

The Impact of The Waste Lands Legislation and The Growth of Plantations on The Techniques of Paddy Cultivation in British Ceylon : A Critique*

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I

The Waste Lands Ordinances No. 12 of 1840 and No. 1 of 1897 and the expansion of cash crop plantations for which they are believed to have paved the way have been a popular target of criticism for several decades. It is alleged that these developments led to the expropriation of land used by the inhabitants of the Kandyan Highlands (the Central Highlands) on a large-scale, thereby influencing the agrarian history of these regions in an adverse manner.¹ Recently, in what are no more than ancillary arguments in their hypothesis, two economists have drawn attention to another feature of this impact. Arriving at their conclusions independently, both S. B. D. de Silva² and Buddhadasa Hewavitharana³ have alleged that a process of chain reaction was generated which ended in a serious retrogression in the technology of paddy culture in Ceylon.

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Please note that the forms AR and SP in the citations refer to *Administration Report* and *Sessional Paper* respectively.

1. *SP XVIII of 1951*, The Report of the Kandyan Peasantry Commission, pp. 69-77.
A. B. Perera, "Plantation Economy and Colonial Policy in Ceylon", *Ceylon Historical Journal*, Vol. I, (July 1951).
Ralph Pieris, "Society and Ideology in Ceylon during a 'Time of Troubles', 1796 - 1850, Part III", *University of Ceylon Review*, Vol. X, (January 1952).
I. H. Vandendriesen, "Land Sales Policy and Some Aspects of the Problem of Tenure 1836-1886; Part II", *UCR*, Vol. XV (January-April 1957).
N. K. Sarkar, and S. J. Tambiah. *The Disintegrating Village* (Colombo : The Ceylon University Press Board, 1957) pp. xi-xiii.
W. Don Michael, "Some Aspects of Land Settlement", *The Ceylon Economist*, Vol. IV (January 1958).
J. B. Kelegama, "The Economy of Rural Ceylon and the Problem of the Peasantry", *The Ceylon Economist*, (September 1959).
2. S. B. D. de Silva, *Investment and Economic Growth in Ceylon* (London University: Ph. D. thesis in Economics, 1962), pp. 192-94.
3. Buddhadasa Hewavitharana, *Factors in the Planning and Execution of the Economic Development of Ceylon* (London University: Ph. D. thesis in Economics, 1964), pp. 222-23. I appreciate Dr. Hewavitharana's kindness in lending me his dissertation.

According to their hypothesis, the expansion of plantations under the aegis of the Waste Lands Ordinances led to a loss of forest, chena and pasture – in de Silva’s words “drastically curtailed the traditional access of cultivators to forest and waste land”. Or, as Hewavitharana phrases it, in the Wet Zone the “clearing of land deprived paddy of its handmaiden - forest”. At the same time, the neglect, and the consequent deterioration, of the irrigation works in the Dry Zone in the course of the nineteenth century affected the cattle population in that region. The limitation of pasture in turn led to a deterioration in the condition and numbers of local draught animals. Cattle murrain (rinderpest) added its quota of disaster to this trend.⁴ As a result, paddy cultivation was seriously affected through loss of manure and animalpower. In the meantime, population and paddy land continued to increase. The scarcity of draught animals generated by these trends raised hire charges. All these factors created a spiralling tendency for the peasantry to rely on manpower rather than animalpower in preparing their fields. Technology had taken a large step backward.

As a convenient shorthand, this interpretation can be labelled “the chain reaction hypothesis”. It is simply and plausibly constructed. The evidence supplied by de Silva is brief but fairly powerful : it is derived from the *Administration Report* of the Government Agent of Kandy, H. S. O. Russell, for 1869 (written in June 1870) and the *Sessional Paper VI of 1908*. Hewavitharana’s evidence on the foundation points is negligible and is limited to a table which shows the number of cattle per hundred of the peasant population in the census years 1881-1962 and indicates a decline in numbers. The peasant population has been calculated by subtracting the figures for “estate population” from those for the “rural population” in the censuses. The cattle population has been derived from the *Ceylon Blue Books* and Statistical Abstracts which are used without any comment on their reliability. I reproduce Hewavitharana’s figures here.

1881 :	67
1891 :	66
1901 :	79
1911 :	68
1921 :	59
1931 :	40
1946 :	32
1953 :	31
1962 :	29

4. S. B. D. de Silva does not refer to rinderpest at all. Hewavitharana mentions it, referring to Leonard Woolf’s diaries as his documentation, but his emphasis is such as to place this factor in a secondary causal category.

One can provide some of the basic points in the chain reaction hypothesis with more muscle and sinews than its authors have employed. The observations of H. S. O. Russell, the Government Agent of the Central Province, in the course of the years 1870-72 provide strong evidence in its favour. In 1872 he noted that he was

trying to prevent the sale of common pasture land on account of Government, or by underhand bargain of private parties, but [that] the evil of indiscriminate alienation of such land [had] already been carried so far that in many places no pasturage [was] left for villagers' cattle, and in others beasts [could] be turned out to graze only at the risk of their straying into neighbouring coffee estates, where they [would] be impounded or shot.⁵

With the comment that the circumscribed pasture land made it "no longer possible for the beasts to live in herds", he argued that this was the main cause of the prevailing "degeneracy" of the cattle. In his view "scanty food and exposure to weather" also served as contributory factors.⁶ Such views are supported by the evidence of a District Judge of Kandy (Staples) who noted (in 1852) that the people complained of a scarcity of pasturage, and by a similar complaint in a newspaper in 1856.⁷ A decade later a district officer in Badulla complained that the hire of a pair of buffaloes in the vicinity of the town had risen within the past five years from 1s. to 3-4s. *per diem*, while attributing the scarcity of buffaloes solely to the effect of rinderpest.⁸ And decades later, in the course of his autobiography Tikiri Banda Panabokke complained that as a result of the sale of chena lands to the planting interests "pasture land for cattle . . . disappeared and so cattle farming as a means of livelihood also came to an end".⁹

5. 1871 AR, (Kandy District and Central Province), H. S. O. Russell, 23 March 1872, p. 41
6. *Idem* and 1869 AR, (Kandy District and Central Province), H. S. O. Russell, 27 June 1870, p. 39. Also see *infra*, pp. 180-81.
7. CO 54/296, H. J. Staples - Pakington, 17 December 1852, Encl., Memorandum relative to Kandyan Affairs, 5 December 1852, *Colombo Observer*, 7 April 1856.
8. SP IV of 1867, Report of the Committee appointed by the Legislative Council on the 7th December 1866, to inquire into Irrigation Works and Rice Cultivation in the Island of Ceylon, with Appendices: Appendix, Part I (Replies from) the A. G. A. Badulla, W. W. Hume, 28 February 1867, p. 54. In reporting that cattle were only used to a highly limited extent in Matara District, its district officer conjectured that this was the result of "difficulties ... in providing pasture", [*Ibid.* pp. 91, 102-03]. Since few coffee plantations existed in Matara District and since it was fairly well-irrigated, the causal factors postulated by De Silva and Hewavitharana could not have operated in this region. From the district officer's report above and administration reports of the mid-nineteenth century, it would seem that the problem in a large part of Matara was created by a growing population and the expansion of cultivation.
9. P. B. Panabokke and J. A. Halangode (ed.), *The Autobiography of Tikiri Banda Panabokke* (Kandy: Miller & Co., 1938?) p. 23. This book is part autobiography (up to p. 33) and part biography. T. B. Panabokke (snr's) life-span was 1846-1902. The reference to "cattle farming" must be considered an exaggeration and should be treated loosely as equivalent to cattle-rearing, because cattle farming in the strict sense of the phrase was not a significant feature of the old Kandyan Kingdom. Also note that the Panabokke's themselves owned cash crop plantations [*Ibid.*, p. 30 and general knowledge] but this was possibly on ancestral lands.

Secondly there is a certain amount of evidence on the role of forests in village ecology. From forests, Ceylonese villagers gained honey, game, oils, jungle rope, firewood, and fence sticks and timber for agricultural and building purposes.¹⁰ Forests were also used for pasture and as easements to the paddy fields (as in Burma).¹¹

But the question remains how vital they were to the village economy in various parts of the island. Students have invariably, and too readily, accepted the view that they "played a vital part in the village economy, both directly and indirectly", and contributed to a balanced agriculture.¹² Mere enumeration of their uses does not suffice. Further tests must be applied. In the Central Highlands¹³ and the foothills the useful role of forests (both primary and secondary) in serving as catchment areas for rain, and in preventing rapid surface run-off of rainfall and thereby reducing soil erosion, can be accepted. On other fronts, however, their usefulness is debatable. It is difficult to give them much significance, for instance, where coconuts grow profusely or small gardens exist in plenty. Coconuts are not productive at elevations beyond 2500 feet above sea level and are of only marginal productivity at elevations between 1500-2500 feet.¹⁴ But, as we shall see, in Kandyan times the main settlement areas in the Central Highlands were between 1200-2500 feet.¹⁵ While the extent of coconut in the Highlands today almost certainly exceeds that which would have existed in the nineteenth century, coconut groves were not unknown to the Kandyans of early British times.¹⁶ It is doubtful if primary forest was used extensively as pasture in Kandyan and early British times because of their denseness and the beasts of prey they contained, though some glades would have been utilised where accessible. Coconut groves, village gardens and uncultivable (even by cash crops) scrubland provided alternative sources of pasture to that provided by

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10. CO 54/487, Gregory - Kimberley, No. 237, 31 July 1873.
CO 54/345, Ward - Newcastle, No. 46, 29 August 1859, App. H. in Encl. 4 (Memorial to Governor Mackenzie from some inhabitants of Sabaragamuwa District), 3 November 1840, pp. 301-03.
1871 AR, Nuwarakalawiya, T. W. Rhys-Davids, 16 July 1872, p. 90.
 11. J. S. Furnivall, *Colonial Policy and Practice*, new edn. (New York : 1956), p. 107.
 12. N. K. Sarkar and S. J. Tambiah (1957) p. xi.
 13. The whole of the central highland mass - best demarcated by the 1000 foot contour - which is known as the Central Highlands lies within the former Kandyan Kingdom, (the Kandyan Provinces in the terminology of British times).
 14. Information supplied personally by Dr. Gerald Peiris of the Geography Department, University of Ceylon. Also see Elsie K. Cook, *A Geography of Ceylon* (London : Macmillan & Co., 1931), p. 180 and R. E. Lewis, "The Rural Economy of the Sinhalese (more particularly with reference to the District of Sabaragamuwa) with some account of their superstitions", *JRAS, CB*, Vol. II, Part II, No. 4 (1848), p. 4.

patana,¹⁷ chena,¹⁸ and secondary forest lands. Besides providing straw, paddy fields also provided sources of pasture after the harvests¹⁹ - a seasonal source which was (and is) of considerable value (in terms of the fodder normally available to village cattle), particularly in areas which had (and have) only one crop. Fence sticks and fuel could also be garnered from sources other than secondary and primary forest or recently chenaed land, notably from village gardens (*tennes* and *wattes*), uncultivable scrubland, and hedges. Game was probably not vital to the vegetarian-minded Kandyan,²⁰ though one must be cautious in estimating the extent to which Buddhistic notions were honoured in the practice, particularly by the menfolk. Nor was honey a staple. It is on such reasoning that Jayawardena concludes that forests were only of marginal utility to Kandyan village ecology.²¹ Neither Gregory nor Gordon (two Governors of Ceylon) would have agreed with this view. For Gregory considered it "almost tantamount" to expulsion of the villagers to permit the clearing of the small patches of forest which grew in the vicinity of their homesteads,²² and Gordon considered forest indispensable to the village.²³ These are no half statements but the

17. Patana, a word derived from Sinhalese, refers to grasslands in the Hill-Country. They must not be considered in terms of the grasslands common to Europe. For the most part they consist of coarse and tufty grass, the commonest being mana grass and illuk as well as lantana - the latter a comparatively recent (nineteenth century) foreign intrusion which has spread rapidly in the moist zone highlands up to about 3500 feet. Patanas are especially characteristic of the eastern and drier slopes and have been a prominent feature for at least two centuries. Some patanas, chiefly at lower elevations, are dotted with trees and scrubs and are known as talawa patanas. See *SP XLIII of 1882*, Forest Administration in Ceylon: Report on the Conservation and Administration of the Crown Forests in Ceylon, F. D'A Vincent, pp. 23-24; and Elsie K. Cook (1931) pp. 161-64; and R. A. de Rosayro, "Notes on the Patanas of Ceylon", *Bulletin of the Ceylon Geographical Society*, Vol. 9, 3 & 4 (July-Dec. 1955), pp. 35-43.
18. Chena land, derived from the Sinhalese *hena*, refers to land on which a form of shifting cultivation is practised on the slash and burn method. It is akin to the *taungya* of Burma and the *swidden* of Indonesia. It does not refer to the work of nomadic people. For the most part it is a form of cultivation employed by inhabitants of settled villages. It should be noted that all forest is potential chena land (provided the climate and terrain enables chena cultivation). Chena land, however, refers to tracts of land which are regularly chenaed or which have been recently chenaed. It will be evident that the secondary growth on such land will vary according to the soil and the stage of regeneration of a particular chena plot. Where the chena cycle of a locality covers a long period and where plenty of land exists, there will generally be an overlap of the categories "chena land" and "secondary forest" (except where the process of chenaing has resulted in permanent scrubland conditions).
19. Information communicated by Dr. Gerald Peiris. Also see R. E. Lewis (1848) p. 37. Where the three-shift system of cultivation operated and where land was allowed to lie fallow or abandoned, uncultivated paddy lands would have provided perennial pastures.
20. Hunting wild animals was banned in the eighteenth century but was clandestinely practised, (Lawrie MSS. Vol. III, Crimes and Punishments). "Beef here may not be eaten; it is abominable", noted Knox in his *An Historical Relation of Ceylon*, Ryan's edn. (Glasgow: James Maclehose and Sons, 1911), pp. 138-39.
21. L. Jayawardena, *The Supply of Sinhalese Labour to Ceylon Plantations (1830-1930), A Study of Imperial Policy in a Peasant Society* (Cambridge University: Ph. D. thesis in Economic History, 1963) p. 46.
22. CO 54 487, Gregory - Kimberley, No. 237, 31 July 1873.
23. A private letter from Lord Stanmore (Arthur Gordon) quoted in Jayawardena (1963) pp. 16-17.

question remains how knowledgeable the two Governors were. In short, the question is difficult to measure and the boundary between marginal utility (irritation if lost) and vital role (burdensome if lost) is not easy to draw.

