1930s, however, showed that on the small farms in Jullunder and Ludhiana the intensity of cropping and labour use, as well as the levels of yield per unit of land was higher than on the larger farms of Lyallpur. Generally peasants with large families living on small holdings sought to maximize yields to utilize available family labour and increase earning. They double cropped the land and prepared the fields with care, ploughing and weeding it many times, applying as much manure as they could procure, and dug wells to irrigate the fields. Migrant settlers on the larger farms of the Canal Colonies, however, could not maximize yields per acre. Family labour was in short supply, agricultural labourers were difficult to find, wages at peak seasons were high, and available manure per unit of land was inadequate. The migrants increased income and expanded production by extending the arable rather than intensifying cultivation. As the arable frontier was pushed outward, fields were prepared without adequate ploughing and manuring.

How the farms were cultivated:

A contrast between older districts and canal colonies.

	Older Districts	Canal Colonies	Jullunder (Central Punjab)	Lyallpur (Canal Colony)
Days of manual labour per cropped acre (in 8 hr. days)	27	19	41	20
Days of bullock labour per cropped acre. (in 8 hour days)	13	9	17	9
Intensity of cropping on irrigated land	124	99	142	83
Wages paid to permanent hired labourers (in annas)	4.6	5.2		0-4-8
Expenditure on manure per irrigated acre. (in Rs.)	1.8	1.06	4.2	1

Source: *Farm Account of the Punjab, 1937-1938*. Estimates based on accounts kept in a set of individual farms in various districts of Punjab. The investigation was carried out by the Board of Economic Enquiry, Punjab.

Third: the expansion of the arable frontier came up against ecological barriers. Driven by self-conceit – arrogance about their own power to reshape all landscape - colonial officials pushed the frontiers of arable relentlessly outward. When in 1901-02 allotments in the Jhelum Colony were being planned, it was initially decided that the ‘inferior lands’ would be given out for ‘temporary cultivation’, for a stable cycle of production was difficult to sustain on such lands.. Within a year calculations changed. The Colonizing Officer reported that there was ‘no need to revert to temporary cultivation on the Canal in order to avoid loss of revenue, as the supply of grantees has always been in excess of the land available.’⁹³ It was as if all lands could be brought under the plough, turned into wheat or cotton fields, and made to yield revenue. This inexorable drive for arable expansion became characteristic of the very process of colonization. In the Chenab Colony most of the ‘culturable’ land had been allotted by the end of the nineteenth century. The subsequent opening of the Bhangu Branch created the possibility of another 17, 163 acres being allotted. But most of this land was of such poor quality that the Colonisation Officer found the selected settlers showing ‘much reluctance in taking it up.’⁹⁴ This did not deter officials. They blamed the colonists for being greedy, keen only on the best quality lands, and unwilling to accept what was being offered to them . “But the land is not as bad as it looks,’ the Colonizing Officer declared, ‘and if grantees from outside will not take it, plenty can be found here who will.’⁹⁵ Settlers continued to complain, but the arable frontier marched ahead. The official logic was simple: as long as demand exceeded supply, all land could be allotted and taxed, all spaces could be converted into arable. The quality of land could provide no barrier to expansionary limits. If necessary, the idea of what constituted ‘culturable’ land itself had to be redefined. This unrestrained expansion of the arable created instabilities, leading to failure of crops and poor yields on these marginal lands

Fourth: the dramatic march of wheat and cotton in the Canal Colonies – synonymous with ‘progress’ in colonial imagination - created a number of problems. By the 1920s colony officials were despairing at the fact that cotton cultivation was being extended recklessly without proper preparation of the land. Constrained by a shortage of family

labour and high wage costs, in many regions cotton seeds were being sown broadcast, reducing the seed yield ratio. Extension of cotton also created a pressure on fodder crops that fix nitrogen in the soil.⁹⁶ Decline of pastures and the insufficient supply of fodder inevitably affected animal stock, and this in turn further reduced manure supply. Consequently nitrogen reserves were not replenished, and yields were adversely affected. In contrast, fields in Jullunder and Ludhiana - small parcels that had to sustain large families - were heavily manured and intensively cultivated.⁹⁷

The drive towards uniformity and homogeneity characterizes modernity's search for order. In the field of agriculture it has inevitably meant – whether in the colonies or in the west – a decline of crop diversity. In the Canal Colonies, the increased predominance of wheat and cotton led to declining areas under other crops. Food grains like *jowar* and *bajra* counted for a very small proportion of the total cropped area. There was no demand for them in Europe, no incentive to encourage their export. Obsessed with whiteness, British officials saw these grains as dark and coarse, and associated them with dry cultivation and backward agriculture. They became in fact markers of primitivity. The shift from *jowar* and *bajra* to wheat was seen as a sign of progress. In Lyallpur, these two crops together covered only about 6 to 7 per cent of the food grain area in the first few years of the twentieth century; and by 1940 the proportion had dipped to less than 3 per cent.⁹⁸

This trend towards crop uniformity was paralleled by the move towards genetic homogeneity. From the beginning of the twentieth century in Punjab, the persistent attempts to introduce the high yielding varieties of American wheat and cotton saw the gradual displacement of local *desi* varieties. In 1930 'improved' strains of wheat were sown on 2.5 million acres in Punjab, within a decade and half it covered an area of 8.32 million acres, accounting for 80 percent of the total area under wheat.⁹⁹ In response to the Lancashire pressure for long stapled cotton, the Indian Cotton Association urged Punjab officials to encourage cultivation of American varieties. The F-4, introduced in 1908, came to cover 1,131,800 acres by 1925. In the 1940s colonial officials in the canal

colonies could point to the areas under improved varieties as a measure of the development under colonization.¹⁰⁰

