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Changes in Wool Production and Usage in Colonial India

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The paper shows how production, marketing and uses of wool changed in colonial India (1858–1947). The changes involved location, products, people, and nature of the firm, and were induced by two circumstances, one arising from the raw material side, and the other from the consumption side. There were limitations on access to common grazing lands, a theme that takes us to those of herding, customary rights, and the economics of wool production. The economic character of weaving was bound with that of wool production. The nature of that bond changed in the colonial period. On the consumption side, imported garments altered tastes and introduced new standards. This latter process encouraged standardization, larger scale, and urban production, and in a more limited way diversification and technological change. Power-looms, hosiery, and worsted were the outcomes of the last process.

The study began as a contribution in the history of the traditional crafts in colonial India.[1] However, when finished, it had overstepped industrial history. Several traditional industries in this period were deeply affected by changes on their raw material side. Cotton handloom weaving adapted to machine-spun yarn, silk weaving to the greater availability of imported silks, metals to imported metal sheets rather than scrap metal, leather manufactures to factory-tanned hides, etc. In each case, the new material was of different quality, easier to handle, or cheaper. In all these cases there was an obsolescence or decline in the local raw material producing activity. In wool, there was neither obsolescence nor a clear decline, but a change in marketing, composition, and regional spread. To a large extent, the source of the transition was specific to wool. The supply side of wool weaving brings into the narrative on traditional industry

[1] The project of which it was to be a part was later published as Tirthankar Roy, *Traditional Industry in the Economy of Colonial India* (Cambridge, 1999). The wool study was unfinished at the time the book became ready, and was not included in it.

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glimpses of the history of animal husbandry in colonial India, a history that is now being recovered in a branch of the environmental history scholarship. In this paper, therefore, reference to the artisanal side of the wool economy, namely the spinner's and the weaver's crafts, is tied with the narrative on wool production and marketing.

Largely a rural and nomadic occupation and nearly as dispersed as cotton handlooms in mid-nineteenth century, the composition and whereabouts of wool weaving in handlooms changed steadily in the early twentieth century. Earlier, the shepherds themselves wove wool to a large extent. Being a byproduct of the wool production system, the average articles tended to be very cheap and very coarse. This basis of the weaving economy began to be impaired by formal or informal closures of pastures. The process hurt many local weaving traditions, but stimulated long-distance trade and the use of traded wool. In turn, the major products on the weaving side could now choose better or more appropriate qualities of wool. The railways strengthened these tendencies by altering trade routes, changing the costs of carrying wool from different regions, creating new market-points, and destroying others.

The rest of the essay has four major sections: a description of Indian wool, shepherds and changes in the economy of herding, markets for wool, and production of woollens.

I

It is useful to start with a description of Indian sheep and wool as of now. India has always had a large indigenous sheep population. This population has grown from about 40 million in 1950 to about 50 million in 2000. Production of wool increased somewhat more rapidly, but of late there are signs of a fall in yield. India has about 3–5% of world's sheep population, and less than 3% of world production of clean wool. Indian consumption of wool has grown faster than production, from about 20 million tonnes in 1950 to over 70 million now, with the result that a substantial part of India's total consumption of wool has to be imported. There was, in fact, always a shortage in apparel grade wool, which does not grow in India in large quantity. In the colonial period, apparel grade wool was largely imported from Tibet and Afghanistan over land routes, and ended up in the woollen mills of Punjab and the United Provinces (UP hereafter). After 1947 these routes were either closed or lost their earlier importance. The

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essential long-term change in India's foreign trade in wool, therefore, is not one of composition but of direction. Tibetan wool was replaced by Australian, land trade by maritime trade, and intra-regional trade by transregional.

The large majority of sheep breeds in India are nondescript due to intermixing. Currently, India has 42 descript breeds. The sheep breeds have evolved due to natural selection or indiscriminate heterosis. Their visible features, such as size, colour, wool-type, and legs, vary according to ecological and agricultural conditions. The names of the sheep also vary according to these differences and the region of occurrence, for example Madras Red, Red Nellore, Marwari (the largest breed in population), Bikaneri, Jaisalmeri, etc. How these names and the visible distinctions correspond to genetic differences is not completely known and still being researched.

There are two major groups in which raw wool is classified based on its final use, apparel wool and carpet wool. Carpet wool has longer staple and is coarser than apparel wool. Wool used in floor coverings needs to be long and strong to withstand rougher usage and greater abrasion than is the case with garments. On the other hand, apparels require softer, that is, fine and short-staple wool. Very few breeds in India produce apparel wool or fine wool suitable for garments. The exceptions are Kashmir Merino, which is a crossbreed developed more recently, and Nilgiri. Those that do produce fine wool include products of selective breeding. By and large, the north Indian breeds produce coarser and stronger wool suitable for carpets, whereas the vast majority of the south Indian breeds produce a wool that is too much like hair and not good for textile usage. The only exceptions are, other than the Nilgiri, the Bellary and Coimbatore breeds, which supplied the raw material for the south Indian carpet industry as we shall see. Relative to the major wool-yielding breeds of the world, the average Indian sheep is said to be better adapted to coarse feeding and poor nutrition, extreme aridity, extreme seasonal fluctuations, and long migration. However, whether due to indiscriminate breeding, or environmental reasons, the majority of the breeds do not produce good wool. The average yield also varies. The north Indian sheep, on average, yield an output (for two shearings) that is more than double that of the south Indian sheep, with the sheep of the Gangetic plains falling in between.[2]

[2] This overview draws on R.N. Singh and S.D.J. Bohra, 'Sheep Genetic Resources and their Management', Central Sheep and Wool Research Institute (Avikanagar, date not available) and R.M. Acharya, *Sheep and Goat Breeds of India* (Rome, 1982).

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In 1938, India had the world's fourth largest sheep-stock at 51 m, or 6% of the world's sheep. In wool of all grades, India's share in world production was a modest 2%. But in the specific grade then called East Indian Carpet Wool, India supplied one-fifth of world consumption, a close second to China's 29%.[3] As with hides, India's comparative advantage in wool was a rather crude one, a sheer abundance of sheep. This plenty turned India into a net exporter of wool in the carpet grade, whereas the quality of sheep ensured that in apparel grade, India was always deficit.

Older descriptions of the precise qualities of the various breeds of sheep in India can be confusing, as specialist opinions tend to get mixed up with weavers' impressions about the sheep and the breeders' impressions about the relevant textiles. Nevertheless, a great deal of informal research based on attempts at systematic breeding had been done already by the 1880s, when George Watt's *Dictionary of Economic Products* appeared with a long and detailed account of the Indian sheep.

Of the numerous roughly classified Indic breeds, the four which George Watt identified as wool-yielding were the 'kurumba' of Coimbatore region called after the community that reared it, along with the Mysore, Patna, and Rajputana. Incidentally, none of these names is recognized any more. Of these four, the Patna occurred in close proximity to settled agriculture, that is, sporadically over the entire Gangetic plains except Bengal. The other three were reared in arid and shrubby countryside.[4] All of these were loosely included into what was then called 'unimproved' sheep found in south and central Asia, Russia, north Africa, and parts of southern Europe. The majority of these yielded a fleece which was 'light, coarse, uneven and kempy [*sic*]', and known in trade parlance as the East Indian Carpet Wool. It could be and was used for making garments and blankets, but its comparative advantage lay in carpets and rugs.

Going by wool, the common breeds in the Indian plains were even inferior. The heat and the aridity secured 'a hard, dry and frizzy wool, almost devoid of natural greases'. Too coarse hairs produced a coarser yarn, and hence a coarser carpet, that is one with fewer knots per inch. At least some of it not being sufficiently serrated, did not easily cling together or did not felt easily. Long, harsh or dead hairs

[3] India (Agricultural Marketing Department), *Report on the Marketing of Wool and Hair in India* (New Delhi, 1946), p. 2.