II

I propose to examine the main tenets of the chain reaction hypothesis as elaborated above. That part of the hypothesis which treats the waste lands legislation as the root cause of the results depicted pertains to the whole of the Wet Zone and that portion of the Central Highlands which falls within the Dry Zone but supports plantations. It also applies to a span of twelve decades and is said (by implication) to have occurred between the 1830's and the 1940's. But it is also implied that the detrimental effects were evident much earlier than the 1940's – by 1870 according to de Silva's evidence and by the 1920's on Hewavitharana's tabular evidence. Since the clearing of forest and other land for plantations were relatively more pronounced in the Central Highlands than in the Wet Zone lowlands, the theory will be examined largely (though not wholly) with reference to the Highlands. At the same time the accent will be laid on developments in the period when coffee culture predominated (the Coffee Period) from the 1830's to the 1880's.

III

I would draw attention first to two related and unspoken premises in the chain reaction hypothesis. These are: (a) the premise that, prior to the advent of the allegedly injurious forces it describes (that is, before the 1830's and 1840's), the Kandyan paddy-cultivators relied largely on animalpower rather than manpower in preparing their fields; and (b) the premise that there was an adequate number of draught animals for the existing population in the pre-British era and the early decades of British rule.

Being unspoken, no documentation is presented in support of these assumptions. This can be remedied. One must turn, as so often, to Knox. In a detailed description of the arts of paddy cultivation among the Kandyans and in the illustrations he provides, Knox leaves no doubt that buffaloes were used to prepare the fields, by dragging the plough as well by puddling the mud with their feet.²⁴ The possibility remains that buffaloes became scarce between the mid-seventeenth century, when Knox was held captive in the Kandyan Kingdom, and the early-nineteenth century. One cannot discountenance the possibility that the scorched earth policy implemented by the British forces in suppressing the rebellion of 1817-18 might have produced a setback in the buffalo population and in the technology of paddy culture with which it was associated. The coffee planter, R. E. Lewis's account of cultivation operations in the district of Sabaragamuwa, however, reveals that it was not uncommon for draught animals to be used in cultivation operations.²⁵ The witness of the chief headmen who appeared

24. Robert Knox (1911) pp. 12-18.

25. Lewis (1848) pp 36 & 49.

before the committee on cattle trespass in 1852-54 and the reports of the committees inquiring into rice cultivation and cattle disease in the late 1860's provide further confirmation that draught animals were in use within the Central Highlands.²⁶ As a Governor observed in 1854, in resisting pressure from the plantation interests for a more stringent law against cattle trespass, "the chief property of the natives in many districts" consisted of cattle.²⁷ Such evidence can be supported quantitatively by concentrating on the administrative unit known as the Central Province which encompassed the larger portion of the Central Highlands.²⁸ The cattle and buffalo population of the province in the year 1851 was estimated at 100,000 by its Government Agent when he provided statistical returns on the impact of a rinderpest epidemic in 1852.²⁹ For what they are worth³⁰, the government returns show the following numbers of "horned cattle" (i. e. presumably buffaloes and neat cattle) in the Central Province in the middle decades of the century :

1846 :	76,253
1851 :	98,393
1856 :	118,168
1861 :	108,312
1866 :	113,510

Unfortunately such statistics do not distinguish between neat cattle and buffaloes. Their significance is further reduced by the fact that they pertain to a period which had seen some expansion of the cattle and buffalo population within the Highlands,³¹ rather than to pre-British and early British days.

26. *Report of Committee on Cattle Trespass* (1853) pp. 3, 5-6, and *passim*; *SP IV of 1867*, Report on Irrigation Works and Rice Cultivation, with Appendices (particularly the replies to question No. 21); *SP XX of 1869*, Report of the Cattle Disease Commission, and Appendices, *passim*.

27. CO 54/309, Anderson - Grey, No. 60, 25 October 1854.

28. The Central Province in this period (as carved out in 1833) consisted of the administrative districts of Kandy, Matale, Nuwara Eliya, and Badulla (Uva). Uva was created a separate Province in 1886. The eastern and northern borders of the Central Province contain Dry Zone lowlands but the greater part of its land mass can be said to constitute part of the Central Highlands. Portions of Kegalle District and Sabaragamuwa (Ratnapura) District within the Western Province (of the mid-nineteenth century) and a small segment of Kurunegala District within the North-Western Province constituted the rest of the Central Highlands. Kegalle and Ratnapura Districts were formed into a separate Province, that of Sabaragamuwa, in 1889.

29. *SP XX of 1869*, Cattle Disease Commission, Appendix with Extracts from Annual Reports etc., E. R. Power's Report on the Central Province in 1852, p. 49.

30. *Ceylon Blue Books* for the relevant years, from the section on "Agriculture". These statistics are based on returns sent by headmen and were (and are) generally considered unreliable. It is my supposition that headmen based themselves on the *lekammiti* (registers of village agrarian statistics on ola leaves) which were compiled in the period 1820-1840's. In which event the *lekammiti* must be deemed somewhat unreliable. Be that as it may, the prodigious task of analysing the *lekammiti* is bound to yield a harvest of information, including data which could resolve the issues which I am examining.

31. *SP XX of 1869*, Cattle Disease Commission, p. vi.

Conclusive as this body of evidence might seem, its general validity is seriously challenged by two pieces of evidence from local sources. The observations of a Low-Country Sinhalese entrepreneur in the Kandyan districts, one Hannadige Jeronis Pieris, constitutes one. In the course of a letter³² to his younger brother in the year 1854, he penned three paragraphs describing the agricultural practices of the Kandyans, with comments which bear the marks of a shrewd observer.³³ I present the most pertinent extract here:

Most of the paddy lands round about Kandy are situated on the bases of hills and consequently easily irrigated by the streams running down these hills, which is not at all as you will see in paddy fields round about Colombo. The agriculture of these mountain-like paddy fields, I may so call them, is not conducted by the bullock, nor the muddy parts by the buffalo, but are tilled all over by the hoe, differently shaped from that in use among us: except in few instances where the fields are situated between two hills or two ranges of hills and consequently sufficiently level to be worked by the buffalo, I have never seen them use bullocks in ploughing.

Paraphrased in summary form, his account contains three points of historical significance: (1) the Kandyans did not use bullocks (i. e. neat cattle) in ploughing; (2) he had occasionally observed them using buffaloes to plough fields which were located at lower levels and were both muddier and possessed of stretches of level land; (3) generally they tilled their fields with a hoe and did not use draught animals. Taking the passage as a whole, the inference is that even on the relatively low-lying and flatter stretches of fields, draught animals were seldom employed.

Now Jeronis Pieris was not a mere urbanite though he had been educated at the Colombo Academy and bred in Moratuwa (then, no more than a village) and Colombo. In the 1850's, he was employed in a managerial capacity by the de Soysa brothers, Jeronis and Susew, to whom he was closely related. The de Soysa enterprises included coffee culture, arrack rents (farms), the supply trade and transport contracts. From the situation of the de Soysa plantations Jeronis Pieris would have been familiar with the locality around Hanguranketa and the areas contiguous to the Kandy-Hanguranketa road (part of which Jeronis de Soysa constructed).³⁴ Since his executive duties included the management of the arrack rents taken up by the de Soysas and since he engaged in trade (either for the de Soysas or on

32. Letters of Hannadige Jeronis Pieris, 1853-56, No. 12. To Louis Pieris, 18 October 1854.

33. For instance, a brief but critical description of the weeding practices; and an emphasis on the fact that the trifling capital resources in the hands of the "respectable [Kandyan] farmers" retarded improvements in the land.

34. *The Examiner*, ? 1856, Letter to editor from "XYZ" (a Ceylonese landowner in Matu-rata). By an oversight we have not noted the exact date of issue. One of Jeronis Pieris's letters describes a trek up the mountain adjacent to the Hanguranketa properties, leaving no doubt that he visited the plantation.

his own account),³⁵ it is reasonable surmise that he had wide travelling experience throughout the administrative unit known as the Kandy District, if not the Central Province as a whole. Since he visited Colombo now and then,³⁶ he would have possessed some familiarity with the roadside localities between Kandy and Colombo. Delineation of his range of regional experience is important. In Ceylon, agrarian activities and their attendant problems were (and are) notable for their regional differentiation. No account is adequate which is not aware of such regional diversity. The island's economic historians have unfortunately tended to neglect or gloss over such differentiation in charting its agrarian history. In attempting to apply Jeronis Pieris's observations, we do not claim their relevance for the whole entity known as the Central Highlands or the administrative division called the Central Province. The maximum limits within which his comments could be held applicable are Hanguranketa in Nuwara Eliya District, Kandy District; and the areas contiguous to the Kandy-Colombo road in Kegalle District (the latter outside the Central Province). The question remains whether his comments are a valid generalization for this region.

Jeronis Pieris's observations do not stand in splendid isolation. Qualified but strong support is available in the opinions expressed by certain Kandyan "Chiefs and Headmen" in the course of an audience before the Governor in 1834. Their replies to certain queries,³⁷ presumably through a single spokesman and via an interpreter, are so valuable as to merit reproduction in extense:

- 1st: What is the ordinary extent of the landed property of a *Kandyan Inhabitant of the middle class*? About a ammonam of Paddy ground; it is generally cultivated but once a year; and yields about 10 ammonams at 5 parras per ammonam-50 parras.³⁸
- 2nd: Has he any other means of subsistence? He sometimes cultivates chenas, but this is by no means a certain means of subsistence. He has a garden in general containing perhaps 10 cocoanut trees, the produce of which may be reckoned at 12s; altogether, including the produce of jaks and other fruit and vegetables his garden may realise £ 1 10.0. or £ 2.

35. See Letters: No. 8, To C. H. de Soysa, 30 March 1854 and No. 10 to S. C. Perera, 25 July 1854. Most of his letters are addressed from Kandy; as often as not the address reads "Arrack Godowns, Kandy".

36. Indicated in several of Jeronis Pieris's letters.

37. CO 54/198, "An Examination of the Chiefs and Headmen assembled at the Pavilion on the [n. d.] July 1834, in the Presence of the Right Hon'ble the Governor", presented in a little booklet.
Emphasis has been added.

38. An *amunam* is a measure of sowing extent and was generally considered to be equivalent to two acres. In fact, the extent varied from locality to locality and field to field, a great deal depending on the estimated fertility of the land. A *parras* was generally considered equal to $\frac{1}{4}$ bushel.

3rd: *Has he no advantage from cattle?* Very little - milk is not sold, excepting near towns, and very few people of this Class possess buffaloes which alone are used in ploughing. The average profit from the sale of cattle will not exceed 6 shillings.

In a traditional society with relatively little economic differentiation - the most notable differentiation being that of caste and a basic social stratification between a small traditional elite (drawn largely from the *goyigama* caste) and the rest of the populace - one can read "a Kandyan Inhabitant of the middle class" to refer to the large body of service tenants (*paraveni nilakarayo*) who held their lands on a hereditary basis (subject to service) in the days of the Kandyan Kingdom and were in a category of owner-cultivators and landowners in 1834 after the changes effected by the British in the former *gabudagam* (Crown villages)³⁹; while remaining as secure service tenants in the *nindagam* (chiefs' holdings or villages) and *viharagam*. It should also be noted that this term may have referred largely to the *goyigama* landowners as distinct from those of the so-called inferior castes. On this basis, the evidence of the chiefs supports Jeronis Pieris's observation that buffaloes, and not neat cattle, were used for ploughing by the Kandyans. On this reading, too, it contradicts one of the premises in the chain reaction hypothesis in suggesting that there were few buffaloes in the Central Highlands. Thereby, it leads to further suggestion that, contrary to the other assumption in the chain reaction theory, Kandyan paddy-cultivators could not have relied greatly on draughtpower. These suggestions cannot be held conclusive. Buffaloes can be hired and need not necessarily be in a cultivator's possession. In Kandyan society some well-to-do landlords (including temples perhaps) maintained their position and influence through the ownership of herds of buffaloes which they loaned out.⁴⁰ A primitive division of labour also existed whereby the patti people, a sub-caste of the *goyigama* caste, performed the duties of shepherds. Control over the existing stock of buffaloes, or a good portion thereof, may have been vested in their lands.⁴¹

As neither Knox nor Lewis refer to cattle being used on the plough one can accept the evidence that Kandyans used buffaloes rather than cattle (i.e. neat cattle) to plough their fields. The distinction is of some relevance to the chain reaction hypothesis. The replacement of animal power by manpower is predicated on the basis of a decline in the cattle population. To be

39. The *maruvena nilakarayo* (tenants-at-will) in *gabudagam* may also have gained freehold rights.

40. The evidence gathered by the Cattle Disease Commission of 1869 reveals that some individuals had very large herds.

41. These qualifications are the outcome of the Ceylon Studies Seminar on the essay referred to in the first footnote. I am particularly indebted to Dr. Hewavitharana and Professor G. Obeyesekere for some of the ideas which I have incorporated at the end of this paragraph.

valid it must distinguish between buffaloes and cattle, and prove that the quantity of buffaloes declined. Such a distinction does not prevail in the British administrative literature. Both officials and other observers often use the term "cattle" generically to include both buffaloes and neat cattle.⁴² This even applies to the phrasing of the third question that was put to the chiefs in 1834, to the observations of Russell in 1870-72; and the statistical data presented earlier in this essay. The distinction is of some consequence in view of the uses to which cattle were put in transporting goods. From bygone days it was the practice to transport commodities by means of pack-cattle (and perhaps even pack-buffaloes) which were known as *tavalam* cattle. The system continued to prevail in the nineteenth and twentieth centuries in localities which lacked road and railway. With the expanding influence of a market economy in the Highlands (and the Wet Zone) the numbers of *tavalam* cattle must have increased. At the same time, the creation of a road network and the demands of the plantation industry generated a demand for cattle to draw the large number of bullock carts⁴³ which were put into use. Therefore the period after the 1830's witnessed an influx of cattle (and buffaloes perhaps) into the Central Highlands,⁴⁴ and a general increase in the cattle population, within the limitations imposed by deaths through disease and other causes. Equally, with the establishment of railway connections in the Highlands during the nineteenth century and, more vitally, with the advent of the motor car and motor lorry in the twentieth century the role of the cart and the cart-drawing cattle would have diminished—though never to the point of extinction (as we, alas, witness everyday). Hewavitharana's statistical proof must be appraised in this light.