Few, however, could do this without a measure of doubt. In 1919 zamindars who had planted the F-4 discovered a strange disease that was destroying their crop. In September and October, the flowers dropped, the bolls did not open properly, the lint was poor, the seed malformed, and the yields low.¹⁰¹ The yield did not improve the subsequent year, and in 1921 the failure of rain destroyed the cotton crop. Then a few years of good harvest was followed once again by a cycle of poor ones. Such violent fluctuations of yields were not eliminated even in the 1940s. In 1944-45, for instance, on the Government farm at Lyallpur, the yield of American varieties was no more than 25 per cent of what it was just two years earlier. The reason: a heavy infestation of *jassid*, a small wedge shaped greenish yellow insect, commonly called cotton leaf-hopper (*Kohr* or *Tela* in Punjabi) that was fond of attacking American cottons.¹⁰²

As vast areas of wheat and cotton continued to be regularly destroyed by pests, The Imperial Council of Agricultural Research began work on resistant varieties. But this did not solve problems. When immunity was developed against one type of pest, plants still remained susceptible to attacks by other races of pathogens or insects. The problem lay with the move towards monoculture and uniformity. As recent researches have shown, displacement of local varieties and elimination of crop diversity make plant communities particularly vulnerable to recurrent pest invasions.¹⁰³ In polycultures, species diversity retards the transfer of viruses by insects, and genetic heterogeneity limits the damage by pathogenic organisms - even when they were of virulent strains. In monocultures the hosts are biologically homogenous, and this enables a rapid multiplication and spread of the invading pathogen, transforming every pest attack into a probable epidemic. In the older districts of Punjab, the crop regime that peasants had developed through adaptation with local environment was genetically more heterogeneous; and the *desi* varieties of wheat and cotton that they grew were less prone to pest attacks. The yield of the *desis* was lower than the *Amreekan* grown under optimal conditions, but the harvests of the former were more stable.

The British had imagined that in the Canal Colonies these optimal conditions would be ensured. But they were not. By building the perennial canals they hoped to irrigate the ‘desolate’ bars, eliminate seasonal fluctuations in supply, regulate the volume of flow in the channels, and optimize water utilization. Even as officials congratulated themselves on their achievements, there were reports that all was not well with the irrigation system. In many areas crops withered due to intermittent flows, elsewhere – particularly at the tail ends of the canals – the water supply was woefully short, a problem aggravated by canal breaches at upper levels. Yet in other areas excess water clogged the soil. Confident of their dream and arrogant about their capacity to extend the canals over the entire bar landscape, the canal engineers had proceeded in a hurry. In some regions they had preferred to ignore the compact nature of the clayey soil or the hard rocky substrata that hindered percolation; elsewhere they had disregarded the problem of drainage. By the late 1920s the problem became so acute that a Water-logging Committee had to be appointed to look into the problem.¹⁰⁴

In water logged soils carbon dioxide gets trapped and nitrogen and oxygen supplies are reduced.¹⁰⁵ Since roots require oxygen for effective nutrient uptake, water-logging inevitably leads to dwindling yields. Compaction and poor soil aeration also retards root growth, suffocates existing roots and slows nutrient uptake, affecting plant health and leaf activity. Studies have shown that diminished nitrogen uptake restricts cotton growth. Nitrogen from older leaves is translocated to the new leaves causing chlorosis in the older leaves. Lack of potassium, common in water logged soils, affect cotton fibre and leaf colour, and a build up of sodium to toxic levels causes progressive death of shoots and leaves. The cumulative effect of all this was not only a dramatic decline in levels of yield but a steady deterioration of the quality of produce.

Science could not easily sustain the self-arrogance of modernity. The promise of modernity crumbled, afflicted by the antinomies of development.

TWO PATHS OF AGRARIAN CONQUEST

I would like to end the chapter by arguing that development in the Canal Colonies reveals a pattern that was different to what happened elsewhere in Punjab. Reworking Lenin's famous argument about capitalism, I will distinguish two paths to agrarian conquest under colonialism, two ways of visualizing the constitution of the agrarian modern within the colonial landscape: one that transformed society from below and the other that sought to impose a structure from above. The way the contradictory dialectic between these two forms worked itself out defined the specific logic of colonial change.

Agrarian conquest from below proceeded slowly, carefully, almost surreptitiously. From the beginning of British rule in Punjab, officials emphasized that the rural order was to be founded on custom and native institutions. The colonial state remapped the landscape, redefined custom, refigured rights, reorganized social relations, and reordered agrarian regimes. But this transformation was carried through in the name of preservation. The rhetoric of tradition was a defining element of this mode of agrarian conquest, this mode of shaping the agrarian modern. Within it colonization seemed to work without corroding the social fabric, without demolishing the existing social structures. This appearance of continuity allowed the violence of colonialism to be mis-recognized, and historical ruptures to be read as persistences. When an order is built through the language of custom, when law seeks to encode no more than existing practices, the new order does not appear as radically alien, as severely different. Modernity comes almost surreptitiously, behind the back of tradition.

The language of tradition and custom however created constraints. Inhabited landscapes could be reordered, existing practices could be redefined; but there were limits within which this transformation could proceed. Projects of reordering inevitably came up against barriers, against social resistances, against rigidities of embedded structures. Imperialism constantly struggles to emancipate itself from these constraints, to discover

spaces where the ideal colonial order of their imagination could be built without hindrance. This is what they sought to do in the Canal Colonies.