[4] George Watt, *Dictionary of the Economic Products of India* (London, 1883), Vol. VII, 'Sheep and goats', p. 569.

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posed a similar problem.[5] Wool from Tibet across the frontier was softer, but not the best quality possible for weaving finer fabrics, and rather poor dye-absorber. With the growth of a tanning industry in the Arcot area in south India, many southern carpet weavers switched from live to dead wool, which now had centralized sources of supply. But dead wool was usually pre-treated with lime, making it malodorous and devoid of natural fats. With sheep reared in forested country, a long and heavy monsoon, the rain, the mud, and the broken wool as the sheep made their way through undergrowth, impaired the winter shearing. To all this was added the absence of any but the crudest system of grading wool, resulting in the occurrence of dead hair, and in unevenness of fibres in any lot.[6]

Observers of the textile crafts at the turn of the century believed that within the unchangeable climatic constraint, much could still be done to improve the quality of the wool, principally, improved breeding. Selective breeding was definitely not unknown in precolonial north India, quite the contrary. But wool does not seem to have been the object of the indigenous tradition. The aim was to create 'fighters', creatures with imposing horns and powerful backs, the gamblers' delight.[7] Scientific breeding for wool was tried in the early-colonial period in many obscure and forgotten farms, but most of them were constrained in various ways. The constraints arose from limited money, distance from markets, limited access to technical knowledge, and the difficulties faced by the imported breeds. In north India, imported merinos could not stand the heat and the rains. In one of the rare instances, in the 1880s Sir Mark Cubbon's experimental firm in the hills of Mysore did report a success.[8] This mixed experience called for research and development that needed to focus on the indigenous sheep, and/or be prepared to wait for a long time until hybridization could overcome the initial costs. In other words, research needed much more investment than these early pioneers realized.

[5] Felting or milling refers to shrinkage in the fibres such that, in the woven fabric, individual threads remain closely drawn together, and indistinguishable.

[6] A.C. Chatterjee, *Notes on the Industries of the United Provinces* (Allahabad, 1908), p. 53; A.W. Pim, *A Monograph on Woollen Fabrics in the North-Western Provinces and Oudh* (Allahabad, 1898), pp. 1–2, for two representative descriptions of north Indian wool trade. See V.R. Chitra and V. Tekumalla (eds), *Cottage Industries of India (Guidebook and Symposium)* (Madras, 1948), p. 71, Section II, on how absence of grading devalued central Indian wool.

[7] Pim, *Monograph on Woollen Fabrics*, pp. 1–2.

[8] *Ibid.*, Edgar Thurston, *Monograph on the Woollen Fabric Industry of the Madras Presidency* (Madras, 1898), p. 1.

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Indeed, rearing of sheep mainly for their wool was practically unknown south of the Himalayas. The economic returns of sheep were various. Sheep were kept for mutton, for a fee they earned from owners of the land they grazed and manured after harvests, for the tiny quantities of wool they yielded, in the south of the country for the skins, in the foothills of the Himalayas to be used as pack-animals. These incomes were individually small. If sheep rearing still went on extensively, it was because the incomes together could provide livelihood, and also because the costs of rearing were small too. The cost was practically nil for a group of shepherds willing to migrate long distances seasonally. Sheep and goat are more adaptable than cattle to semi-arid conditions, even though the wool they yield varies according to climate and terrain. Whereas the grass-rich Gangetic plains were well-known for cattle, the drier zones of the south were short of cattle, but possessed some of India's better breeds of sheep.

II

Two things, thus, seem to have characterized all the major pastoralist communities, despite many other differences between them: they tended to be non-specialized, and they tended to be mobile. Transhumance is a well-known feature of pastoralism and an adequately conceptualized one.[9] It has also been an enduring feature. However, the other characteristic, which has not endured as much, has received rather less attention. Major communities appear in nineteenth-century sources as a diversified and non-specialized group. That said, the occupations they did perform all had an association with their primary identity as shepherds.

In one of the earliest English-language descriptions, Francis Buchanan-Hamilton wrote of the Kurubas near the present-day textile town, Coimbatore in South India:

> The *Curubas* . . . are all of *Karnàta* extraction, and . . . never cultivate the ground. Their sole occupation is feeding their flocks, and weaving their wool into coarse blankets . . . Each man possesses from fifty to one hundred sheep, which he pastures on the fields all day without paying any rent; and at night he folds them on the arable lands of the cultivators, who might

[9] See for example, the discussion in Arun Agrawal, *Greener Pastures* (Delhi, 2000), pp. 12–16.

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each give a *Bulla* of grain to the proprietor of one hundred sheep for the manure.[10]

'Sole occupation' is an exaggeration, for elsewhere, Buchanan-Hamilton described these groups as armed messengers, peasants and labourers, local army, etc.[11]

Written almost a century later, the accounts of the Dhangars of western and central India by Enthoven, and in the Gazetteers, suggest an essentially similar profile. The shepherd was probably never just a shepherd, nor was seen as one. Those who still carried on the nomadic profession in the 1920s needed to migrate every season, from the Deccan plateau westward across the hills, in winter, and return before the rains. On the way they sold manure in kind. 'They have a great name as weather prophets', probably reflecting their sojourn through different ecological zones, and the need to avoid the rains when the hills became hazardous for the sheep. The familiarity with the hills made them good hill soldiers. Many occupations the ex-shepherds undertook involved travel or contact, as messenger, moneylender, or itinerant trader.[12] And in the 1880s, the Nasik Dhangars seemed to earn good incomes from blankets, and were possibly more weavers than shepherds, though they were still known as 'rovers'.[13]

The Kumaon Bhotias were, in the early twentieth century, primarily a trading community with partial involvement in sheep-rearing and weaving. It is not clear whether they had become relatively more trade-oriented in the course of the nineteenth century or not. Nevertheless, they illustrate the same diversified and yet shepherding-oriented mobile livelihood style as the other major communities. Every summer, they travelled up to Gartok, Taklakot and Gyanema markets in Tibet, and bought wool, salt, borax, musk furs, yak's tail, and live animals, in exchange for grain, Spring crops, metal utensils, tobacco and silver. At the onset of winter they began the descent, stopping over at the major fairs at Joul-Jibi, Bageshwar and Thal where much of the transactions were completed.[14] Like the plains

[10] Francis Buchanan, *Journey from Madras through the Countries of Mysore, Canara, and Malabar* (London, 1807), in 3 vols, vol. II, p. 278.

[11] *Ibid.*, p. 331.

[12] R.E. Enthoven, *The Tribes and Castes of the Bombay Presidency* (Bombay, 1920), I, pp. 312–13, 321.

[13] Bombay, *Bombay District Gazetteers*, Nasik District, 1884.

[14] A description of this trade and the routes can be found in United Provinces, *Industrial Survey of the United Provinces*, Almora District (Allahabad, 1925).

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shepherds, they spun while the flocks travelled along with them, and wove part of the wool. But unlike them, the Bhotias, at least the sect not engaged in cultivation, specialized mainly in wool trade. A further difference with the plains shepherds consisted in the gender division of labour: the men were usually spinners, and carried a portable distaff, while the women wove. Their prosperity owed partly to the evident capacity for risk-taking, since the journeys were hazardous. And partly, it owed to a monopoly of the trade, which was preserved among other means by the rumour that the Tibetans did not trade with anyone who declined to dine with them.[15] The Bhotias, further, were polyglot, proficient in hill and the plains languages.