The more crucial questions remain. To what extent were buffaloes used in ploughing operations in the Central Highlands? Were buffaloes found in any significant quantities in the Highlands in pre-British and early British times? On both points there is a stark conflict of evidence. On both points, and particularly on the former question, the weight of the evidence leans towards a position which contradicts the assumptions attached to the chain reaction hypothesis. Jeronis Pieris's experience was largely in Kandy District, the central core of the Highlands, and it is a fair presumption

42. The word "cattle" refers to "beasts of pasture, especially oxen, bulls and cows" (*Chambers's Twentieth Century Dictionary*, p. 167) so perhaps this is not surprising. Some individuals even used the word "bullocks" in a generic sense though "bullock" refers to an ox or castrated bull.

43. In the period 1850-62 (both years inclusive) an average of 873 cart licenses was issued every year in the Central Province, with 673 as the lowest figure and 1369 as the highest figure per year, and with more issued in the early 1850's than later on. This contrasts with the average of 10,961 for the Western Province. See A. M. Ferguson *The Ceylon Directory for 1864-65* (Colombo Observer Press, 1865) p. 187. It is probable that more carts were in use than the registration figures indicate.

44. Presented conjecturally in my seminar paper, this point is confirmed by the following evidence: "Concurrently with the rapid extension of Coffee planting in the Island, cattle were more largely imported from India for purposes of transport by tavelams (*sic*) and carts", (*SP XX of 1869*, Cattle Disease Commission, p. vi).

that the chiefs involved in the audience of July 1834 were drawn from that district. Whereas R. E. Lewis's knowledge pertained to the outlying district of Sabaragamuwa, which (while also well-peopled) lies in the foothills and contains greater extents of relatively flat lands. It is also evident that the use of buffaloes is not a practical proposition on most terraced paddy fields. It is known that they cannot be used in fields which become so soft and muddy that the buffalo tends to sink in deeply. In situations in which labour supplies were abundant,⁴⁵ moreover, cultivators (whether owners or tenants) who did not possess buffaloes would naturally have preferred to resort to manpower; rather than to meet the hire of buffaloes, when cultivating their fields.

In any event, the conflict of evidence is such as to call into question any facile acceptance of the view that buffaloes were an integral part of Kandyan village economy in the decades immediately precedent to the 1840's. More incisive studies are needed to resolve the conflict and to depict the regional differentiations as preliminary steps towards generalization.

IV

Common to both de Silva's and Hewavitharana's interpretation is the acceptance of the theory of large-scale expropriation referred to at the start of this essay. By implication, they argue that expropriation occurred to such an extent that, in conjunction with the expansion of village population, it left little or no forest chena or "waste" for village pasturage. In other words, the traditional, nationalistically-inspired theory of large-scale expropriation is an essential component of the chain reaction hypothesis. Briefly illustrated, the crux of the expropriation theory can be gathered from Ralph Pieris's comparison of the impact of the waste lands legislation and the spread of plantations with the enclosure movement in Britain;⁴⁶ and from the conclusion of the Kandyan Peasantry Commission that in the plantation areas "a century of British administration has left behind hundreds of plantation-locked villages, 'vigorously restricted to their paddy lands'".⁴⁷ In this section the foregoing thesis will be examined.

Though widely accepted,⁴⁸ the theory of large-scale expropriation is based on a mere reading of clause 6 of the Ordinance No. 12 of 1840 (which was re-enacted by Ordinance No. 1 of 1897). Little or no effort has been made to see how the Ordinances were administered, the *prima facie* evidence of injurious results being treated as sufficient proof in this regard. The evi-

45. It is not suggested that this held true everywhere but that it may well have been so in many parts of the Highlands and the Wet Zone generally.

46. Ralph Pieris (1952) pp. 82-86, 100-01.

47. *SP XVIII of 1951*, p. 71.

48. *Supra* p. 157. See also Elsie K. Cook (1931), p. 160 and Bryce Ryan, "Status, Achievement, and Education in Ceylon. A Historical Perspective", *The Journal of Asian Studies*, Vol. XX: 4 (August 1961), p. 468.

dence of injurious results presented to-date has been: (1) an analysis of clause 6 of Ordinance 12 with evidence to illustrate how the Kandyan could not have produced the proofs of ownership which it (the letter of the law) demanded; (2) the witness of several Europeans before a British Parliamentary Committee of Inquiry on the insurrection of 1848;⁴⁹ (3) one concrete instance of appropriation of land belonging to the Aluwihare family of Matale District, as presented by A. C. Lawrie⁵⁰; (4) a powerful oral tradition continuing to dwell in the minds of long-standing Kandyan families,⁵¹ and (5) present-day (mid-twentieth century) evidence of landlessness and impoverishment in Kandyan areas.⁵² Such evidence cannot be brushed aside but, for a problem of wide ramifications, it is thin. Much of the writing on the subject is analagous to an examination of a ship's innards from the crow's nest or poop-deck. As such, and in view of the factors which will be mentioned presently, the contention that there was large-scale deprivation of village land in the Central Highlands must, at best, be cast into the land of the unproven. Such a verdict is particularly relevant to chena land, which constitutes one of the categories of pasture.

In the first place, the theory of large-scale expropriation does not take into consideration the degree to which the judiciary, in several cases taken to court, appears to have emasculated and mitigated the application of the Waste Lands Ordinance of 1840.⁵³ However, the judiciary was only called upon to act in those instances when administrators sought to bring the Ordinance into operation. The more vital sphere was that of executive action.

In the nineteenth century governmental administration of the waste lands, as a district officer noted, was marred by the fact that the problem was left "open" and dealt with "in a highly inconsistent and spasmodic" manner.⁵⁴ Regional differentiation was not limited to the nature of agrarian problems. It characterised administrative practice. The secretariat in Colombo had limited control over district officers and could not ensure uniformity in practice. The district officers stamped their own individuality on policy-application. Practices could vary from district to district at any one point

49. Vandendriesen (1957) pp. 40-46.

50. A. C. Lawrie, *A Gazetteer of the Central Province of Ceylon*, Vol. I (Colombo: The Govt. Printer, 1896), p. 30.

51. Seen in print in Panabokke & Halangode (1938?), pp. 22-24.

52. *SP Paper XVIII of 1951*, The Report of the Kandyan Peasantry Commission. Sarkar and Tambiah (1957) by implication.

53. S. Rajaratnam, *A Digest of Ceylon cases reported during the years 1820-1941* (Tellippalai: American Ceylon Mission Press, 1914), p. 239.

Reports on the Finance and Commerce of Ceylon, C. R. Buller - Col. Sec., No. 577, September 1846, p. 135.

1868 AR, Part III, Report of the District Judge (of) Kandy, J. Berwick, 16 July 1869, pp. 50-51.

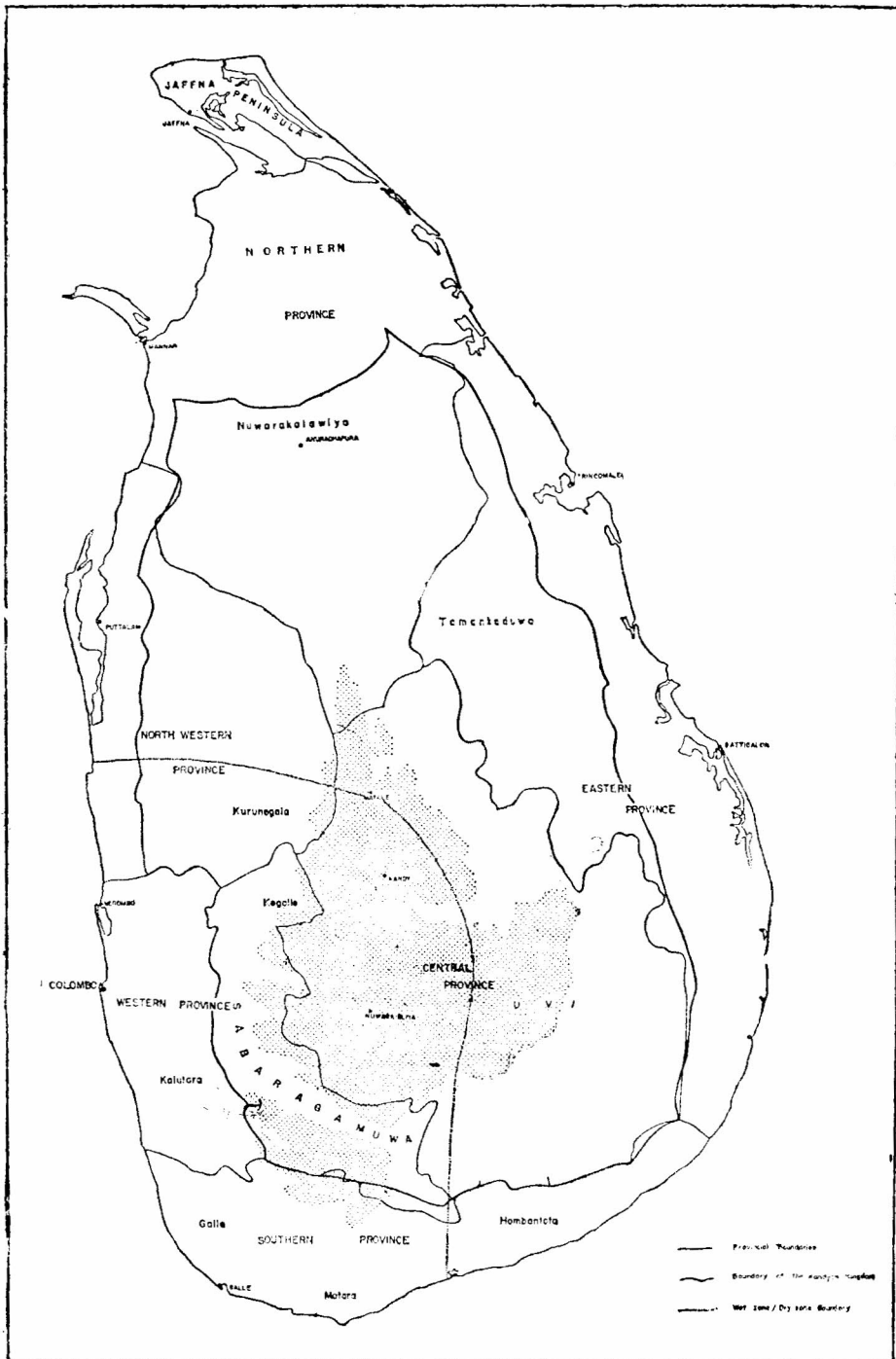
Jayawardena (1963) p. 132 fn.2 quoting a district officer in June 1896.

Also see A.A. Wickremasinghe, *Land Tenure in the Kandyan Provinces* (Colombo: 1924) pp. 17-18.

54. *1872 AR*, Kegalle, A.A. King, Acting A.G.A., 5 June 1873, p. 35.

of time; and could vary within a specific district over a period of time.⁵⁵ With allowance for such unevenness in administrative practice, and the Aluwihare case, the observations of Russell; and other evidences notwithstanding, the weight of the evidence suggests strongly that the Ordinance No. 12 of 1840 was not implemented according to its letter. Government recognised that individual shareholders of paddy land (or villages as a whole) were entitled to possess pieces (or stretches) of highland - "technically known as appurtenances".⁵⁶ They were, however, faced with numerous and extensive claims presented by the local inhabitants, whether on the basis of encroachments or oral testimony. In an attempt to protect what they considered to be Crown rights, particularly with reference to forests containing timber, they seem to have favoured an equitable and rough and ready delineation of Crown and private rights on the lines: "you take some land, we will keep this"; and wherein, they tended to reject claims to virgin forest but recognised claims (or portions of claims) pertaining to land that had been recently chenaed, i. e. to land with vegetation that was a secondary growth.⁵⁷ This brief summary of administrative policy is supported by the lines of settlement favoured in two specific instances, one relating to a claim presented by an individual and the other to a survey settlement of fifty-four villages in the Three Korales in Kegalle District. Don Hendrick Mudaliyar's case was perhaps untypical in that he had a *sannasa*⁵⁸ in support of a land-claim he presented in 1845 and repeated in the early 1860's. But the authenticity of the *sannasa* was questioned by district officers on both occasions. After further enquiries the administration reached the decision that the forest land within the claim belonged to the Crown, but recognised Don Hendrick's title to the forest recently cultivated and to the other cultivated land, (the latter including some chena land).⁵⁹ The second example concerns a survey settlement conducted in the sub-districts of Alutgam, Dehigampal and Panawal Korales

55. For illustration of this feature with reference to the administration of the taxes on home-grown grain see Michael W. Roberts, "Grain Taxes in British Ceylon, 1832-1878: Problems in the Field", *The Journal of Asian Studies*, Vol. XXVII: (4 August, 1968), *passim*.
56. *SP XV of 1873*, Papers relating to the cultivation and survey of chena lands, introduction (by Gregory) p. 5.
57. *Idem*. For further elaboration see M. W. Roberts, *Some Aspects of Economic and Social Policy in Ceylon, 1840-1871* (Oxford University: D. Phil. in History, 1965) pp. 223-73.
58. A royal grant usually inscribed on a copper plate. By the mid-nineteenth century at the latest, forged *sannas* were not uncommon.
59. CO 54/475, Gregory - Kimberley, No. 66, 2 March 1872, Encl. Morgan (Queen's Advocate) - Col. Sec., No. 99, 11 May 1870.
CO 54/477, Gregory - Kimberley, No. 144, 17 August 1872, Appendix in Encl., "Answers to Queries in Col. Secretary's letter No. 224 of 2 July 1872 respecting the claim of Don Hendrick Mudaliyar, from J. F. Dickson, Acting G. A. of the Central Province". Don Hendrick's claim seems to have received partial recognition largely because of rights of possession and not because of the *sannasa*. Also note an instance when a portion of Crown land sold to a planter was rescinded because the Government Agent "was quite satisfied as to the rights of the villagers to the land within certain limits", (See CO 57/27, Executive Council Minutes, 19 September 1860).