The experiment in the Canal Colonies represented the second path of agrarian conquest. Here the colonial state sought to impose an entire new order from above. It aspired to define everything - the shape of the fields, the lay of the land, the place where the colonist was to reside, the structure of the *abadi*, the mode of irrigation, the crop regimes, the patterns of inheritance, and even the attributes of the people who could inhabit the land. It wanted to displace the pastoralists and implant a society of industrious and enterprising zamindars. It imagined that the wilderness of the pastoral landscape would allow the possibility of unconstrained transformation.

This simple difference between the two forms of colonization inevitably broke down. The agrarian conquest from below could not proceed without state initiatives from above. The desire to base British rule on custom and tradition was itself linked to official ideology, a paternalism that was at the same time powerfully influenced by the Benthamite dream of a codifying state. The project of preservation proceeded through processes of enquiry, classification, translation and codification carried out by the colonial government. The intervention of the master defined the way customs of the people entered the codes. Yet there were limits to invention. True, codification did not preserve immemorial custom untainted, nor did classification of tenures consolidate ancient coparcenary village brotherhoods, untouched and unchanged. But the discourse of tradition inevitably meant that the state had to operate with caution, enquire into the practices of the people, listen to their voices, see how practices diverged from the code, and change colonial policies in response to social pressures. It had to operate through the inner logic of an agrarian conquest that sought to reorder society from below.

Developments in the colonies similarly showed that the conquest from above was not as easy as the state had imagined. It could not produce an ideal agrarian space, unhindered and unconstrained. Villagers reacted to the demarcation of the *rakhs*, and angry pastoralists resisted displacement, carrying away the stock of immigrant peasant settlers,

and destroying their crops. They asserted their rights to the *rakhs* and opposed the invasion of outsiders. As 1907 showed, even the immigrant peasant settlers were unwilling to accept all the conditions that the state was keen on imposing on the grantees. They grumbled about the canal dues and unreliable water supplies, opposed the new laws of primogeniture, demanded security of rights, and objected to the control over their lives, their movements, and their economic decisions. Once again the state has to react to these pressures from below, modify the colonization bill, change the terms in which grants were given, and abolish primogeniture.

This development from above, moreover, was carried through in a language that continued to be paternalist. The development of the Canal Colonies may have been an attempt to realize an imperial dream of a rational reordering of the landscape, establishing a modern agrarian order, unconstrained by the heritage of the past, the rigidities of entrenched social institutions. It may have been inspired by an Imperial self-conceit: a will to demonstrate that the British could produce in the colonies a model agrarian regime. But colonial officials never tired of emphasizing that they were driven primarily by paternalist concerns, and empathy with the needs and problems of the people. Colonization was said to be necessary to relieve the sufferings of central Punjab peasants ground down by demographic pressure, constrained by fragmented, sub-divided miniscule parcels. Migration, they repeatedly said, would relieve the pressure on land in the old districts, and ensure for the pioneer settlers wealth and prosperity in the colonies.

Within the developmental regime of the colonies, paternalism and rationalism fused in a curious mixture. As paternal masters, colonial officials in Punjab claimed to know their subjects, and realize what was best for them. They had recognized the qualities of the central Punjab peasants, glorified their industry and skill in cultivation, and given them large plots of land; but they were equally certain that the development of the colonies could be ensured, and the well-being of the settlers guaranteed only if the landscape was rationally ordered, only if colonists followed the rules that had been codified, only if plots were carved out in uniform squares, primogeniture imposed, planting of trees and residence in the model village made binding. But what if the colonists thought otherwise,

what if they wanted to follow the custom of their home villages, saw partible inheritance as the only basis of equity, and residence requirements an oppressive control over their private lives? What if they conceived of the new structure of rights through the prism of the old? What if what appeared as rational to official minds appeared irrational to the zamindars?

At such times paternalism turned perverse. Paternal masters lost the language of empathy: they flaunted no desire to listen and understand, sit below the banyan tree and hear the complaints of peasants. When in 1907 the zamindars of the *bar* began to campaign against the Colonization Bill, organize meetings and send their petitions to the government, the paternalists reacted with surprising aggression. Unwilling to believe that the complaints of the zamindars could be genuine, they imagined hidden agents at work churning up trouble: the ever-present Russians, the seditious nationalists, and the disloyal lawyers. The police were asked to attend all meetings, track seditious activities, and prepare dossiers on the involvement of nationalist leaders in the movement. Governor General Ibbetson, an old patriarch, drew up a picture of coming catastrophe, foresaw the breakdown of British rule in India, and demanded emergency powers to handle the situation, arrest Lajpat Rai and Ajit Singh, ban all meetings, seal up newspapers. James Wilson, who as Settlement Officer at Sirsa in the early 1870s had empathized with Lala – a peasant poet who recounted a story of lost rights with the coming of British rule over the countryside – and discovered in his poem the pain and suffering of the dispossessed Sirsa peasants, had become in 1907 the most assertive defender of the Colonization Bill. On investigating the rights of Sirsa peasants, Wilson had argued with passion that those who cleared the waste and made it productive always saw the land as their own. A denial of their claim was unjust. Now, 35 years later, after three years as Settlement Commissioner in the Canal Colonies, Wilson had forgotten the convictions of his youth. He fumed at the Colonization Committee proposal that the colonists be made proprietors of the land they reclaimed. There was no custom, Wilson pronounced, that gave the zamindar a right to the land he cleared.¹⁰⁶

What accounts for this amnesia, this denial of an idea that Wilson had so fervently espoused? I would offer two possible arguments. First, within official minds the inner logic of the two forms of colonization differed. In Sirsa the development was seen as organic, occurring through an evolutionary and natural progression, of demographic expansion, pressure on resources, fissioning and separation of households, movement to new areas and reclamation of waste. It was not a process aided or initiated by the state. The state had to recognize the norms, customs and expectations that sustained the process. In the Canal Colonies, by contrast, the project of reclamation was organized from above. The state initiated the process, brought the colonists, gave them land and water. The immigrant settlers had no moral or ethical claim to the land, no right to expect any more than what they had already got through the generosity of the colonial state.¹⁰⁷