Groups of them started out on their treks which combined grazing, spinning and trade, in mid-Spring, with merchandise financed by a group of bankers called Kharagwals who specialized in dealing with the Bhotias. The two main routes connecting the rail-heads and the highest passes were located one along the eastern border of Almora, and the other along the central parts. The eastern route started from Tanakpur, and climbed up along Champawat, Lohaghat, Pithoragarh—the Jim Corbett country—and Askot. The central route began from Ramnagar, went to Haldwani, and ascended via Ranikhet, Almora, Bageshwar and Johar. Towards the upper reaches, the passes could be so narrow that no animal larger than sheep could negotiate them. So sheep were the natural choice as pack animals. Their masters were not only adept at the crossing, but spun wool 'even when they drive their sheep along . . . a dangerous ridge'. Bhotias did take cattle as well, which they left, along with a great deal of the merchandise, at the highest of the 'depots' they set up before entering Tibet. From these depots, villages within many miles of the trade-route on both sides were accessed. A part of the merchandise was sold here, a part in the big fairs, and the rest at the railheads.[16]

Between summer, when they bought wool in Tibet, and the winter fairs where wool was sold, months went by, and several major harvests took place. All this time the suppliers and the consumers had no effective contact. Demand for wool in the plains, therefore, fluctuated, to which movements the Bhotias could not easily adjust. The resultant price fluctuations added an element of risk in this trade.

[15] For a description of the community, see R.P. Srivastava, 'Tribe-Caste Mobility in India and the Case of Kumaon Bhotias' in C. von Furer-Haimendorf (ed.), *Caste and Kin in Nepal, India and Ceylon* (Bombay, 1966), pp. 161–212.

[16] United Provinces, *Industrial Survey*, Almora.

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Writing after one such episode, Chatterjee concluded that '[T]he Bhotiyas have to bear all losses due to fluctuations in price'.[17]

Two political-economic factors deeply affected the pastoralist communities from the last quarter of the nineteenth century. The combined effect was increasing specialization and division of labour, in particular, a gradual separation of weaving from wool production and wool trade. This separation never became complete. Even today, major herder communities engage to a small extent with wool production, trade, and weaving. However, the long-term trend was one of separation. The spheres where shepherding and wool production are still somewhat connected arise almost exclusively in the Himalayan regions.

First, access to common resources declined steadily. This was connected with 'sedentarization' and 'peasantization' of those communities who primarily depended on the commons, chief among these were the shepherds. While the Forest Department created in 1865 reserved access to forests and regulated grazing to protect them from overexploitation and to earn a rent from its resources, the offices connected with agriculture encouraged settling of pastoralists directly or indirectly. The forests were essential to the shepherds for several reasons. The easiest season for grazing throughout the country was the three months of the rains, and a few days after harvests. But at all other times, either the open lands were with crops, or they were too dry. Further, sheep need salt, which was expensive for the shepherds, but rock-salts could be found inside most forests. Codification of property rights led to many customary rights on open wastes being ignored. Large canal irrigation systems crisscrossed and broke up grazing grounds and converted some of them into cultivable land. Population growth also led to encroachment on forests and grazing grounds. Secondly, the British redefined their political relationship with pastoralist communities and often imposed new taxes on them. In regions located near areas of conflict such as the Punjab, some pastoralist communities not believed to be sufficiently loyal fell a victim of these conflicts. There is now a large literature on these processes occurring between *c.* 1880 and 1950, even beyond.[18] This recent literature on pastoralist commu-

[17] Chatterjee, *Notes on Industries*, p. 53. A good contemporary account of the risks of this trade can be found in United Provinces, *Industrial Survey*, Almora, pp. 7–8.

[18] Standard references would include, Neeladri Bhattacharya, 'Pastoralists in a Colonial World' in David Arnold and Ramachandra Guha (eds), *Nature, Culture, Imperialism. Essays on the Environmental History of South Asia* (Delhi, 1995); Vasant K. Saberwal, *Pastoral Politics* (Delhi, 1999), and two recent issues on pastoralism in *Studies in History*, July–Dec. 1991 and July–Dec. 1998.

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nities, however, is strongly environmental-political in its focus. It is conspicuously silent on economic history in general, and the history of manufacturing in particular.

The pastures of the northern plains where the Patna sheep grazed were probably the first to disappear. Already at the time Watt was compiling his work, rearing had nearly become extinct in the Awadh region, upon which the shepherds Gadarias reportedly migrated to the Nepal foothills.[19]

This process was documented a little later in the drier south India where the Coimbatore sheep grazed. In Bellary, for example, the effects of forest reservation were correlated not only with the decline in the size of flocks, but also degradation in quality. Pastures here consisted of largely forests, scrub and bush lands. But, 'Reservation of forests and curtailment of grazing lands by assignment of wastes for cultivation . . . has [caused] a large decrease in the number of flocks . . .'. In one of the villages, flocks reduced from 15,000 to 2,000 in a few years, 'owing to the military authorities having refused the shepherds for access of grazing purposes to a portion of a hillock in their possession'. The restrictions drove the Kurubas, shepherds of southern India, to ever-larger distances, to move into unfamiliar and hazardous territories, a particular hazard being the prospect of underfeeding. Government forests could be used on payment of fees, but 'the ignorant boors are subjected to oppression by petty forest officials'.[20] Shrinkage of fodder in the summer months not only forced the shepherds to be more mobile but also increased mortality.[21] If the crisis persisted for several seasons, there was risk of permanent decay in the quality of the wool. Both problems, shrinkage in pastures and degradation, were found to be present in eastern UP in the first decade of the twentieth century.[22]

With the increasing cost of rearing, there are reports from several parts of the country of broad shifts in rearing, increasing regional and occupational specialization, and shrinkage of the extent of rearing.

In most parts of eastern and southern India, where no more than the coarsest wool was utilized, adverse economic conditions degenerated the existing sheep to an extent that 'they bear fibre . . . more

[19] Watt, *Dictionary*, p. 602.

[20] D. Narayana Rao, *Preliminary Report on the Survey of Cottage Industries in the Bellary District* (Madras, 1927), pp. 15–20.

[21] N.N. Banerjei, *Monograph on the Woollen Fabrics of Bengal* (Calcutta, *c.* 1900), p. 2.

[22] Kunwar Jagdish Prasad, *Monograph on Carpet Making in the United Provinces* (Allahabad, 1907), p. 16.

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akin to hair than wool'.[23] Simultaneously, the instances of families who reared sheep, sold wool, spun yarn, and wove it, became increasingly rare. In the 1920s, the Tariff Board believed that such families were nearly extinct outside Kulu, Kumaon, and certain parts of Kashmir.

Elsewhere shepherds tended to
move into the cities[24]
into farming[25]
permanently migrate in search of pastures[26]
resettle in zones where no more than tiny flocks could be maintained[27]
leave their traditional mixed occupations and specialize in
rearing[28]
textile production,[29] or trade[30]

[23] India (Agricultural Marketing Department), *Report on Marketing*, p. 10.

[24] Many bricklayers in Bengal at the turn of the century were found to be former shepherds, Jogendranath Bhattacharya, *Hindu Castes and Sects* (Calcutta, 1896, reprinted 1968), p. 242.

[25] Kurubas of Mysore, see L.A. Aiyar, *The Mysore Tribes and Castes*, vol. IV (Mysore, 1926), 'Kuruba'.

[26] Intermittently over the last half of the nineteenth century, many shepherd communities of northern India shifted closer to Nepal, see Pim, *Monograph on Woollen Fabrics*, p. 17.

[27] About 1900, nearly all of the small settlements of Gareries, north Indian shepherds, found isolated in Bengal, a region otherwise devoid of good sheep or an indigenous woollen industry, were immigrants from Bihar who had been itinerant since the 1850s, Banerjei, *Monograph on the Woollen Fabrics of Bengal*, pp. 3–4, 15.

[28] Panipat, a major wool producing area of the north, is probably an example of shepherds moving away from blankets into rearing, India (Agricultural Marketing Department), *Report on Marketing*, p. 33.