CEYLON CIRCA 1860

Map prepared by Dr. Gerald Pieris, University of Ceylon. The shaded area indicates land above 1000 feet.

and Lower Bulatgama in Kegalle District between 1873-74 and 1880. Effected by the European district officers in association with a team of surveyors and the assistance of Eknelligoda Ratamahatmaya and more junior headmen, the settlement involved 1,879 enquiries into the claims of fifty-four villages. Its outcome was the demarcation of "village henyaya" and "Crown henyaya", the specific claims of villagers being resolved by a re-distribution which consolidated all the recognised claims of village into one or more blocks of land; and left the villagers the task of sorting out the detailed distribution themselves. In the result, the villages were allocated 14,807 acres while 19,696 acres were deemed Crown land - 10,789 acres of the latter being described as chena and 8,907 acres as forest.⁶⁰ Without having located a list of the villages in which this settlement was effected, it is not possible to compare the acreage granted to the villages against the population they sustained. The census statistics for the Three Korales (Kegalle District) in the years 1871 and 1881, tabled here, denote 96 and 223 villages respectively.⁶¹ In other

	Villages	Houses	Families	Males	Females	Total Population
1871 :	96	4,660	2,839	13,645	11,586	25,231
1881 :	223	5,395	5,417	15,254	12,754	28,008

words, the settlement encompassed 29-56% of the villages. For whatever its worth, these percentages can be applied to the number of families listed in 1881; thereby producing the conclusion that 14,807 acres had to be shared amongst 1066 to 3033 families.

The conclusion that the Ordinance No. 12 of 1840 was not implemented according to its statutory implications is also supported by a substantial and explicit body of official opinion. One example of this category of evidence must suffice:

it is..... a most erroneous idea that Civilians have been blind to the hardships which might be inflicted on the people by a too rigid adherence to existing statutes nor am I aware that such hardships have been inflicted.....When.....it is

60. See AR for Kegalle District 1873-1884. For the statistics see particularly the report for the year 1879 by Robert Ievers, (20 March 1880) p. 37; and that for 1884 by H. Wace (28 March 1885) p. 22A. Having signed the general agreements which spelled out the broad lines of demarcation, later the villagers had second thoughts about the redistribution of the lands within the village block: those in occupation of land within the blocks refused to give up any portion in the interests of general reallocation. Government found itself without the legal power to enforce such agreements. See 1882 AR, p. 25A. This experience may have contributed towards the formulation of Ordinance No. 1 of 1897 and the creation of a Land Settlement Department. In 1885 Wace complained that the postponement of a definite settlement of village claims to high lands resulted in the "suspension" of Government rights while discouraging private capitalists. In doing so he noted: "It is perhaps Utopian to expect the Kandyan villager to confine his attention to the cultivation and improvement of any one particular land or product, but it is hopeless to expect him, or ask him, to do so, as long as his eye can wander over a considerable extent of land available for chena cultivation in his village and which he feels himself at liberty to clear".

61. *Census of Ceylon 1871*, pp. 21-24 and *Census of Ceylon. 1881, Appendix* pp. 3 & 22-24. In 1871 each unit taken as a "village" often consists of two or more names, suggesting that several hamlets, and even villages, were treated as one unit. The village statistics for 1881 confirm this suggestion. Note that the population figures are exclusive of the estate population.

proved that on many successive occasions the same land has been cultivated even with crops which pay no tax, then I believe Government has invariably, or almost invariably, withdrawn all claim,

argued a district officer named Brodie in 1859.⁶² Though opinion is not a satisfactory substitute for formal tests and specific evidence where one is assessing the impact of any policy, it is of greater significance in any analysis of what a particular policy was. Where an administrator notes that he interpreted Y in such-and-such a way, or administered X in such-and-such a manner, one has (using other evidences where possible) to accept his view (wholly or modified), or reject it as a lie or bona-fide error. In the circumstances (while giving less credence to his conviction that no hardship had been caused) one can attach some value to Brodie's contention that Government had modified the statutory provisions of Ordinance No. 12 of 1840.

His statement is supported by more specific instructions adopted by Government in 1841 and 1871. One set of instructions shows that no sooner was the ink dry on the Waste Lands Ordinance of 1840 (or the Encroachment Ordinance as contemporaries, more correctly, knew it) than the secretariat decided to amend it administratively and recognise prescriptive claims to waste lands. In explaining a previous communication on this point, the Acting Colonial Secretary informed a district officer that the orders

were not intended to convey an explanation of the construction to be put on the encroachment Ordinance as its correct reading but as the authority for the Government Agents to forego the enforcement of the proviso contained in the 9th clause and to permit Kandyans to establish their title by prescription in regard to lands which [could] only be periodically cultivated, and which [were] not subject to any tax to Government.⁶³

It would appear that a general circular of the 27th May 1841 eventually clarified matters on this point.⁶⁴

If the secretariat in Colombo proclaimed policies, the district officers and headmen disposed of such policies. A query arises as to the extent to which such instructions were followed in the provinces and villages. A general circular to the headmen despatched from the Colombo Kachcheri on 5th

62. CO 54/345, Ward - Newcastle, No. 46, 29 August 1859, Encl. in Braybrooke's (G. A. Kandy) memorandum, A. O. Brodie (A. G. A., Matale) - G. A., Kandy, No. 142, 18 April 1859, pp. 237-38.

63. *Ibid.*, Appendix I in Braybrooke's memorandum, Anstruther (Col. Sec.) - G. A. ?, No. 139, 21 April 1841. This letter was drafted by the Acting Colonial Secretary, George Turnour who was previously G. A., Kandy. The previous communication was *ibid.*, Appendix H, Turnour (Acting Col. Sec.) - G. A., Galle, No. 58, 5 February 1841.

64. Dept. of Nat. Archives, Ceylon [DNA Cey.] Lot 41/163, A. G. A., Anuradhapura - G. A., Jaffna, No. 288, 30 August 1855, Encl., A. G. A., Anuradhapura - G. A., Jaffna, 4 July 1854 refers to this circular as recognising prescriptive rights as "title" to chenas, besides proofs rendered by *sannasas* or dues.

September 1872 takes us one notch further down the administrative hierarchy.⁶⁵ Among its rules, the following are of relevance:

1. No tax to be levied on fine grain cultivation.
2. No Crown hena is to be cultivated without special license from the Kachcheri.
3. Private hen cultivated with paddy liable to 1/14th tax, except in proclaimed villages, where the 1/10th is levied.
4. The question of private right will be dealt with liberally - land generally to be treated as private when cultivated regularly at stated intervals.
5. Forcible entry on Crown land will be promptly prosecuted and punished, and the whole crop confiscated.
6. Licensed hen to be taxed at 1/5th for paddy, and when exceptionally allowed to be cultivated with fine grain will be subject to a moderate rent in money.
7. The attention of the headmen is specially directed to the necessity of discouraging fine grain cultivation on Crown property, especially in the neighbourhood of forests, and on land fit for coffee cultivation.

For villages with lands traditionally used for chena cultivation with dry grains⁶⁶ rule No. 4 was of considerable significance. It shows that the statutory form of the Waste Lands Ordinance was not adhered to. Taken as a whole, these instructions support our summary of administrative policy as jealously protective of Crown lands, especially those clothed with forests, while recognising private rights to chena lands that were periodically cultivated. Nevertheless, the question remains how far the headmen sustained such instructions. A clear answer cannot be given without detailed case studies. To imply that these orders were not followed, however, is to say that the headmen followed a line of policy that was harsher on the villagers and more favourable to governmental interests than Government desired. In short, one implies the improbable.

At the very least, these circulars and the body of official opinion that has been briefly illustrated indicate administrative attitudes which were not as harsh and legalistically-hidebound as the theory of the large-scale expropriation implies. In association with the two instances of settlement described above, and in sum, they suggest that the extent of expropriation that is said to have occurred in the nineteenth century is considerably overdrawn.

65. 1872 AR, Sabaragamuwa, E. N. Atherton, 31 March 1873, pp. 27-28.

Also see *ibid*, Kegalle, Aelian A. King, 5 June 1873, pp. 32-35 and *SP XV of 1872*, Papers relating to the cultivation and survey of chena lands. p. 10.

66. Where cultivated with *elvi* and other brands of hill paddy. such lands paid tax at the rate of 1/14th - in itself providing *prima facie* proof of ownership.

In the twentieth century administrative policy was influenced by the newly-enacted Ordinance No. 1 of 1897 and the existence of a Land Settlement Department whose primary task was the definition of Crown and private rights to land. In an analysis which graphically unfolds governmental policy, Lal Jayawardena reveals that the ordinance was "regarded as a device for preventing the peasant from selling village land improvidently himself" and that "the motive of protecting the peasant permeated the provincial administrative machine throughout", though the secretariat in Colombo would not go so far as to accept the radical suggestion that villagers should be legally restricted from alienating their properties,⁶⁷ a suggestion that was forcefully argued for by several district officers.⁶⁸ Proceeding to describe administrative practice by resorting to the diaries of land settlement officers and by studies of specific instances of settlement, Jayawardena shows that settlement officers maintained an orientation that sought to protect the villager and that the process of settlement even tended to curb the sale of private land by the villagers in a situation where villagers were taking increasingly to cash crop culture on their highlands.⁶⁹ In the settlement of twenty six villages in the Morawak Korale during the early 1900's, for instance, some 22,500 acres were declared Crown property and 6,600 acres private land. While the latter constituted only 25% of the total area, its land value was greater than that of the 77% declared Crown; and it was sufficient to provide 5½ acres per man liable to pay the road tax in the twenty six villages.⁷⁰ As a broad conclusion, Jayawardena summarises his findings on administrative policy and practice thus:

British land policy, though limited to the Waste Lands Ordinance, nevertheless had a considerable degree of success in anchoring the peasant to his village and preventing the emergence of an estate proletariat. This was largely the result of the co-ordination of general Government policy before and after settlement with that of the Land Settlement Department during settlement. The main

67. The principle of inalienability was used as a means of protecting customary tenures in several colonies. The Dutch sustained the traditional *adat* law in Indonesia, whereby alienation by villagers to "outsiders" required executive consent. In British colonial policy it was a relatively late development. The Dutch practice was adopted in Nigeria by the "late Victorians" and subsequently in some other African colonies. Earlier, in Fiji, Gordon embodied the principle of inalienability in customary law and thereby restricted government discretion further. See C. K. Meek, *Land Law and Custom in the Colonies*, 2nd edn. (London: 1958) and J. D. Legge, *Britain in Fiji 1858-1880* (London: 1958) pp. 172-81, 194-99.

68. Jayawardena, (1963) chapter four.

69. Jayawardena (1963), chapter four; and pp. 180-94, 211-214, 238-41 and 254-55. For understanding of settlement operations also refer to the following: (a) W. T. Stace, "Notes on Life in Ceylon 1910-1932" (Manuscript autobiography in typescript. Institute of Commonwealth Studies, London) chapter on land settlement, pp. 180-187; (b) Frank Leach's Answers (1) and (2) to Questions forwarded by M. W. Roberts, January 1966 and 25 October 1967 respectively, transcripts available in Rhodes House Library, Oxford and the Library, University of Ceylon; (c) L. J. de S. Seneviratne, "A Hundred Years of Land Settlement" in *The Ceylon Observer Centenary Supplement*, 4 February 1934.

70. Jayawardena (1963) pp. 222-24.

expropriatory influence on the peasant was not indiscriminate Crown appropriation of village land, but sale by the peasants themselves; ⁷¹ and the limits to this process were set not merely by the general tendency of land policy but by the whole pattern of village sale . . . [The] overall effect of policy was in fact to *restrict* the market for land in general: the private market in [land that was not yet settled] for both supply and demand reasons; that in settled land principally for supply reasons, and the market in Crown land because of the requirements of controlled sale . . . and by the need to have "application" sales extensively reported on before sanction. The measure of the success of Government land policy in buttressing the peasantry is then provided by the migration of capital away from Ceylon [-to purchase properties suitable for rubber cultivation in Malaya, for instance].⁷²

Thirdly, with reference to the Coffee Period, the theory of large-scale expropriation does not take sufficient cognisance of the elevations at which plantation coffee was largely grown in relation to the pre-plantation era settlement patterns of the Kandyan. The location of Kandyan villages was restricted by their dependence on paddy cultivation which, in Wickremasekera's opinion, "confined them to elevations less than 3000 feet."⁷³ Their settlements would appear to have been largely concentrated along what is erroneously and generally referred to as the second peneplain - in fact, a level of differential erosion rather than a peneplain. The second level of differential erosion lies at an elevation of 1200-2000 feet, the mural scarp or the step to the third level generally being from 2000 to 4000 feet.⁷⁴ Though the mural scarp effect is subdued by sub-aerial denudation and by intersecting and multiple faults in the northwestern and northcentral parts of the Central Highlands, these comments are confirmed by the fact that the heart of the old Kandyan Kingdom centred around the towns of Kandy, Matale, Kurunegala and Ratnapura. Kurunegala is in the low-lying North Western Province. The populated parts of Sabaragamuwa (with Ratnapura as its main centre) were on the second peneplain and the foothills. Kandy and Matale lie within the Highlands, their railway stations standing at elevations of 1603 and 1152 feet above sea level respectively. One can therefore accept Alex Gunasekera's conclusion that the third level of differential erosion was hardly inhabited till recent times and that "the typical Hill-Country Kandyan settlements" were between 1000 and 2500 feet

71. Among the printed sources, statistical information on such private land sales in two sub-districts is provided in the *Census of Ceylon, 1901*, Appendix F: Report of the Chief Headman of Kadawata and Meda Korales, Sabaragamuwa, Table VI, p. 125.