Second: Wilson's paranoia also revealed the inner contradictions of paternalism. Kindness and concern for the poor was an intimate part of the rhetoric of paternalism, but this humanist empathy was premised on the expectation of deference and obedience. Deeply authoritarian, paternalism could not tolerate a questioning of authority.¹⁰⁸ No doubt could be expressed, no voice raised against the intentions of the filial figure. Every questioning was seen as a possible threat to the bonds of social cohesion that paternalism sought to forge. In times like 1907 the fears of social breakdown were transformed into visions of apocalypse. When Minto appointed the Canal Colonies Committee, a furious Wilson replayed the images of insurgency that Ibbetson had earlier projected.¹⁰⁹ Plagued by the inner anxieties of his patriarchal ideology, convinced of the illegitimacy of every demand of the colonists, Wilson now had no patience for any language of empathy and concern.

The events that unfolded in the aftermath of 1907 possibly marked the limits of the old paternalistic ideology of Punjab. To survive it had to readapt itself, become sensitive to a new language of individual right, and allow some space for the rebellion of the subjects. This was a difficult task in turbulent times.

¹ See the early exploration reports of the different *bars* conducted by the Survey of India, Dehradun Records, 1850-60, Serial No, 625, Old No. Rev/5, 1854-57.

² In 1841, Henry Lawrence rode through this region, leaving Ferozepur on 16 December and reaching Peshawar on the 28 December. His diary and letters give us his earliest impressions of the terrain. In one of his letters to Mr Clerk he wrote: 'From Kussor to Choong and Rungpoor is a wild waste, and on this side of the Ravi the country is covered with coarse grass; and throughout the 70 miles I have travelled during the last two days, I have been stuck with almost the entire absence of inhabitants; seeing very few people in or about the thirty scattered villages, and meeting with scarcely a traveller on the road. Road there is none...' Writing about these observations of his hero, Herbert Edwards noted many years later: 'Little did Henry think as he marked the desolation through which he marched, that he was only making notes of evils which he himself would have to grapple with in four short years.' Within colonial imagination the pastoral landscape was not only desolate; it was evil. It had to be transformed into irrigated agrarian countryside, populated with peasants, ordered through laws.

³ Punjab Rev. July 1880, A 14; Punjab Rev. July 1880, Nov. 1880 A 3.

⁴ *Report of the Indian Irrigation Commission*, 1901-03, Part II, Ch. XIV, p. 6.

⁵ *Annual Report of the Chenab, Jhang and Jhelum Colonies*, 1908, Statement II.

⁶ *Annual Report of the Lower Bari Doab Canal Colony*, 1916-17.

⁷ For a discussion of the Canal Colonies from within a developmentalist paradigm see Imran Ali (1988). For an exploration of some of the ecological implications see Gilmartin (1995); Indu Agnihotri (1996).

⁸ Selections from the records of Govt. India (For), No. 2, Para 351, p 134.

⁹ *PAR*, 1849-50 to 1851-52, para 354, p. 135. *SFROGOI*, No. 2.

¹⁰ *PAR* 1851-52 to 53-54, *SFROGOI*, No. 6.

¹¹ *SRGI* (For), No. XVIII, para 99, p. 61

¹² *SPCAAP*, 1849, Vol I, No. 1; FR Pullock, *Memorandum on the Dera Ghazi Khan District*, Lahore 1860. *SRCFP*, 1868, No. 18; Punjab Land Rev., July 1880, A 14; Punjab Land Rev., Nov. 1880, A 3.

¹³ Punjab Rev. Pro., Sept. 1882, no. 2. See in particular Sup. Eng. Sirhind Canals No. 3008 I, dated 13 Aug., 1875, to Joint Sec. Irr. Branch; Sup. Eng. Upper Bari Doab Canal, No 1494 I, dated 9 June 1875 to Jt. Sec. Govt. of Punjab, Irr. Branch; Sup. Eng. Bari Doab Canal, No 2990-I dated 15 Nov. 1875, to Jt. Sec. Irr. Branch. Also Punjab Rev. (Irr.), July 1883, A2; Punjab Rev. (Irr.), Dec. 1883, A 1.

¹⁴ Punjab Land Rev, Dec. 1880, A 4a, p. 683-8; *SROFC*, Punjab, N.S, Correspondence relating to Ferozepur and Fazilka Inundation Canals, 1887, No. 61.

¹⁵ Punjab Rev. (Irr.), July 1883. A 1; Punjab Rev. (Irr.), July 1884, . A 1-3. .

¹⁶ Quoted in Irrigation Commission Report.1901 03, Prt II, p. 15.

¹⁸ On Utilitarian idea of fixity see J. Postema, 1986.

¹⁹ *Assessment Report Ferozepur*.

²⁰ The British did build head-works in some of the inundation canals they constructed. But the head-works were not as successful in controlling the working of the canal.

²¹ From Adam Taylor, Civil Surgeon, Ambala, To- TH Thornton, Sec., *GOP, SRGP*, NS No 6, para 13.

²² *SRGP*, NS No 6.

²³ *Irrigation Department Report*, 1926, part II, p. 8.

²⁴ The actual returns surpassed all expectations. The original Chenab scheme in 1892 had projected a return of about 12 per cent by 1909-10, and 15 per cent by 1914. The actual net revenue (gross revenue – running expenses), in 1915-16, as a percent of total outlay was 40 per cent, and net profit (net revenue – interest) was 36 percent. By 1946, the net revenue had gone up to 50 per cent of the capital outlay. See *GOI Rev. & Agr. (Rev.)*, Dec. 1892, A 16-18. *IDR*, 1915-16, 1945–46. For detailed discussion of the outlays and returns see Imran Ali, 1988, Ch. 5.