[29] The Gadaria, shepherds confined to riverine Punjab, 'even in that part of the province . . . has almost ceased to be distinctively a shepherd, as the cultivating classes themselves often pasture their own flocks, and has become rather a blanket weaver, being indeed as often called Kambalia as Gadaria', Denzil Ibbetson, *Panjab Castes* (Lahore, 1916), 303. Many Dhangar sub-castes of western and central India had, by the 1920s, settled down 'as stationary husbandmen or wool-weavers', Enthoven, *Tribes and Castes*, I, pp. 312, 321. In 1918, an article on Mysore wrote, 'There are some places in which the weavers [read the Kuruba rearers-cum-weavers] have taken to agriculture . . . and there are places where like Pavagada [the largest centres] the industrial class of people devote their whole time to weaving', G. Santavirappa, 'Sheep Rearing and Kumbli Weaving in the Tumkur District', *Mysore Economic Journal*, November 1918, p. 696. In the 1880s, there were settlements of Dhangars on the Konkan coast close to Bombay, who maintained flocks and wove blankets from their own wool. But the demand was so great (or the supply of wool so little), that they both bought wool, and bought blankets from remoter areas of the western Ghats to meet the local market. Watt, *Dictionary*, p. 630.

[30] The blanket merchants of western Uttar Pradesh, especially in Meerut and Muzaffarnagar, were Gadarias themselves, *Census, 1961, Uttar Pradesh, Woollen Carpet and Blanket Industry of Uttar Pradesh*, XV(VII A) (Allahabad, 1964), p. 88.

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Consistent with this tendency, concentration within rearing increased. In place of what was until recently a collectively performed enterprise, sheep-rearing tended to return owners of large flocks, better-able to handle risks, and shepherds hired by them for sometimes very low ages.[31] Those who continued on their own, did so on fairly rigid contracts under wool merchants, who paid advances and specified prices.[32]

Some of these changes are captured, if inadequately, in quantitative data. Census data on employment in wool and related sectors is unreliable. Nevertheless, ignoring unusually large numbers for 1911 and 1921, there appears to have been a long decline in the number of sheep-breeders and shepherds, carpet-weavers, blanket-weavers and woollen apparel makers on handlooms between 1901 and 1961. The total number in these classes fell from close to a million in 1901 to about 400,000 in 1961. Census data on the major wool-producing provinces is even more unreliable. The totals for major provinces change erratically and so wildly that no economic reasons can be attributed to the variations.

Livestock census and data on production of wool suggest a broad picture consistent with the changes we have just described. Essentially, sheep rearing tended to move towards two regions, western India and southern India (Table 1). The regions losing sheep were the Gangetic plains. The former regions had one strong common feature: both included arid zones with plentiful supply of common lands, even though a great deal of it was of very poor quality even to sustain sheep. Needless to say, *within* western and southern India, similar shifts in flocks were happening too. The estimate of percentage of wool produced in western India in 1951 is almost certainly a gross underestimate. Descriptive evidence strongly suggests a relocation of supply channels already by 1950. However, the difference between percentages of flocks and wool supply may indeed convey a real difference. A great deal of the sheep that remained in the more densely populated and land-scarce agricultural areas was irrelevant

[31] In Bihar at the turn of the century, families that owned and tended flocks, processed and spun the wool, wove and sold the fabric, still existed, but were rare. Alongside, there were shepherds who specialized as weavers and bought wool, who wove part-time along with performing general services for the village, and those that reared large herds. The last were the most prosperous group, who hired in other shepherds. See Banerjei, *Monograph on the Woollen Fabrics of Bengal*, pp. 3, 7, 11–12.

[32] Prasad, *Monograph on Carpet Making*, p. 16, Mirzapur.

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TABLE 1
Distribution of Sheep and Wool Production

	Sheep (number in millions)			Wool (quantity in '000 tonnes)		
	1924	1951	1992	1929	1951	1995
India	34.7	39.2	50.8	45.5*	36.7	41.5
Rajputana/Rajasthan (%)	9.2	13.0	24.6	–	2.4	42.0
Gangetic plains (%)[a]	24.1	9.8	14.1	–	28.9	17.3
South India (%)[a]	53.2	56.6	37.4	–	29.3	16.6

Sources: India, *Statistical Abstracts of India*, various years, India, *Live-Stock Statistics 1924–25*, (Calcutta, 1926). *Estimated by the Indian Tariff Board. [a]'Gangetic plains', using the term flexibly, consists of Uttar Pradesh (UP), Punjab and Haryana (Punjab), Bengal, Bihar and Orissa; 'South India' consists of Tamil Nadu (Madras), Andhra Pradesh (Hyderabad), Karnataka (Mysore).

for wool trade. After independence, south India retreated, relatively speaking, and Rajasthan emerged as by far the largest wool-producing region. We need to remind ourselves that the percentages in Table 1 did not stand for market-shares, in terms of which land frontier trade should dominate all other sources until 1951.

Two simple inferences can be drawn from this broad shift. First, market transactions and long-distance trades expanded in wool. Second, wool production and wool usage tended to separate. Large flocks tended to disappear in the Gangetic plains. Apparently, there was also a large fall in the number of shepherds. Yet, the Gangetic plains remained the main user of wool in carpets and apparels. It got this wool from western India (Rajputana), locally (a declining but still substantial source), and from across the northern frontier. In south India, the main rearing region came to be Mysore. Its clients were both a local woollen apparel industry and a carpet industry located in Arcot on the southeastern coast. In the next two sections, we look more closely at these two classic tendencies in turn—commercialization and specialization.

III

The Indian wool economy was heavily dependent on foreign trade throughout the colonial period. In 1929–33, production of wool was

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TABLE 2
Trade in Wool and Woollens, 1900–1938–9 (annual average)

	Raw wool import by sea		Import of woollens		Export of raw wool
	m lbs	m Rs.	m yards	m Rs.	m lbs
1900–1 to 1904–5	2.8	0.8	16.1	21.4	28.2
1905–6 to 1909–10	2.7	1.0	18.1	24.5	46.3
1910–1 to 1914–15	3.3	1.7	21.8	30.4	51.5
1915–16 to 1919–20	3.3	1.7	6.4	17.4	47.9
1920–1 to 1924–5	3.5	3.0	7.2	28.6	39.5
1925–6 to 1929–30	5.7	4.4	15.5	40.3	49.2
1930–1 to 1934–5	5.6	3.3	9.8	12.4	42.8
1935–6 to 1938–9	7.4	6.3	5.0	8.1	48.6

Source: India, *Statistical Abstracts for British India*, various years.

about 100 million lbs. Import by sea was about 6 million lbs. Export was about 45 million lbs. Import by the land frontier was reported to be, somewhat unreliably, 20 million lbs. Even with a large re-export, this should put domestic usage of wool at about 70–80 million lbs. But curiously, domestic usage was estimated by the Tariff Board at only 37 million lbs. The trade figures suggest that either production was overestimated or usage was underestimated. Production estimate was a multiplication of sheep stock estimate, number of shearings, and wool yield per shearing. Each one was a crude approximation (as it is the case even now) given the wide variety of sheep in the region. But the chance of reliability was better. For these parameters themselves changed rather little over time. Usage, on the other hand, was far more a guess-work, and an underestimation in usage is very likely. Tariff Board simply added up the figures that the provincial governments supplied it, which in turn varied in quality.

In any case, it is clear that the magnitude of usage was growing, assuming production was relatively invariant and given by sheep stock. For, the scale of foreign trade was growing steadily in the interwar period (Table 2). Barring the First World War, the growing import trade consisted of both raw wool and woollens, but after the imposition of a tariff on wool manufactures in the 1930s (see below), the composition shifted in favour of raw wool.