72. Jayawardena (1963) pp. 254-55.

73. S. B. W. Wickremasekera, *The Social and Political Organization of the Kandyan Kingdom* (London University: M. A. Thesis in Anthropology, 1961) p. 79. This statement must be qualified. There are at least a few pre-British villages above this elevation, among them Kotagepitiya in Kotmale where Dr. Marguerite Robinson undertook anthropological work.

74. D. N. Wadia, "The Three Superimposed Peneplains of Ceylon" in *Records of the Department of Mineralogy*, Professional Paper No. 1, (Colombo: Ceylon Govt. Press, 1944) pp. 25-26. My range of 1200-2000 feet is derived from his figures on the elevations of the two mural scarps: 800-1200 feet from 1st. - 2nd. level; 2000-4000 feet from 2nd to 3rd level. I am also indebted to Michael Katz, Visiting Lecturer, Department of Geology, University of Ceylon, for explaining relevant aspects of the geology of Ceylon.

approximately.⁷⁵ This suggests that their chenaing operations would have been concentrated on the unoccupied hill slopes and valleys which were contiguous to their villages and which must have been largely within the elevations 1000-3000 feet. "Below 3000 feet the chena cultivator is very busy", complained the forester D'A Vincent in 1882-83.⁷⁶ at a time when the population had expanded and, by implication, spread upwards. The coffee estates, on the other hand, were situated principally at elevations of 3000-5000 feet.⁷⁷ This must be taken as generalization. At another point in his report D'A Vincent himself refers to coffee plantations as extending "roughly from 2500 to 5000 feet". Plantations were cleared at much lower elevations in such localities as Dumbara, Kandy, Matale, Tumpane and Kurunegala. Several contemporary observers mention elevation spans of 1500-4000, 2000-4000 and 2000-5000 feet.⁷⁸ But D'A Vincent's observation holds true as a generalization referring to the majority of plantations. It is confirmed by the simple process of superimposing a contour map on a map of the coffee plantations.⁷⁹ In brief, then, the physical area of competition for chena land (as distinct from forest or potential chena, and patana land) was more limited than hitherto recognised. It is correspondingly more difficult to postulate large scale deprivation of chena land.

With reference to the nineteenth century, moreover, the expropriation theory ignores the paucity of population in the Central Highlands. The census of 1824-27 enumerated 256,835 people in the Kandyan Provinces as a whole. The regions comprising the Central Province contained 89,296 of this number.⁸⁰

75. U. A. Gunasekera, *Land Tenure in the Kandyan Provinces of Ceylon* (Oxford University: B. Litt. thesis in Social Anthropology, 1959), pp. 7, 17.

76. *SP XLIII of 1882*, Report on Forest Administration, p. 71.

77. *Idem.* Also see pp. 22 and 24.

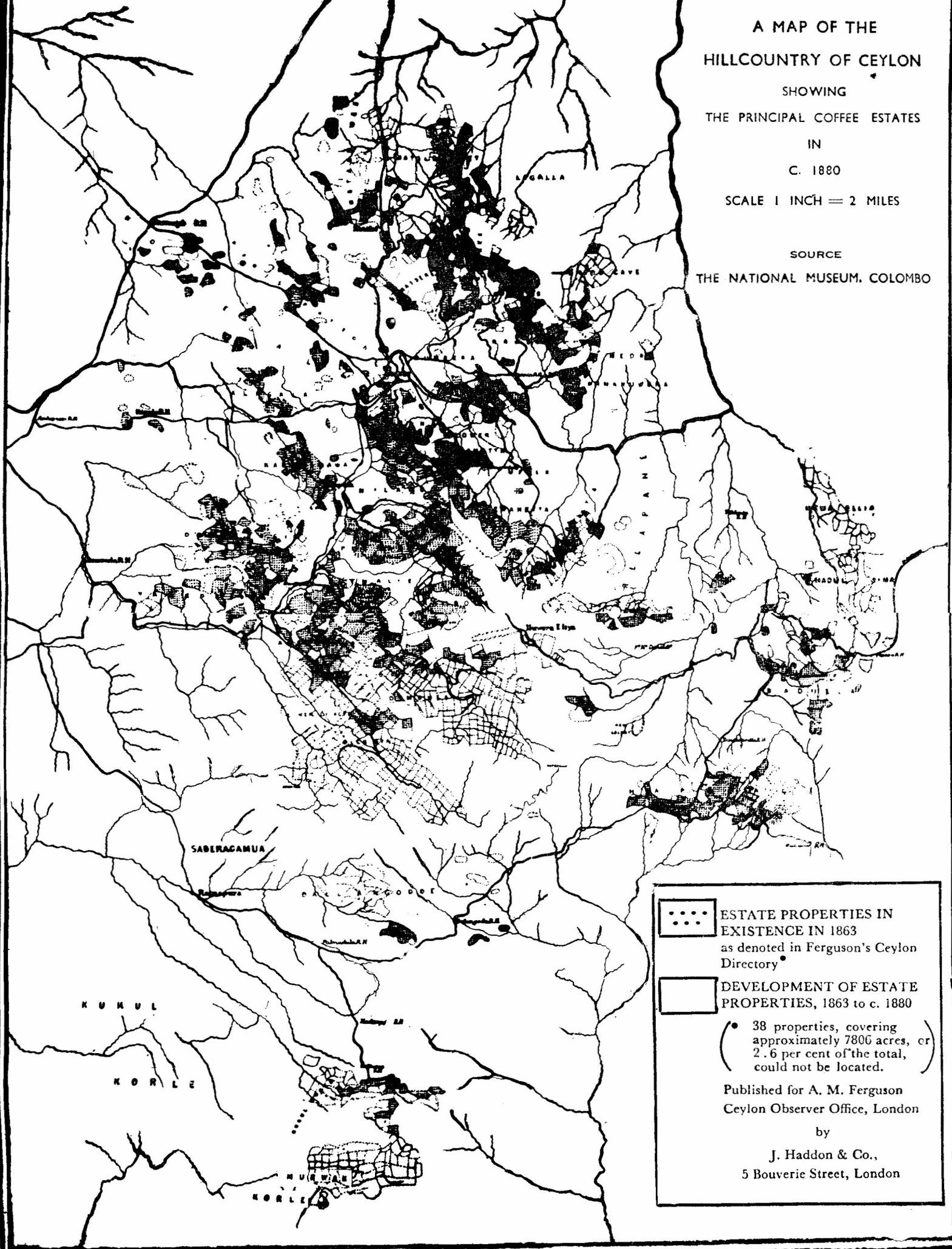
78. From many examples those dating the latest are: W. Sabonadiere, *The Coffee Planter of Ceylon*, 2nd. edn. (London: 1870), p. 7; T. O. Owen, *First Years Work on a Coffee Plantation* (Colombo: 1877), p. 2; W. D. Forsyth, "Coffee Planting in Mexico and Guatemala by an Old Ceylon Planter", *Tropical Agriculturist*, Vol. XII (1 November 1892) p. 503.

79. See maps attached. The map of the coffee estates is based on a copy in the Colombo Museum which can be dated around 1880. Photostats of both contour and coffee estate maps were provided by Surveyor-General's Department, who were instructed to adopt the same scale. With ordinance survey maps of the nineteenth century, however, exactness in scale cannot easily be achieved and there is some fractional difference between the two maps. By using the Mahaweli Ganga as a guideline the necessary adjustments are possible. The cartographical work on both maps was undertaken by two undergraduates, Messrs N. Medis and M. A. Amarasiri, under the supervision of Dr. Gerald Peiris. The delineation of stages of growth was achieved by using Ferguson's *Ceylon Directory for 1863* and was undertaken for general purposes not directly relevant to this essay. The photostat and cartographical work was made possible by a research grant from the University of Ceylon.

80. *Returns of the Population of the Islands of Ceylon* (Colombo: Govt. Press by Nicholas Bergman, 1827), p. 149. It is generally believed that this census was taken in 1824 but Jayawardena makes a case for the year 1821. The figure 89,296 was derived by subtracting the figures for the following districts, the Saffragam (Ratnapura), Four Korales, Three Korales, Lower Bulatgama (Kegalle), Seven Korales (Kurunegala), Nuwarakalawiya and Tamankaduwa.

A MAP OF THE
HILLCOUNTRY OF CEYLON
SHOWING
THE PRINCIPAL COFFEE ESTATES
IN
C. 1880
SCALE 1 INCH = 2 MILES

SOURCE
THE NATIONAL MUSEUM, COLOMBO



ESTATE PROPERTIES IN EXISTENCE IN 1863 as denoted in Ferguson's Ceylon Directory

DEVELOPMENT OF ESTATE PROPERTIES, 1863 to c. 1880

(38 properties, covering approximately 7800 acres, or 2.6 per cent of the total, could not be located.

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The census was probably a gross underestimate.⁸¹ Unfortunately, the statistics presented in the Government's *Ceylon Blue Books* were based on the headmen's guesses and "of no value whatever".⁸² The census conducted in 1871 is more reliable, but had its defects⁸³ and was probably an underestimate. Only from 1881 are we on firmer ground.⁸⁴ Using the earlier figures - including highly uncertain estimates of the total area - for what they are worth, I present a table depicting the population (exclusive of "aliens" and the estate population) in the Central Province from 1840-41 to 1901. These statistics reveal a low average density of population for wet zone tropical lands. A word of caution is needed however. The Central Province included large tracts of sparsely populated land along

Table P: Population of the Central Province (Including Uva)

1 Year	2 Families	3 Population excl. of Estates	4 No. of square Miles	5 Population per sq. Mile
1840-41	—	194, 591	3016	64. 5
1851	—	214, 140	5191	41. 2
1861	—	265, 819	5191	51. 2
1871	77, 349	381, 184	6029	63. 2
1881	93, 213	452, 483	6029	75. 0
1891	89, 582	418, 656	5455	76. 7
1901	106, 061	472, 574	5454	86. 6

Sources : For 1840-41 to 1861 the *Ceylon Blue Books*.
For 1871-1901 the tables in the *Censuses of Ceylon*.

Column 2 : Only available in the census. Except for some districts in 1881, the term was *not* treated synonymously with "house".

Column 3 : The *Ceylon Blue Books* provide a population table which included "Whites" but excluded the military and excluded a separate table entitled "Aliens or Resident Strangers". The *Censuses* provide figures which include the estate population. Our figures have been compiled by subtracting the estate population.

Column 4 : Only from 1881 do the *Censuses* provide the spatial extent of the major territorial units. The Registrar-General who reported on the Census of 1871 was forced to admit Government's ignorance in this sphere. We have used the 1881 figures of 6029 square miles for 1871. It follows that the extents depicted in the *Ceylon Blue Books* are probably inaccurate. The discrepancy between 1840-41 and 1851 is probably explained by the territorial reorganisation of the mid-1840's when the North Western Province was created.

A Note : In 1886 the large district of Uva, which lay within the Central Province, was transformed into a Province. Our figures for 1891 and 1901 comprise a combination of the two Provinces.

81. In a traditional society such novel undertakings as censuses invariably lean towards underestimation while the year 1821-27 were not entirely free of the fears and the havoc wrought in several Kandyan districts following the manner in which the British suppressed the 1817-18 Rebellion.

82. *Census of Ceylon 1881*, General Report by Lionel F. Lee, p. xv.

83. *Ibid*, p. xvi and *Census of Ceylon 1871*, General Report by G. S. Williams, 9 September 1873, pp. x, xiii

84. Sarkar, however, argues that under-enumeration persisted right up to the 1946 census. He puts under-enumeration at between 10-15 per cent in the census years 1881 to 1927 [N. K. Sarkar, *The Demography of Ceylon* (Colombo: Government Press, 1950) pp. 23-68].

its eastern and northern borders. Such areas brought the average down.⁸⁵ As such the average population per square mile veils the population density of specific localities. In certain chief headman's divisions within Kandy District, in Harispatuwa, Lower Dumbara, Udunuwara and Yatinuwara, for instance, the population per square mile in 1891 was 581, 309, 366 and 437 respectively.⁸⁶ Nevertheless, at the level of a macro-picture these statistics suggest that in the nineteenth century the conflict for land between plantation interests and village interests in *most parts* of the Highlands could not have been as widespread as made out.

In the fourth place, the theory of large-scale expropriation ignores the mitigating influence of the governmental policy of demarcating areas as village reserves. This policy appears to have been formulated in the 1850's to 60's at the latest.⁸⁷ There were two types of reserves: those proclaimed under the Timber Ordinance and the Waste Lands Ordinance (No. 12 of 1840) which were meant to be strictly protected from all and sundry; unproclaimed reserves administered by district officers and meant for village use. The latter usually consisted of patches of patana, chena and forest land. Though complaining that the unproclaimed reserves (as well as proclaimed ones) were unsystematically administered, D'A Vincent noted that "large numbers of these so-called reserves under 40 acres existed in many districts, and that Badulla district alone contained eleven hundred with an average area of sixty acres".⁸⁸ D'A Vincent's Report paved the way for a more systematic reservations policy. Ordinances No. 10 of 1885, No. 24 of 1889 and No. 16 of 1907 were instruments in this policy. In consequence one found three categories of reserves carved out between the 1880's and 1929: (1) "Reserved Forests" (2) "Village Forests" and (3) "Communal Reserves and Pastures". The Village Forests were mostly demarcated under Ordinance 10 of 1885 or Ordinance 16 of 1907. The "communal chena reserves", or land "set apart for chena cultivation" were under the aegis of Ordinance 24 of 1889. Lands were also set apart as pasture land without being proclaimed under any Ordinance - a practice that was widely followed in

85. This is clearly seen in the contrast between the population of the Central Province and the Province of Uva (formerly part of the Central Province) in 1891 and 1901.

	1891	1901
Central Province -	126	148
Uva Province -	40	42
Both combined -	76	86

86. *Census of Ceylon, 1891*, Vol. I, p. 8.

87. *SP II of 1872*, Reports on the Working of the Paddy Cultivation Ordinance (No. 21 of 1867), Replies from the A. G. A., Nuwara Eliya, B. F. Hartshorne, 17 September 1872, p. 20.

SP XXIX of 1883, Correspondence on the subject of The Conservation of Crown Forest, Gregory - Kimberley, No. 247, 31 July 1873, pp. 8-9. For elaboration see Roberts (1965) pp. 246-47. Cf. L. J. de S. Seneviratne "Land Tenure in the Kandyan Provinces", *Ceylon Economic Journal*, Vol. IX (1937), pp. 45-46.