²⁵ *Administration Report of the Irrigation Department Punjab, 1917-18*.

²⁶ *Irrigation Commission Report, 1901-03*, Part II, Ch. XIV, p. 10.

²⁷ Cher was now defined as water advantage rate paid in the form of labour on the canals. On cher see App. VI to Fryers, No. 29, 11 Feb, Punjab Agr. Rev., Sept. 1872, A 15

²⁸ On the problem of imposing Cher labour see Land Rev. and Agr.(Rev.) Pr. 75-82.

²⁹ *Irrigation Commission Report, 1901-03*, Part II.

³⁰ For a description of the process of *killabandi* see in particular, *Canal Colonies Report 1902-03*, pp, 21-22.

³¹ In tracts where killabandi was done, fields were first plotted on maps before they were demarcated on the ground, unlike the cadastral maps of the old districts where each field – of varying sizes and shapes – had to be individually measured before they could be mapped. In 1893-94, while carrying out the killabandi of the Chenab Canal, F. P. Young realized the need to change the earlier system – seemingly troublesome to both the cultivator and the measuring officer – in the tracts under colonization. ‘It therefore occurred to me to take advantage of our unique position, and to reverse the usual process by drawing our maps on paper first, and requiring the zamindars to lay his field out on the ground in accordance therewith afterwards.’ ‘Report on the Colonization of Government Waste Lands on the Chenab Canal’, *LRAP 1893 – 94*, appendix, p. XIV. The zamindars were to relate to the land through the spatial framework provided by the colonizers. Maps were not to record the order that pre-existed on the ground, they were to create the ideal order.

³² E Joseph, the colonizing officer of Lower Bari Doab Canal Colony recognized the problem: ‘you cannot expect people to show much enthusiasm for breaking up the waste area when there are no means of irrigating it or to alter the shapes of their well fields as long as they have to continue using the wells.’ *Report of the LBDCCC*, 1913-14, p., 43.

³³ *Report of the LBDCCC*, 1913-14..

³⁴ See David Marshall, 2002; Dabney Townsend, 1997.

³⁵ Young criticized the first plan of the village in which there was more than one entry point. In his own model abadi he enclosed the village within a harder boundary lines.

³⁶ Report of G F DeMontmorency, Dep. Comm. Lyallpur, Punjab Home (Police), Oct. 1910, A 57.

³⁷ On cattle poisoning and rick burning in Punjab see Punjab Home (Police), March 1873, A 11.H B Urmsong, the Deputy Comm. of Rawalpindi had reported as early as 1873 : ‘To such a pitch has the evil cowardly system now gone that the headmen of the whole country are most anxious to put it down, and have signed a memorial to that effect...’. The village headmen demanded that in the case of poisoning the offending party should be made to pay for the cattle. But the problem was to identify the offender. In the politics of feuding, revenge and retribution had collective support. Most often tribal groups were collectively implicated in the act, and no one gave any evidence against the offender.

³⁸ The nomadic Manes jats and Vasir tribes residing in Village Buddha in Lyallpur were declared to be criminal tribes in 1918. The charge against the Vasirs read: ‘The Vasirs, who a generation ago were nomads, own no land but keep large herds of cattle, which are a source of constant annoyance to the neighbouring colonists, in whose fields they trespass with impunity, owing to the dread with which their owners are generally regarded.’ The Manes Jats, a community of local nomads, had been given canal land, but they refused to settle, saw agriculture as a subsidiary occupation, and grazed their cattle on the cultivated fields of immigrant colonists. Punjab Home (Police), Jan. 1918, A 285, p. 74. The Dher, Kharrals, and Valana Jats of village Bahuman in the Lahore district were notified as criminal tribes in 1907. Gazette Notification, dated 2 November 1907, Punjab Home (Police), Nov. 1907, A 2. The Biloches in the south were declared criminal tribes.

³⁹ No. 2211, dated Calicut, 11 June 1883. From - C.A. Galton, Acting District Magistrate of Malabar. To – the Chief Sec. to Govt. of Madras. Home (Jud.), Dec. 1883, A 217. (NAI).

⁴⁰ Punjab Home (Jud.), Sept. 1886, A 1.

⁴¹ No 397, dated 19 Oct. 1886, From – A Anderson, Deputy Comm. Hissar, To – the Comm. and Sup., Delhi Div., Punjab Home (Jud.), July 1887, A 8. (Punjab Secretariat Revenue Record Room)

⁴² No 347, dated Lahore, 22 April 1887, From R E Yonghusband, Sen. Sec. to Fin. Comm. Punjab, To – The Sec. To GOP., *ibid*.

⁴³ For reports from different regions see in particular Home (Jud.), Jan. 1888, Nos. 66 – 132. (NAI).

⁴⁴ ‘Illegal detention of cattle by landholder and tea planters in Assam’, Diary No. 1041, From the Chief Commissioner of Assam, no. 2338, dated 17 Aug. 1888, Home (Jud.) Sept. 1888, No. 147. (NAI).

⁴⁵ According to rules the impounded cattle was to be driven to the pound and the fines were to be charged by the pound keeper.