There is no direct way we can estimate the total quantitative impact of enclosure of the commons. Did aggregate wool production change over time? We cannot say, for production and sheep stock

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TABLE 3
Production (1951) and Utilization of Wool (1939) (annual average, m lbs)

	Production in 1951	Utilization in 1939		
		Woollen mills	Carpets	Blankets (estimated)
UP	5·3	4.6	2.1	3·3
Punjab	4·3	3.6	1.6	5·5
Mysore	2.1	1.7	.6	2.2
Bombay	4.8	2.1	–	.9
Madras	4·5	–	.7	1.8
Kashmir	1.7	–	N.A.	1.4
Hyderabad	4.2	–	–	1.8
Rajputana	0.9	–	–	1.3
Bihar	1.2	–	–	1.2

Source: *Report on the Marketing of Wool and Hair in India*, India (Agricultural Marketing Department), (New Delhi, 1946), p. 31.

data are only very broad estimates and do not go further than 1919. More and more raw wool was definitely imported by sea. But the data on land frontier import are unreliable and do not go back further than 1924. On the other hand, export was increasing too, in fact faster than import. Much of the wool imported by sea or land was apparel grade, whereas the bulk of the export was of carpet grade. It would be safe to say that we cannot measure whether or not there was a general shortage of wool in India in the late nineteenth and the early twentieth century due to the enclosures. There is ground to believe that in apparel grade wool, availability increased, whereas in the carpet grade, surplus continued. In trade data, more visible is the impact of changing pattern of consumption.

If we cannot measure overall scarcity or otherwise due to the commons problem, we can say something about the regional shifts in grazing, and consequently, increase in domestic wool trade. Once again, a 1930s snapshot is available showing availability and uses of wool. There were certain basic contrasts between regions. Table 3 shows that at the end of the colonial period there were three types of region, those with large deficit (big gap between usage and local production), those with large surplus, and those that had neither. The first set included Punjab and the UP, the second Bombay, Hyderabad and Mysore, and the third Rajputana, Kashmir and Bihar. It is possible to suggest that this pattern had evolved in the course of shifts in wool trade and production in the previous half a century or

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so. Two major components of wool users, the mills and the blanket weavers of Punjab and UP, were products of that previous half a century.

We can then draw the inference that long-distance trade in wool increased between circa 1880 and 1940–50. There is some more evidence on this trend. Trade returns and crude livestock estimates suggested that, about 1900, in all of UP, local wool supplied 50–67% of local usage. The chief sources of supply were Punjab, Tibet and Rajputana, distributed in the ratio 3.5:2.5:1.[33] Nearly two-thirds of net 'imports', and more of Tibetan wool, was used up in a woollen mill at Kanpur. Comparable earlier figures are unavailable for UP. In Punjab about 1885, local wool supplied 80% of local usage. Table 2, on the other hand, shows that local wool could not have accounted for more than about one-third of the wool used up in Punjab and UP about 1939. At this time, the major flows of wool trade were from Rajputana, south India and the land frontier into the Gangetic plains. We have no evidence that the smaller weaving industries outside of Punjab and UP used a great deal of non-local wool.

The broad regions in India and neighbourhood, where sheep-wool was an item of long-distance trade, were Rajputana, Punjab, Tibet, and Mysore. The wool from these areas was the best-suited for textiles (carpet and apparel). Roughly about half of India's net available wool came from Punjab, Tibet, and Bikaner in 1938.[34] This is 'net available' and not net production. That is, these figures represent (seemingly) local sales net of exports. At this time, only Agra seems to have had a sizeable market for the ordinary plains wool. The bulk of the wool that was sold in Punjab, UP and Bikaner was of carpet and apparel grade. These were brought from three regions of relative excess supply—Rajputana, western Punjab, and Tibet—to be woven into warm clothing in the villages and the towns of the western parts of the Gangetic plains. A considerable frontier trade in Afghan wool also took place every year, to be used mainly in western Punjab.

The long-distance trade in raw wool in northern India had pre-colonial antecedents. For the main consumers of this wool were older products such as carpets. Further, the trade was always dependent on modes of transport older than the railways; an important part of it occurred in terrains where railways never had reached. As late as

[33] Chatterjee, *Notes on Industries*, p. 53; Pim, *Monograph on Woollen Fabrics*.
[34] India (Agricultural Marketing Department), *Report on Marketing*, p. 11.

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the end of the 1930s, two-third of India's total import of wool came from across the frontier. The scale of the frontier trade was believed to be grossly underestimated to escape the predation of customs officials in Tibet and India, and that of robbers who operated in a terrain where the police had little say and where the wool-traders were the most prosperous community. The predominant source was Tibet, but roughly about half continued to be imported from Iran and Afghanistan by one route, and from central Asia by another.[35] Tibetan wares reached the Gangetic plains, and were used in carpets and woollen mills of the UP. The trade was carried on mainly by the Bhotias of eastern Almora, the trading group discussed earlier, and to a smaller extent by a community in the Kinnaur region of what is now Himachal Pradesh, formerly in Punjab. The frontier trade carried on right up to the independence, in what seems to have been increasing scale. The trans-Punjab route between Tibet and the plains was dominated by a community of traders ' identical with the Tartars of Tibet', and who linked the flourishing market at Rampur with those in Tibet.[36]

The pre-eminent trading region was the Punjab. The province had extensive wool-based manufacture—blankets, shawls and carpets. But unlike UP, Punjab was above all a market for wool. Here, Himalayan, trans-Himalayan, local and Rajputana wool were imported, to be re-exported towards Bombay, Karachi and eastward via two or three important market towns.[37] It was this overwhelming involvement in the raw material trade not closely tied to specific manufacturing traditions that subsequently made these towns advantageous locations for powerloom and hosiery industries. The most important market for wool in Punjab was Fazilka. But several other towns, notably, Amritsar, Ludhiana and Multan were frequently mentioned in connection with the trade. All three were known as manufacturers of woollen textiles. Rajputana's trade was associated closely with the eminence of Bikaner, a source of general trading enterprise in India, but primarily dealing in wool.

In the late nineteenth century, major Punjab markets such as Amritsar and Ludhiana grew as trading and manufacturing

[35] The trans-Karakoram trade has recently been studied by Janet Rizvi, 'The Trans-Karakoram Trade in the Nineteenth and Twentieth Centuries', *Indian Economic and Social History Review*, 31(1), January 1994, pp. 27–64.

[36] Watt, *Dictionary*, p. 609.

[37] For a description of the wool trade in Punjab, see D.C. Johnstone, *Monograph on Woollen Manufactures of the Punjab in 1884–85* (Lahore, 1886), p. 2.

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centres.[38] In this trend, the railways played a role. The connection between Rajputana and Agra made the latter the main market for western Indian wool. The connection between Punjab and UP helped the carpet industry in the latter to survive and flourish. Not all of western Indian wool went towards Punjab or UP. As Bombay came to be connected with Marwar and Kathiawar, the wool of western India found another outlet, towards the port city. From Bombay, it was at first exported, but by the late nineteenth century, was utilized by local woollen mills. Although the railways did not change the basic structure of frontier trade, the towns where a large part of the final sales took place included important railway termini. And most of these grew as entrepôts from the late nineteenth century. The Himalayan trade ended at Tanakpur, Ramnagar, Haldwani, and Rampur, four market-towns at the foothills, whose importance as locations where hill-wares exchanged for those of the plains depended on the location of the rail-routes which more or less followed the old trade-routes in the sub-Himalayan plains. And finally, a number of markets within Rajputana, chiefly Bikaner and Jaipur (or Shekhawati), George Watt's correspondent reported, were growing as points of wool trade, and in the case of Shekhawati, of wool usage as well (in a felt industry which declined later).

It is not clear whether in these large markets for wool, sale was primarily spot or contractual. The main users of wool include both large and small firms, the former of more recent vintage. There is evidence that these firms did use advance contracts more and more. Spot sale in frontier wool was not replaced easily by contracts. But, in the twentieth century, the woollen mills of northern India tried to contract with the Bhotias directly. Because of the slowness of transit, these had to be entered much ahead of the time when the supply situation in the plains became known.

These trades had recent origin insofar as some of their destinations were of recent origin. The three most important new users of traded wool were, the mills, the blanket-makers of western UP, and the Ludhiana garment industry. How did they appear? Whom did they replace? To get an answer, we need to look at changes in the textile industry more closely.