88. *SP XLIII of 1882*, Report on Forest Administration, F. D'A Vincent, p. 42. Also see *1885 AR*, North Western Province, C. M. Lushington, n. d., p. 28 A.

the Central Province. Table Q provides data on the extent of land reserved under the three categories in relevant districts, as matters stood in 1929.⁸⁹ Only in Uva and the Western Province do we find an absence of village forests and communal reserves. The Central Province had 2 village forests covering 150 acres, and 133 communal reserves and pastures covering 23,137 acres.

TABLE Q:- Reserved & Village Forests & Communal Reserves and Pastures in Selected Provinces, 1929

Units	Reserved Forests		Village Forests		Communal Reserves & Pastures		Total Extent
	No. of Reserves	Extent in Acres	No. of Lots	Extent in Acres	No. of Reserves	Extent in Acres	Extent in Acres
Kandy	No district details; the name of each reserve being provided		2	150	26	11,601	—
Matale			—	—	3	1,241	—
Nuwara Eliya			—	—	94	10,295	—
Central Prov.	8	12,128	2	150	133	23,137	35,416
Prov. of Uva	7	5,252	1	502	—	—	5,754
Prov. of Sabaragamuwa	28	43,269	29	1,480	7	20,366	65,117
N. Western Prov.	17	142,473	44	1,434	160	18,060	161,968
Western Prov.	4	10,669	83	7,674	1	13	18,357
Southern Prov.	13	131,311	9	536	3	38,571	170,418

Finally, with reference to the century spanning the 1830's to the 1930's the theory of large-scale expropriation cannot be maintained in the face of the broad statistical and other findings of Jayawardena. He shows that the crude definition of such key concepts as "family" and "landless" which were used in the economic surveys conducted under the auspices of the Ministry of Labour, Industry and Commerce in 1936-39 renders their statistical evidence of extremely dubious value.⁹⁰ As he notes, E. R. Leach's criticism of the conceptual methodology in Sarkar and Tambiah's *The Disintegrating Village* also applies to the surveys; and Leach held that the "numerical apparatus" in which the conclusions reached by Sarkar and Tambiah were embedded were "a complicated piece of self deception".⁹¹ Grappling with the historical statistics himself and extrapolating from the agricultural census of 1946, assisted by other references, Jayawardena calculates that in 1930 between 410,000 and 870,000 peasant fami-

89. *SP VII of 1929*, Lists of Reserved and Village Forests and of Communal Reserves and Pastures.

90. Jayawardena (1963) pp. 271-73.

91. E. R. Leach, "An anthropologist's reflections on a social survey", *CJHSS*, Vol. I, No. 1 (January 1958) p. 9. Also see E. R. Leach, *Pul Eliya A Village in Ceylon* (C. U. P., 1961) pp. 242-53, 266-70.

lies had well over a million acres of highland holdings - highland holdings being defined as smallholdings and town and village gardens other than chena and paddy land. But there were only 828,000 families in the rural sector and 152,000 families in the urban sector in the year 1930 according to the population statistics. "In other words, even if every rural family is assumed to possess a cultivated dry land holding in 1930, enough land would have been left over for a substantial proportion of urban families".⁹² He concludes that :

the period up to 1930 . . . saw the creation of the vast bulk of the modern highland peasant proprietorship; that this proprietorship could conceivably have comprised most, if not all, the rural peasant population of 1930; that it was based on the conversion of chena into tree crops, and that, therefore, according to the statistics, land policy could not have resulted in the transfer of chena land to planters on anything like the scale usually assumed, that is, on such a scale as to deny it to the peasant proprietor.⁹³

Clarifying matters in his concluding summary, he notes that the evidence he has marshalled and his main conclusions must not

be held to imply that there was no landlessness, or that landlessness failed to increase during British rule, or even that the peasant never left his village. All they establish is that the plantations as such made far less contribution to the landlessness than is usually assumed to have been the case, and certainly not enough of a contribution to release a supply of labour to plantations, let alone induce any substantial inter-district migration within the Island. The kind of landlessness that did develop was the result of economic relationships within the village, which however failed to liberate a proletariat for the estates because of the availability of alternative work in the village . . . [and] because, on the whole, [the Sinhalese villagers] always and at all times (i. e. years) had access to some kind of agricultural work in the village.⁹⁴

Both his findings and evidence from the nineteenth century draw our attention to two processes which are relevant to our field of inquiry. From the very outset land was alienated to plantation interests (European and Ceylonese) on a significant scale by the villagers.⁹⁵ Rhys-Davids even noted in 1872 that

in the Kandyan coffee districts, ignorance of the real tenure [had] led to individuals being allowed to encroach upon the common property to so large an

92. Jayawardena (1963) p. 265.

93. *Ibid*, pp. 266-67.

94. *Ibid*, pp. 339-40. Also see his examination (pp. 365-73) of population and village statistics for the Central Province between 1821 and 1931. From the population figures he concludes that there was "a compound growth of 2% per annum over eighty years which is a remarkable record of absorption for a rural area [and in the face of which] it is hard to describe the growth of plantations as undermining the pre-existing village economy by taking away vital chena land". From the census data on villages too he finds "little foundation for the proposition that coffee planting undermined the rural economy".

95. *Ibid*, pp. 198-203, and Appendix C, pp. 346-64.

CO 54/237, Torrington - Grey, No. 54, 17 July 1847.

CO 54/345, Ward - Newcastle, No. 46, 29 August 1859, Encl. 3. Memorandum on the Memorial (on the chena question) from the Chiefs, Priests, European Residents, etc. interested in Chena Lands to the Secretary of State by John Bailey (Principal Assistant to the Colonial Secretary), 9 May, 1859.

Lawrie (1896 & 1898) pp. 58, 392, 418-19.

extent, or even to sell portions of it to coffee planters and other outsiders, that there [were] probably very few villages in which the common right [had] not been almost entirely extinguished.⁹⁶

At the same time there was an expansion of the land under permanent (i. e. perennial) cultivation by villagers. The land was sometimes purchased or leased from the Crown, at other times from landlords or temples. As often as not, it was acquired by the process of encroachment and prescriptive right - for encroachments prevailed to a significant extent (impressionistically assessed) in the 19th century⁹⁷ and clauses 1, 7 and 8 in Ordinance 12 of 1840, as amended by the Order - in - Council of the 11th August 1841, enabled prescriptive claims after thirty years undisturbed possession and prevented summary ejection by the Crown after five years undisturbed possession.⁹⁸ With reference to the extent and nature of encroachment I quote D'A Vincent once again:

In the most thickly-populated parts of the Island, and especially in the Kandyan districts, the people . . . have annually encroached on the Crown forest until not only do they now chena beyond the boundary of the village common-land, but they also cut such timber as they require at great distances from their villages. It must before long become a question how far those rights of these people extend and whether the division amongst shareholders of what was village common-land, is to go on to an unlimited extent.⁹⁹

Some of the lands acquired by these means were converted into highland holdings on which cash crops or garden produce were grown.¹⁰⁰

These two processes, and the added weight of an expanding population, bear on the chain reaction hypothesis. Even if the waste lands legislation did not lead to much alienation of village land, it could be argued that private alienation of village land to planters and the expansion of highland smallholdings on the one hand combined with the growth of population and such alienation of village land by the Crown as occurred on the other hand to circumscribe the pasture lands available to the village, thereby generating the chain reaction described by de Silva and Hewavitharana. That there was some such limitation is highly probable, though even the broad proportions are difficult to gauge. But to emphasise these processes and to reduce the adverse influence of expropriation through the Waste Lands Ordinances to a contributory role is to alter

96. 1871 AR Nuwarakalawiya, T. W. Rhys-Davids (Acting A. G. A.) 16 July 1872, p. 91. Note that this comment supports the view that there was very little pasture left.

97. There is a large body of evidence on this point - naturally from district officers and government sources. For references see 54/329, Ward - Labouchere, No. 76, 5 May 1871, Encl. Capt. Gosset (Surveyor-General) - Col. Sec., No. 36, 1 May 1857; 1864 Blue Book Reports, Encl. in Encl. 7. (1564 AR Sabaragamuwa), J. W. W. Birch. 30 March 1865, pp. 138-39 & 144; SP XLIII of 1882, Report on Forest Administration, F. D'A Vincent, *passim*. For elaboration see Roberts (1965), pp. 266-81.

98. Roberts (1965), pp. 205-09, 227-28, 231-32. See particularly CO 54/237, Torrington - Grey, No. 45, 7 July 1847.

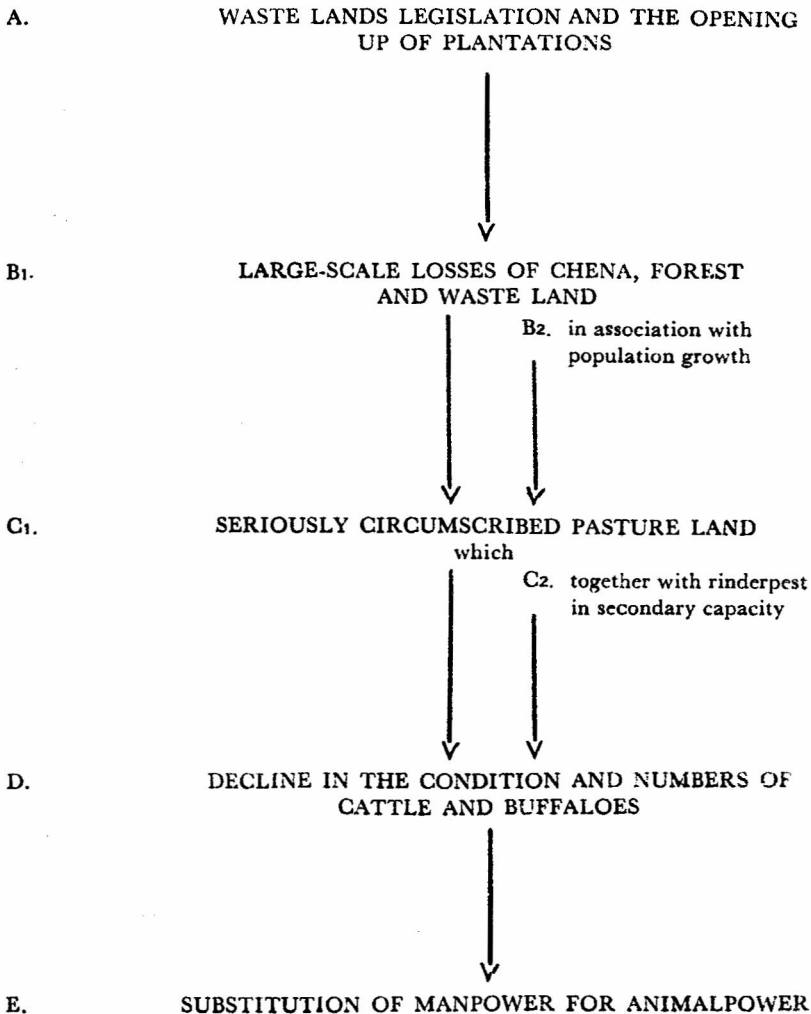
99. SP XLIII of 1882, Report on Forest Administration, F. D'A Vincent, p. 66.

100. CO 54/334, Ward - Stanley, No. 27, 15 May 1858, Encl., Statement of irrecoverable arrears (from Rawdon Power, G. A., Kandy), n. d., pp. 85-88. CO 54/345, Ward - Newcastle, No. 46, 29 August 1859, Encl. 9, Braybrooke (G. A., Kandy) - Col. Sec., No. 255, 13 May 1859. Jayawardena (1963) pp. 199-203, 337.

the complexion of the problem. On this theory one of the processes leading to a diminution of the pasturage provided positive alternatives. The villages lost their (or some of their) forest and chena, and some of their pasture, but gained several smallholdings under perennial culture. It represents a modification in the economy, not an outright loss. Being a diversification which could yield more and better food or incomes, it may even be considered an improvement.

V

To better clarify the targets of my criticism I reproduce in diagrammatic form the propositions contained in the chain reaction hypothesis with reference to the Wet Zone and the Central Highlands. The hypothesis is built brick upon brick in monolithic form so this reconstruction is quite apposite. The sign ↓ represents a causal factor:



Thus far, the proposition that the waste lands legislation and the clearing of land for cash crop plantations led to substantial losses of forest, chena and "waste" land previously used by the villagers (A & B 1) have been challenged. But presuming these propositions to hold true, the further postulate that there was a disastrous shortage of pasture land in the Highland villages (C 1) will be examined.

In this sphere the discussions, and even the source materials, are clouded by vague understandings of the categories of land which constitute "pasture". One meets a total absence of conceptual definition on the point. The chain reaction hypothesis treats forest, chena, and waste (presumably including patana) land as pasture land; and, by implication, suggests that pasturage was largely limited to such categories of land. In proceeding thus, as noticed earlier,¹⁰¹ (a) it ignores the extent to which paddy fields provided seasonal, and occasionally perennial, sources of pasture; (b) it ignores the extent to which coconut holdings, garden lands, hedges and the borders of roads and housing allotments provided fodder for draught animals; and (c) overestimates the value of primary forest and patana as sources of pasture. One fears that concepts of "pasture" may even be governed by an European background derived from an upbringing in such lands or from the colonial legacy of geography lessons oriented towards British models. The nineteenth century administrative literature, certainly, suggests such influences. Some administrators, for instance, tended to equate "pasture" with patana,¹⁰² when patana was by no means the main source of cattle and buffalo fodder. Evidence to the effect that pasture was restricted must be assessed with such possibilities in mind.

The contention that pasturage was seriously circumscribed is supported strongly by the observations of Russell, Rhys-Davids, D'A Vincent *et al* which have been quoted in previous paragraphs.¹⁰³ The report of the Cattle Disease Commission provides further evidence along these lines. A group of Sinhalese headmen and cattle owners from Uva, for instance, noted that it had formerly been the practice of cultivators to drive their herds "to the higher lands in the hill ranges" after the ploughing season, and that they had not been able to follow this custom "to nearly the same extent" since the opening of coffee plantations.¹⁰⁴ Conveying this type of evidence, the Commission observed that "[in] many districts the cultivation of coffee on lands formerly covered by forest [had] deprived the Natives of much of this means for grazing their herds during seasons the most trying to animal life."¹⁰⁵

101. *Supra*, pp. 160-61.