⁴⁶ In response to the request by the Assam Chief Commissioner for an amendment of the Cattle Trespass Act, 1871, Ch. V to allow prosecution of ‘illegal detention’, the Secretary to GOI wrote: ‘I am directed to say that the Governor General in Council considers it desirable that it should be placed beyond doubt that the practice referred to (‘illegal detention’) does not render those who adopt it punishable under the Indian Penal Code.’ No. 1499, Dated Simla, 17 September 1888, From - A. P. MacDonnel, Sec., GOI., To – The Chief Comm. Assam, Home Judicial, Sept. 1888, No. 148. (N.A.I.)

⁴⁷ See the note 'Detention by landholders and tea planters in Assam of cattle Trespass on their lands', Diary 1422. Home Department. From the Solicitor General to Govt., dated 19 Dec. 1888, Home (Jud.), Feb. 1889, no. 50. (NAI) See also Home (Jud.) Feb. 1889, A 51.

⁴⁸ Home Judicial, May 1890, A 89 (NAI)

⁴⁹ For an account of the Gugeira rebellion see L.F., *The Punjab and Delhi in 1857*. The author was a chaplain of the Punjab Movable Column in 1857. See also Times of India

⁵⁰ A Chaplain of the Punjab Movable Column in 1857 tells us that Major Chamberlain, unable to pursue the rebels who retreated across the Ravi, inflicted 'the only punishment that was open to him'. The rebels had driven off their herds, their main source of wealth, into the jungles. Chamberlain employed professional trackers to trace the herds, rounded up over 2300 cattle and thousands of sheep and goat, and butchered them. To the Chaplain, this was undoubtedly a deliberate restaging of a tribal drama: 'Thus in the midst of the Punjab was re-enacted on a gigantic scale the old scene so often performed by the rival lairds of the Scottish borders.' LF, *The Punjab and Delhi in 1857*, Vol. II p.187. A mimic restaging is, of course, never the same as the original. The violence of a practice within the logic of the feud acquires a new meaning when it becomes part of the politics of counter-insurgency.

⁵¹ *Punjab Legislative Council Debates*, 1929.

⁵² *Chenab Colony Report*, 1903-04.

⁵³ Reviewing the developments in the Jhelum Colony, J Wilson, the Settlement Commissioner, noted in a marginal comment, that the janglis had 'in a surprisingly short time, adopted an agricultural mode of life in place of their old wandering pastoral life, and are making very good colonists.' *Jhelum Colony Report*, 1901-02.

⁵⁴ *Punjab Legislative Council Debates*, 1929.

⁵⁵ Letter No. 56, dated 11 May 1901, to GOI, in *Jhelum Colony Report*, 1901-02.

⁵⁶ Financial Commissioner's Letter No 7101, dated 23 Nov 1901..ibid. See also GOP, Letter No., 145 dated 4 September 1902

⁵⁷ Initially the size of the *ghorapal abadkar* grant was one-and-a-half square (42 acres) this was soon increased to two squares (56 acres). See No 793 S, dated 14 July 1902, App. A, *Jhelum Colony Report*, 1901-02. Also GOP Letter No. 471 S, dated 14 July 1902, *Jhelum Colony Report*, 1902-03, p.24. GOP letter No. 589 S, dated 23 June 1903 and GOP, NO. 1829 S, dated 9 Sept. 1903.

⁵⁸ *Jhelum Colony Report 1901*, p. 24. See also Fraser to Settlement Commissioner, no. 134, dated 27 July, 1902.

⁵⁹ The Colonization Officer of course imagined that peasants could be transformed into breeders, but this hope was marked by a deep uncertainty: 'It remains to be seen how this class will prove to be successful horse breeders. As self-cultivating zamindars they are accustomed to dealing with cattle, and know something about live-stock generally, but it will rest with the officers of the Remount Department to teach them the high art of breeding horses.' *Jhelum Colony Report 1902-03*, p. 27.

⁶⁰ *Jhelum Colony Report 1902-03*, p. 27.

⁶¹ It was as if, inscribed with the marks of a nomadic past, shaped by the culture of mobility, the pastoralists lived for ever in an enchanted past of mythic freedom. Even when keen on a space within the new order they were emotively tied to the old. Carrying out the allotment operation in the Lower Bari Doab, E Joseph, the Colonization Officer, declared: 'the Janglis while eagerly pressing even for such land as we give, and besieging us for inclusion in the lists, look regretfully back on the days when they were free to follow their camels from place to place and obtained from time to time permission to cultivate a few acres below the *dhaya* (raised ground near the river) in some favourably low ground where, if there was any rain at all, a food crop of wheat could be grown with little labour; the reward was great and the revenue light.' *Lower Bari Doab Canal 1913-14*.

⁶² In Jhelum Colony, when the allotment policy was rethought after 1901, 74 per cent of the total allocable area, reserved initially for peasant grants, was given out as Service Grants for horse breeding. But the janglis received only 15 per cent of this area. The rest went to powerful local Biloch landowning gentry, and influential local men like the zaildars, haqdars and inamdars. *Jhelum Colony Report, 1902-03*. In Lower Bari Doab, the Janglis and Hitharis were allotted only 26 per cent of the 680,000 acres set aside as horse and mule breeding area. *Lower Bari Doab Colony Report, 1913-14*.

⁶³ In Jhelum Colony, for instance, jangli grants of cultivated lands were 5 acres of poor quality land as opposed to the usual 28 or 56 acres in the case of all peasant grants. As Service Grants, the Janglis and

Hitharis received half a square (14 acres) while the Biloch land owning gentry of agricultural castes were given 2 squares (56 acres) each. *Jhelum Colony Report, 1902-03*.

⁶⁴ We do not know whether the poet was entirely blind as the record claims, and whether he was translating into poetry the experience of the colony as he had heard others narrate. His name, Kana, suggests he was one eyed.

⁶⁵ *Gazetteer of the Chenab Colony, 1904*, pp. 34 - 35. See also *Chenab Colony SR: 1915. Lyallpur SR 1925*.