[38] R.H. Davies wrote in 1864, 'This rising city . . . monopolizes the import of raw silk . . . is the principal mart in the Punjab for the cotton fabrics . . . the gold thread . . . metal utensils . . . sugar . . . and the seat of shawl and silk manufacturers, . . . advancing yearly in wealth and population'. *The Trade of Central Asia* (London, 1864), p. 32.

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IV

The textile industry was affected by changes in wool production and markets in two immediate ways. There was greater dependence on long-distance trade and on traders, in wool.[39] And there was a change in the structure of transport costs borne by different regions for the wool these regions used. Dependence on traders increased because markets and market information had gone out of easy reach of the producers of wool.[40] On these bases, it seems likely that the advantages of northern India in woollens and carpet-weaving tended to increase against the south in the early twentieth century. On the demand side, the same tendency was perhaps reinforced by the increased competition between coarse and finer woollen garments, creating a bias for better-quality traded wool from regions which retained their reputation in rearing.

The five main uses of wool in India were: blankets, carpets, shawls, felts, and garments. The manufacture of woollen garments in India is very closely associated with the mills and hosiery factories, and the rise of the mills and hosiery with the beginning of worsted manufacturers. Felts were a disappearing industry during our period. Shawls were too localized, and by the material used or technologies involved, rather distinct from the rest of the handloom woollen industry.

Carpets

In north Indian towns patronage of pre-British local rulers had led to the growth of a number of highly skilled crafts. This was so especially in the heart of the former Mughal empire, in towns such as Delhi, Agra, Amritsar, Lahore, Multan, Srinagar, Lucknow, Moradabad, Farrukhabad, Benares, and others. The most important among the skilled crafts were woollen carpets, engraved brassware, wood carving, ivory carving, jewellery, decorated pottery, shawls, etc. These were urban crafts, and had participated in long-distance trade

[39] The Mysore Kurubas who specialized in blanket weaving, possibly as a result of the shrinkage of pasture, also had to travel to the cities, Mysore and Hyderabad, for wool, Narayana Rao, *Preliminary Report . . . Bellary District*, p. 19. 'There is an increasing tendency for the weaver to be financed from the beginning to the end in all his operations by the local *bania* or *mahajan*', Indian Tariff Board, *Report of the Indian Tariff Board on the Woollen Textile Industry in India* (Delhi, 1935), p. 89.

[40] An ongoing process, see for example Agrawal, *Greener Pastures*, pp. 80–1.

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even before the nineteenth century. But the main reason they had existed was the consumption of the rich residents of these towns. In some cases they were made inside factories owned by the elite customers. In the colonial period, many of these rich customers became impoverished. But at the same time, these products began to be exported, and traded over long distances within India. Woollen carpet is a major example of export, one that survives as an important handicraft export from South Asia. The market for carpet abroad was expanding with rising prosperity in Europe and North America. India was usually an easier location for the European and American merchant firms to deal with than were Turkey or Persia.

One result of commercialization was increasing competition between craft towns. In this competition, many towns that had the industry on a small scale, that were located too far from new trade routes, or that did not produce good quality products disappeared. The industry came to be concentrated in fewer places where most of them can be found today. In recent times, the major centres were Agra, Amritsar and a cluster of towns in Eastern UP. Of these, the fortunes of Agra and Amritsar carpets improved quite dramatically in the interwar period. One factor was clearly the central location of these two towns in railway connection with the ports.

New types of merchants appeared and they wanted to take control of production. What emerged was a variety of contractual systems between the old family firms or master-artisans on the one hand, and the merchant on the other. One example is Agra and Amritsar carpets, where European and American carpet traders started factories in the interwar period. In these factories, several master–apprentice teams came and worked. They were not the owners' employees, but contractors who brought their own work-teams to the factory. Such two-stage three-party contracts—between the merchant and the master, and master and apprentices—were often known as *karkhanadari* in northern India.

Garments

Mid-nineteenth century descriptions of indigenous handwoven woollen garments, such as those to be found in Baden-Powell's documentation of Punjab textiles, suggest explicitly that woollen garments were not a very popular attire anywhere in the plains of India. The much more common winter-clothing consisted in cotton stitched

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garments, with perhaps a padding of cotton-wool. Cotton indeed was better able than wool to withstand the long and hard monsoons. For the same reason, competition between local warm garments, and the somewhat more expensive but better-quality imported merino, flannels or broadcloth, did not become a serious concern to the cotton handloom industry.[41]

Habits did change, however. It is clear that, about 1920s, cotton as winter-wear was on the way to extinction, replaced by woollen garments. Presumably better storage and the growth of a middle-class market for garments worked to popularize the use of woollen garments in place of handspun cotton.[42] However, on the side of production, the popularity of wool as winter-wear did not concern the woollen handlooms very vitally. Handlooms in woollen garments did indeed exist. But it was a minor tradition confined mainly in households. It used a rather rough process of manufacture that dispensed with much of finishing and dyeing, and survived at that level mainly due to remoteness.[43] The rise of woollen garments was really an effect of new demand such as defence and domestic preferences, a new form of enterprise or the mills, and a new raw material, imported worsteds.

The history of woollen mills in India began in 1876 with two factories established by the British India Corporation, a north Indian managing agency, at Dhariwal in Punjab and at Kanpur. Kanpur was an emerging mill centre, an important army base and source of army supplies since the mutiny. Both were situated on, or conveniently close to, trade-routes in country wool. The mills in Bombay and Bangalore that followed in the next decade, likewise, had easy access to traded wool from southern Rajputana and Mysore. Initially, the main business of the mills was to supply hand-woven coarse blankets and garments for the army, and to spin yarn for the carpet industry. The mills in that sense originated in a production context in which traditional industry and modern industry were inseparable. During the decade that opened with the First World War, dramatic changes took place. The war demand forced a rapid expansion in weaving capacity in the mills. Considerable excess demand still remained, met by the resources of the cottage handlooms. Many small shops

[41] Pim, *Monograph on Woollen Fabrics, passim* on warm clothing in the north, and competition on garments.

[42] On the urban demand for imported woollens, see Banerjei, *Monograph on the Woollen Fabrics of Bengal*, p. 12.

[43] Chatterjee, *Notes on Industries*, pp. 57–8.

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TABLE 4
Production and Employment in Woollen Mills, 1900–1 to 1946–7

	Number employed in thousands	Production in million lbs.
1900–1	2.9	3.4
1913–14	4.1	5.1
1919–20	7.3	6.8
1929–30	8.1	12.2
1939–40	11.1	15.7
1946–7	19.1	29.5

Source: From S. Sivasubramonian, *The National Income of India in the Twentieth Century* (Delhi, 2000), Table 4.24.

manufacturing tweeds and rugs mushroomed in northern India in response. There was also diversification. The mills began to make finer cloth using worsted yarn, for which the wool had to be imported.

The interwar period was generally one of stagnation. The 1920s started with a crash, as government demand ceased, exchange rates appreciated, and the small workshops found it difficult to survive. The decade, however, also witnessed a certain polarization within woollen manufactures. Towards its close, the mills had stabilized. Some had changed hands and/or been liquidated. But a new group of woollen hosiery factories had emerged, mainly in Punjab, utilizing imported worsted yarns. 'The old established handlooms [rather knitting-frames] of the hereditary weavers of fine woollen tissues [were] an essential part of the industry'.[44] About 1928–9, cheap woollens from Japan, Italy and Poland began to trouble the mill industry once more, who now asked for protective tariffs. However, as in cotton, the interests of the mills, who manufactured inputs, and the hosiery sector, who used the cheaper imported inputs, had by then diverged. The division was not yet decisive, for some hosiery manufacturers seemed to be weighing the prospects of getting into yarn production. But a division did exist. The Tariff Board exempted yarn from duties. But imposed tariffs on cloths, with the apology that 'anomalous conditions call for anomalous remedies'. The recommendation was rejected by the government on the ground, among others, that the handloom weavers had been poorly represented in the inquiry. The balance of advantage, thus, tilted towards small nonintegrated weaving/knitting shops. These oppositions became

[44] Indian Tariff Board, *Woollen Textiles*, p. 50.