102. C. J. R. Le Mesurier, *Manual of the Nuwara District, Ceylon* (Colombo: Govt. Printer, 1893) pp. 11, 82.

103. *Supra*, pp. 3, 180-81.

104. *SP XX of 1869*, Cattle Disease Commission, Appendix, Evidence of "Devitotavila Ratemahatmaya, Kosgahakumbore Kurala, Udakinda Korala and many other cattle owners" at Wilson's Bungalow on the 25th March 1868, p. 3.

105. *Ibid.*, p. vii. I am indebted to Dr. Hewavitharana for calling my attention to the importance of this *Sessional Paper*.

Such observations must not be accepted without any qualifications. A close reading suggests that the Commission's conclusion could hold true largely within the drier parts of the Central Highlands, such as parts of Uva and Dumbara, and does not pertain to the other regions. Moreover, the very same group of cattle owners in Uva stated that lack of food could not be regarded as a cause of cattle sickness because there was "usually a sufficiency of grazing for cattle" in their division. In the mid-1860's a district officer in Matale District claimed that pasture existed "in abundance for twenty or thirty times" the existing stock.¹⁰⁶ Closely scrutinised, the detailed descriptions of each coffee planting district in A. M. Ferguson's *Plantation Gazetteer* for 1859 suggest that there was sufficient pasture for both planters and peasants in many planting districts at that date¹⁰⁷-an early date in the history of plantation growth.

All these evidences amount to little more than impressionistic observations. It is best to seek quantitative data. The Surveyor-General provided the following rough estimate¹⁰⁸ of the disposition of lands in the Central Province in the early 1870's:

Private Forest Standing	:	85,475	acres
Planted Coffee Land	:	210,170	„
Private Chenas and Patanas	:	100,000	„
Unsold Chenas, Waste Lands, Forest and Heavy Jungle	:	1,657,620	„

These statistics suggest that there were many segments of the Central Province which were available for the pastoral needs of the villages. But as noticed previously, the province included large tracts along its eastern and northern borders, in Uva, and in the Knuckles range which were sparsely peopled and which contained extensive areas of forest, jungle and waste land. Much the same could be said of the land above 5000 feet because coffee, unlike tea, was not cultivated to any significant extent beyond that level.¹⁰⁹ In the populated areas there was less land available for village use than these figures imply. In 1883 D'A Vincent complained that a two-way process of forest clearing, that by entrepreneurs for cashcrop culture and that by villagers for shifting cultivation (chenaing), had denuded the primary forests in the localities between 2000 and 5000 feet. In his view there were "probably not 5000 acres of original forest" remaining between those two elevations; and the villagers, by a process of encroachment for chena cultivation, had gradually "swallow [ed] up all the forest on which they [had] hitherto

106. *SP IV of 1167*, Report on Irrigation Works and Rice Cultivation, Appendix, Part I, (Replies from) W. E. T. Sharpe, A. G. A., Matale, n. d., p. 51.

107. A. M. Ferguson, *Ceylon Summary of Useful Information and Plantation Gazetteer* (Colombo: Observer Press, 1859) *passim*.

108. *SP XXIX of 1873*, Correspondence on the subject of the Conservation of Crown Forests, Gregory - Kimberley, No. 237, 31 July 1873, pp. 8-9.

109. CO 54/518, Longden - Hicks Beach, No. 126, 29 March 1879.

SP XLIII of 1883, Report on Forest Administration in Ceylon, F. D'A Vincent, pp. 24, 71.

drawn for their building timber".¹¹⁰ 5000 acres, of course, does not represent the total land area available to the villages for pasture, fuel and other needs which were distinct from timber for building purposes. D'A Vincent was thinking of the strict category of primary forest. There were secondary forest lands, scrub-land, recently chenaed and old chena land, *tennes* and *wattes* (gardens) available as well. The problem is to compute figures for these. All we know is that 23,157 acres of communal reserves and pastures were carved out between the 1880's and 1929.¹¹¹

Ferguson's *Ceylon Directories* provide fairly reliable approximations of the acreages under the major cash crops but do not cover other categories of land. For these we have to turn to the agricultural statistics compiled by the bureaucracy for the *Ceylon Blue Books*. These are based on the headmen's returns and are utterly untrustworthy. The spatial extent of long-standing paddy fields, for instance, is usually overestimated by Kandyan villagers (and hence by headmen).¹¹² It is not certain whether the figures for certain categories were even approximations and there is grave danger that they might mislead. The *Ceylon Blue Book* for 1877 suggests that an attempt was made to improve the returns,¹¹³ but one does not know to what extent good intentions were made effective. Till well into the twentieth century, one has also to encounter uncertainties inherent in the categorization adopted by the bureaucracy. It is not always clear what they meant by such terms as "pasture" and "uncultivated land".¹¹⁴ For what its worth, Table R reproduces the acreages under the major heads (classes) in the years 1881, 1891, 1901 in the major territorial sub-divisions of the Central Province exclusive of the District of Badulla (Uva) which was created a separate Province in 1886. The crop statistics would seem to represent the area under a particular crop in the year named and not the area that was cultivable with paddy, coffee et cetera. The employment of statistics for three different years provides one with a cross-check on their reliability by means of any glaring discrepancies they reveal. At the same time Table S supplies the percentage of land under the various classes, with 100% constituting the sum total of the statistics per unit for the years specified. For our purposes the most significant categories are those which provide cattle fodder, whether partially, seasonally, or perennially, viz. land under paddy (col. 1), coconut land (col. 4), fruit and vegetable gardens (col. 5), uncultivated land (col. 7) and pasture (col. 8).

110. *Ibid*, pp. 24 & 66.

111. *Supra*, p. 179.

112. For a vivid illustration see E. R. Leach (1958) pp. 14-15.

113. "The Agricultural Returns for 1877 have on examination been found so defective that they failed to convey any correct impression of the state of Agricultural progress in the country generally. Steps have been taken to ensure greater accuracy in future returns; meanwhile, it has been decided...to omit the untrustworthy statistics", runs the note in the section where the statistics are usually provided (*Ceylon Blue Book 1877*, p. 635).

114. Within what class did uncultivated plantation properties fall: "uncultivated" or "cultivated"? Was peasant coffee cultivation in smallholdings classified under "coffee" or "gardens"? What about chena land - in what category did it fall? Presumably, forest was classified under "uncultivated" and patana was treated as "pasture"?

TABLE R :

AGRIAN STATISTICS OF THE CENTRAL PROVINCE (excluding Uva) IN ACRES, 1881-1901

	1 PADDY			2 OTHER GRAINS			3 TOTAL UNDER MAJOR CASH CROPS			4 COCONUTS			5 FRUIT & VEGETABLE GARDENS		
	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901
Kandy	40,911	34,622	33,765	4,914	7,161	6,726	152,423	145,308	108,970	3,393	4,899	8,801	11,131	17,112	17,936
N'Eliya	13,003	11,000	11,914	2,724	3,000	3,928	95,600	74,409	86,416	112	130	175	954	1,135	1,493
Matale	18,747	12,232	15,291	4,956	5,776	4,000	48,778	16,450	—	1,786	1,975	—	3,706	5,144	—
Central Province	72,661	57,854	60,970	12,594	15,937	14,654	296,801	236,167	—	5,291	7,004	—	15,691	23,391	—
	6 TOTAL AREA CULTIVATED			7 UNCULTIVATED LAND			8 PASTURE			9 WASTE LAND			10 TOTAL AREA ACCORDING TO STATISTICS PROVIDED		
	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901
Kandy	216,910	211,388	253,012	316,378	241,305	192,662	24,792	—	5,181	—	125,867	121,686	558,080	578,560	572,540
N'Eliya	112,446	90,383	108,762	108,594	113,227	31,491	8,000	20,000	8,183	—	2,010	83,884	229,040	225,620	232,320
Matale	78,267	42,686	—	498,579	118,859	—	2,354	586	—	—	8,606	—	579,200	170,737	—
Central Province	407,623	344,457	—	923,551	473,391	—	35,146	20,586	—	—	136,483	—	1,375,320	974,917	—

NOTES ON TABLES R & S

The structure of the tables providing agricultural statistics underwent a change between 1881 and 1891. In 1881 they were enumerated simply, in one table, with the crops listed separately and one broad class, "Total Number of Acres in Crop", providing the sum total; while "pasture" and "uncultivated land" constituted the two other broad classes (in the same table). In 1891 and 1901 a table entitled "Nature of Crops, Quantity . . . (etc.)", proceeding vertically downwards, provided the extent of land under various crops in each

district. Another table, proceeding horizontally across, provided the agricultural statistics under several broad classes. Here, the crops were amalgamated under three broad heads: grain of all kinds, vegetables and fruits of all kinds, (which included coconut land, at least in 1891) and products other than grain, fruit and vegetables. Another column indicated the total (our column 6) and other columns supplied figures under other broad heads, uncultivated but cultivable land, pasture, and

waste land. We provide explanations of the columns below, except where the title is deemed self-explanatory.

Column 2 : This column covers "hill paddy, Indian corn, fine grain, small grain, gingelly etc.."

Column 3 : This column constitutes our own computations from the tables, being the sum total of the figures under coffee, tea and cinchona in 1881; and the same three crops plus cacao thereafter.

TABLE S :

AGRICULTURAL STATISTICS OF THE CENTRAL PROVINCE (excluding Uva) 1881-1901: IN PERCENTAGES.

	1 PADDY			2 OTHER GRAINS			3 TOTAL UNDER MAJOR CASH CROPS			4 COCONUTS			5 FRUIT & VEGET GARDENS	
	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891
Kandy	7	5	5	*	1	1	27	25	31	*	*	1	1	2
N'Eliya	5	4	5	1	1	1	41	32	37	*	*	*	*	*
Matale	3	7	—	*	3	—	8	9	—	*	1	—	*	3
Central Province	5	5	—	*	1	—	21	24	—	*	*	—	1	2
	6 TOTAL AREA CULTIVATED			7 UNCULTIVATED LAND			8 PASTURE			9 WASTE LAND			10 TOTAL AREA ACC TO STATISTICS PR	
	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891	1901	1881	1891
Kandy	38	36	44	56	41	33	4	—	*	—	21	21	100	100
N'Eliya	49	40	46	47	50	13	3	8	3	—	*	36	100	100
Matale	13	25	—	86	69	—	*	*	—	—	5	—	100	100
Central Province	29	35	—	67	48	—	2	2	—	—	13	—	100	100

* = less than 1%

NOTES ON TABLES R & S

Column 3 (contd):

By 1901 however coffee was a negligible factor except in Uva. By 1901 too, hardly any cinchona was grown anywhere. Note that, for the years 1891 and 1901, our computations will be a few hundred acres less than the sum total rendered under "Products other than Grain, or Fruit and Vegetables" in the Blue Books.

Column 6 : In 1881 this column was designated "Total Number of Acres in Crop". The figures under this head will not match the sum total of the

figures in our columns 1-5 because a few minor crops have been omitted by us. In 1881 and 1891 it represents the sum of the figures under the three broad classes mentioned above.

Column 7 In 1891 and 1901 the table with broad categories has two columns designated thus. "Area in Acres of Land not cultivated during the year, though fit for cultivation" and "Area in Acres of Land not cultivated during the year capable of being rendered fit for cultivation". A third column represents the total of these two categories. Our column 7 constitutes this total.

Column 8 : By 1891 the standards for defining pasture would seem to have been more rigorous than before, to judge from the designation of another broad class which we reproduce in column 9.

Column 9 : In 1891 and 1901 the official designation read: "Area in Acres of Waste Land which incapable of being rendered productive and is unfit for Pasturage". Such a category did not exist in 1881 and presumably such land fell within the head of "pasture" or "uncultivated land" in the official computations for 1881.

On my definition columns 4 (coconut), 5 (vegetable and fruit gardens), 7 (uncultivated land), and 8 (pasture) would have provided perennial sources of fodder for draught animals, though on a partial basis in that the whole extent noted under each column would not be suitable fodder. At the same time columns 1 and 2 (paddy and other grains) would serve as seasonal sources. On this basis the figures *indicate* that even in Kandy District the sources of pasture utilised by draught animals were not as seriously circumscribed as suggested.

For the twentieth century, influenced by the knowledge that a census of production was attempted in 1921, the year 1922 has been chosen for a random survey. Table T presents the acreages and percentages of land under six broad heads in the Districts of Kandy, Nuwara Eliya, Matale, Uva, Ratnapura, Kegalle and Kurunegala. The Table is derived from a similar table in the *Ceylon Blue Book* for the year, which is designated "Area in Acres Cultivated during the year".¹¹⁵ But some figures read strangely, notably the extent recorded for Kandy District in column 3 which pertains to the cash crops. This is confirmed by references to another table in the same *Blue Book* which provides a breakdown of the extent of land under different crops and which was largely based on the census of production of the previous year.¹¹⁶ Table U is compiled from the figures found in this table, some insignificant items being amalgamated for the sake of convenience.

In Table T the columns 2 and 5, for vegetables and for pasture respectively, might be considered - the latter somewhat doubtfully - perennial sources of pasture. Column 1 on grain of all kinds might be treated as a seasonal source. Column 3 would include a certain extent under coconut and arecanut which would be partially available for pasture, but the figures have to be drawn from Table U whose figures (even in sum) do not match that of Table T. On this basis one can derive Table V, which is embellished by an additional column (column d) which depicts the number of draught animals in the specified districts in 1922,¹¹⁷ so as to afford a basis for calculating the extent of pasture available per head of cattle.¹¹⁸ The discrepancies and

115. *The Ceylon Blue Book 1922*, p. R 7.

116. *Ibid.*, pp. R 4-6. The full title reads: "Nature of Crops and Quantity of Produce". It has a sub-title note as follows:

The figures given in this table, except those under paddy, other grains, cotton and sugar cane, which are for the year 1922, and those under palmyra, which are for the year 1921, are for the twelve months ending September 30, 1921, and have been taken from the Census of Production, 1921. The figures are subject to considerable error, and cannot in any way be guaranteed accurate (tea and rubber possibly expected).