⁶⁶ For a discussion of the official debate on the Bill see NG Barrier, 'The Punjab Disturbances of 1907: The Response of the British Government in India to Agrarian Unrest', *Modern Asian Studies*, Vol. I. No. 4, 1967, pp. 353 – 83.

⁶⁷ *Tribune*, 15 Jan. 1907.1

⁶⁸ The meeting was announced by Hakim Singh, Joint Secretary of the Bar Zamindars Association, in the pages of *Zamindar*, 16 Jan. 1907. Also see *Light*, 30 Jan. 1907; *RNP*, 2 Feb. 1907. *Tribune*, 1 Feb. 1907.

⁶⁹ *Tribune*, 7 Feb. 1907.

⁷⁰ *Zamindar* 24 March; *RNP* 1907, *Punjabee*, 27 March.

⁷¹ *Zamindar*, 3 May 1907.

⁷² *Tribune*, Feb. 15, 1905.

⁷³ *Zamindars* 8 Jan 1907 : *Tribune* 12 Jan 1907. : *Siraj-ul-Akhbar* (Jhelum) 5 Feb 1907.

⁷⁴ *Tribune*, Feb 15 1907.

⁷⁵ *Tribune*, Feb 15 1907.

⁷⁶ *Tribune* 1 Feb; *Zamindar* 30 Jan 1907; *Light* 30 January; *RNP*, 2 Feb. 1907. The Zamindars' meeting at Lyallpur on 3 February 1907 declared in their resolution that the Bill was improper, unconstitutional, violated contracts and unjustly subjected old grantees to new liabilities. It altered the rules of succession against the provisions of personal and customary law, proposed penal punishments for small offences, provided no check against the offences of officers, and unfairly denied proprietary rights to grantees. *Tribune*, 7 Feb. 1907.

⁷⁷ *Zamindar* 12 January 1907.

⁷⁸ Dwelling on this theme of seduction and deception, one poem published in *Zamindar*, explained how the cancellation of 'all previous contracts had frustrated the hopes entertained by the colonists' and created feelings of distrust and suspicion.' *Zamindar*, 8 March 1907; *RNP* 16 March 1907.

⁷⁹ One writer in *Tribune* wrote: 'The Bill if passed into law is likely to shake the confidence of the people in the integrity and good faith of official transactions which will be disastrous to the good name of and prestige of the Government'. *Tribune*, 9 Feb. 1907. Another writer declared that it would rudely destroy the implicit faith in the benevolent intentions of the rulers and provoke a massive social conflagration: 'This measure if allowed to stand shall give rise to agitation and irritation through out the whole of Punjab the like of which was never witnessed in this quiet land of the five rivers.' *Tribune* 15 Feb. 1907.

⁸⁰ Many years later, in 1910, inaugurating the Punjab Agricultural College at Lyallpur, Dane recounted with pride how he persuaded the colonists to move. *Khalsa Advocate*, 23 Dec. 1910.

⁸¹ RCGWCC 1891-92, LRARP1891 – 92. App. E.

⁸² RCGWCC 1892-93, LRARP1892 – 93. App. E.

⁸³ *Zamindar*, 8 March 1910.

⁸⁴ *Ibid*

⁸⁵ *Zamindar* claimed that the settlers had to pay 14 lakhs in fine and four times that amount as tips to the patwaris. *Zamindar*, 6 Dec. 1907. This probably was an inflated and arbitrary figure. We are not told of the source and basis of the calculation, nor are we informed about the number of years over which this amount was supposed to have been collected. (Who collected information about tips to the patwari!) But such estimates had a rhetorical function. They were meant to underline the enormity of the fiscal burden, concretize the image of suffering and injustice, and create an illusion of facticity.

⁸⁶ One colonist from the Jhelum Canal wrote: 'the poor agriculturists are exposed to all sorts of calamities.... they have to remain in constant fear of plague, famine, cholera, to say nothing of the pests which ruin crops. The overbearing constable, the meek sahuakar, the tahsil orderly, the cringing lambardars and the greedy Zaildar, all vie with one another in putting them to trouble.' *Zamindar* 8 Oct 1907.

⁸⁷ In pioneering lores of later years, this picture of a hostile landscape recurred, underlining the heroism of the pioneers. In the last years of imperial rule, Malcolm Darling, riding through the Canal Colonies, asked Maharaja Singh, one of the first 140 migrants to Lyallpur, about his initial impressions of the place. Singh

said that the country was ‘ all waste but dotted with jand trees, snakes lifting angry heads, enormous scorpions, and not a bird to be seen’. In addition to all this was the trouble created by the *janglis*. Darling, *At Freedom’s Door*, p. 79. These images of danger, fear, poison, death and desolation appeared in most accounts that Darling heard from the colonists.

⁸⁸ Add a footnote to a statement to the effect.

⁸⁹ See *Report of Waterlogging in Punjab*, 1924.

⁹⁰ Estimates based on *LRAR* and *Seasons and Crops Reports*.

⁹¹ This is conclusion that is widely accepted. See Raj Krishna 1964 , MM Islam 1988.

⁹² Detailed village surveys suggest even higher yields in the Doaba – the Central Districts of Punjab – where small holders sustained production on intensively cultivated small parcels. Tehong was a village in Jullunder with about 2160 acres of cultivated land, parcellized into small holdings of about 3 acres. Forty percent of the total area was chahi (well irrigated). The Director of Land Records suggested in 1930 that chahi lands produced on an average 1234 lbs of wheat per acre, and 374 lbs of cotton. These figures are higher than those in the *Seasons and Crops Reports* and *Agricultural Statistics of British India*. See *Tehong VS*, p. 180.