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irrelevant in the Second World War, which came as a great growth opportunity for small and large producers alike.

Shawls

By contrast with woollen attire, both shawls and blankets were always important handloom traditions. In the mid-nineteenth century, some places in the lower Himalayas and adjacent plains had fairly extensive trade in shawls. Some of these centres did decline. The rather remote eastern Indian shawl traditions, such as a Gorakhpur cotton-wool produce traded in the Terai, do not seem to have survived for long.[45] On the other hand, in Kashmir and in at least three towns of Punjab, the finer goat-fleece from Tibet including 'pashm' and Kashmiri artisans, had given rise to an industry in shawls that was well-known to French and English consumers. The history of this trade and that in carpets proceeded in somewhat comparable manner. There is also reason to believe that carpets arose from the ruins of the plains shawl industry. Great surge in speculation led to traders and producers taking liberties with quality in shawls, which spoilt the market, induced a reorganization of trade towards contracting between European wholesalers at origin and destination, and eventually forced a diversification from shawls into hosiery and carpets.[46] The diversification did not destroy shawls. It survived on a smaller scale in Srinagar. This episode is interesting for the causes of the collapse of this very established tradeable were the subject of a contemporary debate. The English, who came here a little later, blamed the French for over-intervention. 'With true

[45] Made in a factory and several households of the local Julahas in 1907, see Chatterjee, *Notes on Industries*, p. 58.

[46] The worst crash in the London auction of shawls occurred in 1861. Writing a little after this event, R.H. Davies attributed it to the practice of adulteration of pashmina with sheep wool, at least by the plains artisans, *The Trade of Central Asia*, p. 31. A few years later, H. Baden-Powell wrote: 'The shawl trade has not decreased; on the contrary, . . . it has increased, but its character has changed considerably; formerly the trade was limited to a certain number of well-known firms. There used to be a large demand for shawl fabrics at the Courts of Delhi, Lucknow, Sindh, &c; now, numbers have embarked in the trade, and amongst them many are mere speculators. The appointment of gentlemen from England and France, as agents of large firms in those countries, has brought about a considerable change in the designs and patterns'. There were also attempts to improve quality. See *Handbook of the Economic Products of the Punjab*, vol. 2 (Lahore, 1872), p. 53.

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French caprice', Vincent Robinson wrote in reference to Kashmir, '... new fashions came to dethrone the Maharajah's shawls and straightaway the trade dwindles into nothing'.[47] In Kashmir, the Maharajah himself induced the switch to carpets.

In Punjab, one of the towns that thus diversified with remarkable success was Ludhiana. Here, in the 1870s, the major product was a plain shawl known to the export trade as 'Rampur chaddar'. Yet, possibly before the First World War, and certainly during the war, Ludhiana's main products were woollen garments supplied to the army under contracts of the Munitions Board. Defence was central in this initial accumulation. But the later growth of the industry in Ludhiana owed a great deal to an export market and an expansion of capacity in which mechanized processing played a significant role.[48]

Felts

Felts, like shawls, were a small and localized craft in the early twentieth century. In the northern plains, about 1905, only one district, Bahraich, seemed to be well-known for the very limited quantity of felts it still turned out. Elsewhere, it was a rapidly disappearing industry. Unavailability of any detailed reference to the once famous felts of Shekhawati makes one suspect a similar fate for itself. Felts' main use was in saddlery, preferred by the native cavalry regiments for the winter. With the Kanpur mills supplying army demand, and leather saddlery rapidly replacing felts, these went into disuse.

Blankets

In 1920, there were probably 100,000 handlooms engaged in woollens in British India and the states. For a comparison, cotton and silk handlooms numbered approximately two million. However, it is possible that the requirement of subsidiary employment per loom was greater in wool than in cotton, since woollen yarn was still largely handspun. A majority of these looms was engaged in the weaving of blankets. A distinction between coarse and fine blankets was com-

[47] *Eastern Carpets*, Second Series, Bernard Quaritch (London, 1893).

[48] A comprehensive recent study on hosiery at Ludhiana is by Manjit Singh, *The Political Economy of Unorganised Industry: A Study of the Labour Process* (Delhi, 1990).

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monly made in descriptions of the industry. It becomes sharper and more frequent as one enters the interwar period. Thus, in Baden-Powell's writings of 1872, blankets were mainly coarse. But the woollen monographs of the turn of the century made a distinction, and in the Munitions Board contracts for defence blankets in 1914–18, one mainly meets finer products and the towns specialized in such products.

It is hard to define 'coarse' blankets in terms of grades of wool, since one of its attributes was precisely a lack of standardization. During his journey around Vellore, Francis Buchanan-Hamilton described the coarse blanket in the following terms,

> In the neighbouring villages many coarse blankets, or *cumlies*, are woven from the wool which the country produces. When offered for sale, they are as hard as pasteboard; but this quality is given to them by a decoction of the kernels of the tamarind, and is entirely removed by the first washing. They seem to be an article of dress in almost universal use above the *Ghats* or passes, and the families of the weavers may be readily distinguished by their wearing no linen.[49]

Generally, the poorest quality wool available locally, with a quantity of hair that made it unfit for most other purposes, found its way into a kind of blanket commonly called coarse, though the precise nature of the material varied between regions. Everywhere it was a purely utilitarian product. And apparently of high wear and tear, so that it always found consumers to whom price mattered more than durability, texture, or softness.[50] The peculiar cost-saving that coarse blankets of the plains did enjoy derived from the fact that they were woven by the shepherds themselves. Blankets of this kind were as ubiquitous as the sheep from which the wool came, and sold very cheap at weekly markets or post-harvest rural fairs, a number of which took place just before the winter.[51]

Like rearing of sheep itself, coarse weaving is nowhere known to be a specialized occupation. It always remained the sector that util-

[49] *Journey from Madras*, vol. I, pp. 41–2.

[50] 'The Indian villager lays by his blanket all through the hot weather and the rains, when insects naturally attack it. He has, therefore, to invest in a new blanket every year', Chatterjee, *Notes on Industries*, p. 55.

[51] In Bihar, the famous Sonepur livestock fair was always a major market for blankets, carpets and cotton durries. See N.G. Mukherji, *A Monograph on Carpet-Weaving in Bengal* (Calcutta, *c.* 1900), p. 9. Fairs appear to have been somewhat more important in wool and blanket trade than in cotton cloth trade. Sheep-rearing was itself a mobile profession and, as Sonepur illustrates, the shepherds dealt in blankets along with sheep at the major livestock fairs. Besides, though widespread, geography constrained the trade points to be located less evenly than consumption.

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ized the residual wool with very small alternative uses. It was not paying enough to be taken up by specialist weavers and thus subjected to guild-like barriers. Being a subsidiary to rearing, weavers were mobile and not subject to the regulations on occupational choice that settled rural life came to acquire. Therefore, it was an occupation that seemed to be open to almost anyone. The primary participants in wool weaving were the shepherds. But it is known to have been taken up by coarse cotton weavers in many places, by village servants elsewhere (the Dheds of Gujarat), and even by the butchers of sheep (isolated Muslim weaving groups in Bombay-Deccan).[52]

The industry, carried on by 'ignorant and unenterprising shepherds' who transferred the results of poor breeding practices onto the blankets they wove for charges that were well below subsistence, was nevertheless a very large one, perhaps next in industrial employment to cotton weaving in many parts of the country.[53] Rarely were coarse blankets traded over long distances, though in the interwar period, such trade was not entirely unknown in Mysore.[54] But, the essential demand seems to have been local. And the character of a necessity made the manufacture of coarse blanket very widely spread, its trade almost nonexistent, but the demand highly stable. 'Never has the Kuruba felt any anxiety for the disposal of his goods. He does not know where the demand comes from, but is always able to sell his wares almost at his doors'.[55] Obviously, all that this stability derived from was a certain remoteness of the consumer. The post-1950 trends show the fragility of that basis.