⁹³ *Jhelum Canal Colonies Report*, 1902-03, p. 29.

⁹⁴ *Chenab Canal Colonies Report*, 1902-03, p. 3.

⁹⁵ *Ibid.*.

⁹⁶ The Annual Farm Accounts maintained in the selected farms in various districts showed that the proportion of area under fodder crops in the older districts was over 28 per cent, while in the Canal Colonies it was no more than 13 per cent. See statement IV – A, *Farm Accounts in the Punjab, 1936-37* (Lyallpur 1939).

⁹⁷ The imputed value of manure used per acre was 80 per cent higher in the older districts: Rs. 1.8 compared to Re. 1 in the Canal Colonies. *Ibid.*, Statement VII A.

⁹⁸ *Agricultural Statistics of British India*, relevant years.

⁹⁹ *ASBI*, relevant years.

¹⁰⁰ Muhammad Afzal, ‘American Cottons in India: Their Introduction and Development’, *Indian Farming*, Vol. VII, No. 10, October 1946.

¹⁰¹ D. Milne, *Report on the Causes of the Failure of Cotton Crop in the Punjab in 1919* (1924); *idem*, *Report on the Complaints of the Abnormal State of the Cotton Crop in 1921*. See also *Review of Agricultural Operation in British India, 1919-20*; *Land Rev. Adm. Rep.*, 1919-20, *Seasons and Crops Report of Punjab, 1919-20*.

¹⁰² Investigations showed that jassid attacked two varieties of American cotton – 124F and 289F/K-25, and not others like F-4, LSS and 289f/43. It was, in fact, a pest that usually attacked *guara* (*cyamopsis psoralioides*) and damaged cotton only in the absence of *guara*. This again points to the consequences of species homogeneity. See Mohammad Afzal and Abdul Ghani, ‘Cotton Jassid in the Punjab’, *Indian Farming*, Vol. VII, No. 9, September 1946.

¹⁰³ See M.W. Adams, A.H. Ellingboe, E.C. Rossman, ‘Biological Uniformity and Disease Epidemics,’ *BioScience*, Vol. 21, No. 21, Nov. 1, 1971, pp. 1067-70; P.A Matson, W.J. Parton, A.G. Power, M.J. Swift, ‘Agricultural Intensification and Ecosystem Properties,’ *Science*, New Series, Vol. 277, No. 5325, July 25, 1997, pp. 504-509; David A. Cleveland, Daniel Soleri, Steven E. Smith, ‘Do Folk Varieties Have a Role in Sustainable Agriculture?’, *BioScience*, Vol. 44, No., 11, Dec. 1994, pp. 740-51.

¹⁰⁴ *Annual Proceedings of the Waterlogging Conference, Punjab*, 1928-38. See also *Waterlogging and Rise of Water Level in Chhaj and Rechna Doabs, Punjab Irrigation Branch Papers*, No. A 20, 1925; Pearson, *Notes on Waterlogging in Punjab*, 1928.

¹⁰⁵ See T.T. Kozlowski, ‘Plant Resposnes to Flooding of Soil’, *BioScience*, Vol. 34, No. 3, March 1984, pp. 162-67; R. J. Dowdell, and M.H. Mian, ‘Fate of Nitrogen Applied to Agricultural Crops with Particular Reference to Denitrification,’ *Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences*, Vol. 296, No. 1082, *The Nitrogen Cycle*, Jan. 27, 1982, pp. 363-73.

¹⁰⁶ As Financial Commissioner in 1909, Wilson wrote: ‘It is not true, so far my experience goes, that in the Punjab the reclamation of waste and unappropriated land is generally recognized as giving a title to proprietary right. Whether this was even the ancient custom in the older settled parts or not, there has certainly been no general idea of his kind in the minds of the people for the last two generations.’ This was an astounding comment from someone who had written the Sirsa Settlement Report and argued so insistently that those who reclaimed the waste expected a permanent right over the land they cleared. In his

marginal notes to Wilson's comment Gordon Walker, the Lieutenant Governor, pointed out that the settlers never imagined that their rights over the allotted squares would be similar to tenancies under private landlords: 'The idea that they would stand to Government in the relation which they understood to be that of tenants was so alien to them that they were incapable of realizing it...they regarded themselves to all intents and purposes proprietors.' Rev. and Agr. (Rev.), A1, April 1909. 'Government tenant' was an incomprehensible category.

¹⁰⁷ Wilson wrote: 'the colonists...it must be remembered, had, most of them formerly no rights, legal or moral, over their land, and who have been brought from narrow poverty in their old homes and placed, by the beneficence of Government, in a position of prosperity, unimaginable in their fondest dreams.' Wilson's minute, 4 May 1907, GOI Home (Leg.), June 1907, A 4-8.

¹⁰⁸ On the multiple strands within paternalism and its authoritarianism see David Robert, 1958; Roberts, 1979; P. Thornton, 1966; On the distinction between the paternalism of the eighteenth century gentry and its mutated, refigured form that became an intimate part of nineteenth century thought, not just of the Tories, see Peter Mandler, 1987; Anthony Brundage and David East Wood, 1990, pp. 183-94. Catharine Hall, 'Competing Masculinities, 1992, pp. 255-96.

¹⁰⁹ The appointment of the committee, Wilson prophesied, would not only weaken the authority of all civil officials, but 'it may prove to be a step towards riot, mutiny and bloodshed, to which troubles in Eastern Bengal are but child's play.' Both Ibbetson and Wilson tapped into Imperial fears to argue for the need to discipline the colonists with a strong hand. Minute of Wilson, 3 July, 1907, GOI, Rev. and Agr. (Rev.) Oct 1907, A 13-18