Of the major wool-using sectors, neither carpets, nor shawls, nor the better quality blankets or woollen garments, could utilize the common wool of the plains. For the same reason, the two large factories in Kanpur and Dhariwal, at first supplying woollens to the army and gradually catering to urban civilian demand as well, had to locate its raw material supplies in long-distance trade and not in what was available in the neighbourhood. By 'fine' blankets, we shall refer to that sector of the industry which utilized apparel wool.

[52] B.A. Brendon, *A Monograph on the Woollen Fabrics of the Bombay Presidency* (Bombay, *c.* 1900), p. 6.

[53] Chitra and Tekumalla, *Cottage Industries*, pp. 71–2. Daily income from weaving coarse blankets in central India in 1945 was estimated to be As 1.5, perhaps not more than 20–25 per cent of average rural or craft wages at the end of the war.

[54] Santavirappa, 'Sheep Rearing', on trade in Mysore blankets, p. 697.

[55] D. Narayana Rao, *Report on the Survey of Cottage Industries of the Kurnool District* (Madras, 1927), p. 11.

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The features of finer blanket trade and industry can be set out more or less by comparison with coarse. The superior blankets utilized the better quality traded wool. These were made by shepherds in many districts, but not exclusively by them. Further, the weavers were often merely shepherds by caste, but had moved away from sheep-rearing towards full-time weaving or trade. They did not make the wool themselves, even though they knew the craft of weaving, and had to travel some distance to obtain the wool. The pre-weaving processes such as sorting and spinning of wool tended to be a domestic industry. But overall, there was greater division of labour in finer blankets. Especially, post-weaving processes that added to the finish of the product were extremely important. If coarse blankets were necessarily 'consumed within a limited radius of the centre of manufacture',[56] finer blankets moved relatively longer distances and thus required specialized trading groups. Examples of the latter were army contractors, 'Kabuli' merchants, or agents of the shops in the hill districts.

It is likely that these features—greater specialization, multiplicity of processes, division of labour—became more established in finer blanket weaving from the late-nineteenth century when northern India was connected up by railways. Trade in wool was facilitated. That in turn brought out the quality-differences in wool more sharply. The market for finer blankets as well as for wool concentrated, which would enable a separation between trade and manufacture. The latter division the coarse goods did not display. Both the World Wars introduced significant, if brief, buoyancy in demand for country-made blankets. It is likely that weaving prospered and partly relocated towards areas within easy reach of the army contractors.

Indeed, northern Indian blanket weaving did seem to gravitate towards populous and well-connected districts of the western UP in the first half of the twentieth century. Meerut-Muzaffarnagar area is the best example. The antecedents of Muzaffarnagar blankets are obscure. But it was the railways that enabled it to develop as a base from where finer blankets were exported towards Bombay and Calcutta.[57] From elsewhere in the country too, the major manufacturing clusters engaged in country-made blankets appear to be far more well-defined in mid-century than about a hundred years ago. These

[56] India (Industries and Supplies), *Report of the Panel on Woollen Industry* (Delhi, 1946), p. 16.

[57] G.D. Ganguli, 'The Art Industries of the United Provinces', *Report of the First Indian Industrial Conference held at Benares, 1905* (Allahabad, 1906), p. 350.

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include southern and coastal Andhra; Tiruchirapalli, Madurai and Coimbatore in the deep south; Mahboobnagar, Warangal and Yadgir towns in northern Andhra, and extensively in the Punjab and Mysore. A part of this concentration must be attributed also to the shrinkage and relocation of sheep-rearing towards areas that could support better breeds and easier grazing conditions.

The urban handlooms, especially in Muzaffarnagar and Bijnor in UP, and Panipat and Ludhiana in Punjab, received great encouragement during the First World War when the Munitions Board began to contract orders in these cities for blankets and smaller articles. Many cotton weavers in these cities shifted to wool. The existing woollen manufacturers expanded and diversified. The war orders were large indeed, increased many times within a few years, and were estimated to have used up practically the entire supply of blanket wool in India around 1917–18.[58] Not surprisingly, the 'effects of the prosperity' were dramatic in a town like Muzaffarnagar, which executed much of the orders for blankets.

In the long run, the centralizing tendency in production and marketing of a good that had hitherto been extremely diffused and hence manufactured in myriad different ways led to attempts at technological standardization and modernization. The Kanpur mills, for example, introduced systems of sorting of the country wool. Likewise, carpets in several locations introduced greater division of labour in wool-preparation.[59] Accumulation in towns like Muzaffarnagar and Ludhiana created a diversified industrial base in garments for export and domestic usage. Powerloom weaving advanced from the time electricity connections expanded in these industrial cities in the interwar decades. There is a contrasting pattern in the development of powerlooms. In Punjab, the tendency to convert handlooms was strong in both cotton and wool. But in UP it was weaker. While relative capital deficiencies might be one reason, another was that labour-saving was less attractive in regions and branches of the textiles whose strength derived from a decorative and urban craft tradition. This, at any rate, was mentioned as a probable check to Punjab's own conversion into powerlooms.[60] The finest products of that tradition were, undoubtedly, the carpets of northern India.

[58] Indian Munitions Board, *Industrial Handbook* (Calcutta, 1919), pp. 41, 44–5, 195.
[59] Pim, *Monograph on Woollen Fabrics*, p. 2, Mirzapur carpets.
[60] Indian Tariff Board, *Woollen Textiles*, p. 90.

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Conclusion

As far as one can guess, wool was earlier produced and to a large extent woven by the shepherds themselves, because both sheep-rearing and domestic labour were relatively cheap. Sheep-rearing was cheap because commons and wastes were plentiful, and because it provided the shepherd with plenty of free time. Arable land was frequently used as pastures for sheep flocks because such a practice improved fertility of the soil. However, the quality of such home-grown wool was rather poor.

From the end of the nineteenth century, formal or informal closures of the commons and wastes reduced the supply of home-grown wool. Long-distance trade in both wool and woven products expanded. Sheep-rearing relocated towards areas that could support easier grazing conditions. The railways played a role in deciding which regions would specialize in woollen weaving. Thus, Rajputana specialized in wool production, Punjab as a major market, and UP as a major weaving centre. At the same time, imported better-quality woollen garments altered tastes and introduced new standards. Consumers increasingly did not want the coarse rural blankets. They preferred the finer products made in new weaving establishments in the cities using traded wool. Competition from urban weaving and depletion of pastures brought about a separation between spinning, weaving and the rearing of sheep. Specialization increased.

This large and diverse transition has by no means finished happening. Colonial in origin, the declining access to common grazing lands continued after 1947. It is possibly the single most important factor in shaping the quantity of wool yield and the quality of indigenous flocks now. In recent works on pastoralist communities, formal or informal enclosure appears as a powerful force shaping their economic future.[61] It is likely that what we are seeing here is a constant shifting of the field of the conflict, as formerly land-surplus areas become land-scarce with increasing population growth, the consequent need to expand cultivation, and the diffusion of seeds and water that can make cultivation possible in arid zones. In other words, combining the history and the present experience of wool seems to illustrate a change in the dynamics of access to the commons. What was earlier an issue of definition of property rights is now, at least significantly, a demographic problem. What was earlier

[61] For example, Agrawal, *Greener Pastures*.

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an issue of quantity of grazing land is now also an issue of quality of grazing land. And what was earlier a problem mainly of southern India is now mainly a problem of western India.[62] To my knowledge, no work so far exists studying these continuities and differences between the colonial and the post-colonial periods on pastoralists and their enterprise.

[62] The relevant literature on the effects of degrading biomass and the quality of the commons upon the wool economy has been discussed in Sunil Ray, 'Declining Production Conditions of Raw Wool: Analysis of Emerging Conflicts in Sheep Husbandry in Rajasthan', *Economic and Political Weekly*, May 15–21, 1999.

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