117. *Ceylon Blue Book 1922*, p. R. 8. The draught animal population in 1922 did not differ much from the numbers in 1901. In 1901 the Central Province had 106,584 and Uva 69,537. There is, however, some difference between the figures for the early 20th century and those for 1891, when the numbers recorded (especially in Uva) were smaller. For details, see Table X, *infra*, 195 p.

118. The percentages in Table V constitute percentages of column 8 in Table U.

TABLE T :

**"AREA IN ACRES CULTIVATED DURING THE YEAR" 1922 IN SELECTED
DISTRICTS AND PROVINCES**

UNITS	1		2		3		4		5		6		7	
	WITH GRAIN OF ALL KINDS		WITH VEGETABLES OF ALL KINDS		WITH PRODUCTS OTHER THAN GRAINS AND VEGETABLES		TOTAL CULTIVATED		PASTURE LAND		WASTE LAND		TOTAL OF COLS. 4, 5 & 6.	
	Acreege	%	Acreege	%	Acreege	%	Acreege	%	Acreege	%	Acreege	%	Acreege	%
Kandy Nuwara Eliya Matale	33,168	18	5,375	2	25,364	13	63,907	34	9,855	5	110,391	59	184,153	100
	20,061	14	2,256	1	102,424	72	124,741	87	11,624	8	5,405	3	141,770	100
	22,086	9	4,426	1	104,587	44	131,099	56	17,360	7	84,580	36	233,039	100
Central Province	75,315	13	12,057	2	232,375	41	319,747	57	38,839	6	200,376	35	558,962	100
Province of Uva	43,563	7	5,763	*	85,072	13	134,398	21	309,367	49	176,484	28	620,249	100
Ratnapura Kegalle	58,058	33	1,014	*	64,635	37	123,707	71	41,333	23	8,107	4	173,147	100
	35,300	14	9,218	3	135,352	57	179,770	75	365	*	57,072	24	237,207	100
Province of Sabaragamuwa	93,358	22	10,232	2	199,987	48	303,477	73	41,698	10	65,179	15	410,354	100
Kurunegala	134,287	31	1,716	*	213,887	50	349,890	82	72,281	17	-	-	422,171	100

* less than 1 per cent

TABLE U : "NATURE OF CROPS" IN SELECTED DISTRICTS AND PROVINCES, LARGELY ACCORDING TO THE CENSUS OF PRODUCTION 1921

UNITS	1		2		3		4		5		6		7		8	
	PADDY		CHENAS AND OTHER GRAINS		VEGETABLES & TUBERS		COCONUTS		TEA, RUBBER AND COCOA		ARECANUTS		CARDAMONS, TOBACCO & OTHER MISCELLANEOUS CASH CROPS		TOTAL	
	Acreage	%	Acreage	%	Acreage	%	Acreage	%	Acreage	%	Acreage	%	Acreage	%	Acreage	%
Kandy Nuwara Eliya Matale	37,029	13	12,541	4	2,891	1	10,857	3	207,555	73	10,806	3	2,424	*	284,103	100
	15,427	12	9,048	7	1,475	1	242	*	99,664	77	698	*	1,819	1	128,373	100
	17,680	18	9,670	10	959	1	4,900	5	58,895	61	1,915	2	1,134	1	95,153	100
Central Province	70,136	13	31,259	6	5,325	1	15,999	3	366,114	72	13,419	2	5,377	1	507,629	100
Province of Uva	25,525	16	35,712	22	1,683	1	933	*	90,716	58	1,505	*	272	*	156,346	100
Ratnapura Kegalle	39,202	24	20,554	12	998	*	7,366	4	83,427	52	8,633	5	179	*	160,359	100
	31,031	15	8,911	4	1,874	*	34,236	17	106,200	53	17,247	8	43	*	199,542	100
Province of Sabaragamuwa	70,233	19	29,465	8	2,872	*	41,602	11	189,627	52	25,880	7	222	*	359,901	100
Kurunegala	100,189	27	50,022	13	2,862	*	193,527	52	17,012	4	3,117	*	1,273	*	368,002	100

* = less than 1%

uncertainties in categorisation as well as the regional statistical variation in the definition of categories¹¹⁹ which mar the statistical Tables T, U and V naturally reduce the value of any conclusions which are drawn from them. It is also my view that the extent of pasture land depicted in Table V

TABLE V : Pasture : Cattle Ratio in the early 20th century

Units	a Perennial Pasture		b Seasonal Pasture		c Coconut & Arecanut	d Buffaloes & Black Cattle
	Extent in Acres	%	Extent in Acres	%	Extent in Acres	No.
Kandy	15,230	7	33,168	18	21,663	54,983
N'Eliya	13,880	9	20,061	14	942	33,296
Matale	21,786	8	22,086	9	29,418	23,267
Central Province	49,796	8	75,315	13	52,023	111,546
Uva Province	315,130	56	43,563	7	2,438	64,346
Ratnapura	42,347	23	58,058	33	15,999	41,690
Kegalle	9,583	3	35,300	14	51,483	66,394
Sab'wa Province	51,930	12	93 358	22	67,482	108,084
Kurunegala	73,997	17	134,287	31	196,644	347,630

is an underestimate because of the probability that portions of the "waste land" in Table T, a category that is one of the largest single components in most districts, could be utilised for pasture. In addition it should be noted that the numbers of buffaloes and black cattle in Table V probably include the cattle on the plantations.¹²⁰ These cattle were largely sustained on the fodder grown on the plantation properties.¹²¹ With these qualifications and

119. The high figure of 309,367 acres in Uva (see Table T) obviously includes large extents of the patana land so common to the district. Kurunegala is recorded to have no waste land and its figure for pasture (72,281 acres) is probably inflated. An examination of Table T will reveal that Ratnapura District had much pasture and little waste, while Kegalle District was quite the opposite. This suggests that the administrators of Ratnapura defined "pasture" loosely and those in Kegalle defined it strictly.

120. *Infra* p. 193. In the 1890's the plantations contained 35.5% of the cattle in Nuwara Eliya District according to the statistics provided by Le Mesurier.

121. For instance, see the description of plantation districts in A. M. Ferguson's *Plantation Gazetteer* (1859) and the replies of planters in *SP XX of 1869*, Appendices, pp. 37-46.

in such circumstances, the statistics in Table V indicate that the draught animal population did not press on the available pasture land to a significant extent. Concentrating on the district which appears to have been the most congested, that of Kandy, one finds that each head of cattle and each buffalo would have had an average of slightly more than 1/4th an acre of perennial pasture, slightly more than 1/2 an acre of grain-producing land available seasonably, and slightly less than 1/2 an acre of coconut and arecanut producing land available perennially. These amounts would have been supplemented by straw and by the fodder available along the verges of roads and building allotments, rubbish dumps, and other sundry sources.¹²² In a well-managed farm in a wet zone locality which has at least 100 inches of rainfall distributed evenly over a year (as at Ambawela where a model farm is located), an acre of grassland grown for pastoral purposes could support two animals per year. Around Kandy one would need two acres of such grassland for three animals. Extending these considerations to the dispersed and varied sources from which the village cattle and buffaloes derive their fodder, one could say, at a rough estimate, that two acres were needed to support one animal.¹²³ In 1922, according to the statistics in Table V, the pasturage that seems to have been available in the congested District of Kandy did not fall very far short of these needs, if one takes into consideration the several sources which the statistics do not cover.

VI

Assuming that from whatever cause, the pasturage available for the village cattle and buffaloes was adversely restricted in the course of the nineteenth and early twentieth centuries, the view that such a restriction was primarily responsible for decimating the cattle and buffalo population will now be examined. For, on the face of it, there is no reason why the effect of rinderpest and other cattle diseases should be relegated to a secondary role. Nor why the conjectural probability that rough and ready methods of rearing cattle and buffaloes¹²⁴ contributed to their susceptibility to disease should have been unnoticed as a contributory factor. Or why the conjectural possibility that continuous inbreeding or indiscriminate breeding contributed towards their debility should have been neglected as a contributory cause - particularly when the possibility is reinforced by the Cattle Disease

122. It must be also kept in mind that grass can be cut and thus transported.

123. Conversation with Mr. W. D. Andrew, a specialist attached to the Veterinary Research Institute in Gannoruwa. Generally supported by Professor R. Appadorai and Dr. V. E. A. Wikramanayake of the Departments of Animal Husbandry and Agriculture respectively in the University of Ceylon. The latter felt that in village areas one acre of the types of fodder specified was not sufficient to support one animal and that 1-2 acres were needed. More cautiously, Professor Appadorai stated that 2-5 acres would be necessary according to the type of fodder. I am also grateful to Dr. Jainudeen for his opinion on related subjects.

124. For complaints on this ground see *1868 AR*, Badulla, W. E. T. Sharpe, 2 April 1869, p. 31; and *1869 AR*, Kandy District and Central Province, H. S. O. Russell, 27 June 1870, p. 39; and *SP XX of 1869*, Cattle Disease Commission, *passim*.

Commission's contention that "promiscuous and premature breeding" was one of the major factors responsible for the reduction of the cattle and buffalo population.¹²⁵

Concentrating solely on the major query raised above, one would find an overwhelming number of district administrators reporting that rinderpest had caused many deaths and had a detrimental influence on paddy cultivation. Such a theme is evident in the administration reports as well as the replies to question No. 21 in the questionnaire circulated by the committee on "Irrigation Works and Rice Cultivation" in 1866-67, which read: "Has the cultivation of paddy in your Province or District been interfered with by the destruction of cattle from murrain or other causes?". It is equally evident in the observations of those individuals who appeared before the Cattle Disease Commission. While the bulk of the complaints came from regions within the dry zone or its borders,¹²⁶ the wet zone was not free of rinderpest and its depredations. The mortality returns collected by the Cattle Disease Commission for the years 1865-67 (inclusive) reveal that there was heavy mortality in the Colombo, Sabaragamuwa, Kegalle and Matara districts - as heavy as elsewhere.¹²⁷ Unfortunately no statistics were provided for the Central Province, with the exception of Badulla District. A report from the Government Agent of that province, however shows that 25,059 head of cattle, or one-fourth of its total cattle (and buffalo) population died in the course of a rinderpest epidemic in the year 1852.¹²⁸

125. *Ibid*, p. vii. The members of this Commission were Dr. Boyd Moss, Dr. William Smith, J. A. Perera (the Maha Mudaliyar) and John Capper (a journalist).

126. In the early 1850's a district officer in Puttalam District even reported that "in many places, three-fourths of the animals [had] died" (A. O. Brodie "Statistical Account of District of Chilaw and Puttalam, North Western Province", *JRAS CB*, Vol. II, Part II (1853) p. 46); and in 1857, 45,000 head of cattle and buffaloes were said to have died in the Seven Korales or North Western Province - which includes Puttalam District (*SP XX of 1869*, Appendices, p. 50). Doubts remain as to how valid these returns are.

127. *Ibid*, Appendices, p. 69. The following mortality returns are provided:

	1865	1866	1867	1865-67 Av. mortality
Colombo District :	7,996	15,159	2,061	
Sabaragamuwa ,, :	5,618	16,346	1,035	
Kegalle ,, :	2,079	5,675	1,465	
Western Province :	15,693	37,180	4,561	19,144
These figures could be contrasted with				
Eastern Province :	2,754	6,549	1,008	3,437
Northern ,, :	3,471	13,373	11,479	11,107
Kurunegala District :	32,717	2,476	6,847	14,076

128. *Ibid*, p. 49. He provides detailed returns of the number attacked, the number that died and the total number living in the following sub-districts and districts: Udu-nuwara, Yatinuwara, Tumpane, Harispattuwa, Lower & Upper Dumbura, Lower & Upper Hewaheta, Udapalata, Upper Bulatgama, Matale South, Matale East, Matale West, Nuwara Eliya and Badulla. According to this report, the total left in the Central Province was 73,940. It is evident, however, that the officer had subtracted the number dead from the previous year's (1851) total. In doing so, he failed to consider the number of births. Also see *infra*, p. 193.

There can be little hesitation in concluding that cattle murrain or rinderpest was the primary cause of any deterioration in the condition and numbers of the cattle and buffalo population in the Central Highlands (as well as elsewhere in the island).¹²⁹ Limitation of pasture must, at best, be relegated to secondary status as a causal factor. It might be retorted that the lack of suitable pasture was largely responsible for a general debility in the cattle which increased their susceptibility to disease - as indeed suggested by some administrators. Malnutrition can contribute towards the spread of most diseases, though not all diseases, in animals as well as in humans. Rinderpest falls within the category of animal disease to which malnutrition may weaken a subject's resistance.¹³⁰ But it is virus disease and can spread without the assistance rendered by malnutrition. In 1869, a group of Sinhalese cattle owners even asserted that a "strong bullock sometimes died sooner than a weakly animal".¹³¹

VII

Finally, it is necessary to examine the proposition that the stock of cattle and buffaloes was reduced to a significant extent, omitting altogether the impossible task of investigating the alleged degeneration in their condition and breed.¹³²

One finds that Hewavitharana has represented the decline in numbers in terms of the ratio of draught animals to the rural population.¹³³ This means that he has introduced another variable into the computation, that of the rural population. If the rural population increased at a much faster rate than the stock of cattle and buffalo, even in a situation in which the number of draught animals did not decline it is possible for such a table to suggest that there was a reduction in the draught animal population. In short, it could produce a total fiction. Or in other words, the table assumes that the growth-rate of the rural population was constant.

Be that as it may, the proposition is worth attention in view of the evidence that rinderpest caused serious depredations among the cattle and buffaloes, and the knowledge that the slaughtering of cattle for beef would have contributed to a diminution in their numbers. It is significant, however, that many of the reports refer only to a high death rate and do not prove that there was a decline in the absolute total. Nevertheless, the Cattle Disease Commissioners were unequivocal in their conclusions that

129. In 1869 there was considerable unanimity of opinion that *tavalam* cattle helped to spread the disease.

130. Personally communicated to the author by Dr. Jainudeen of the Veterinary Faculty, University of Ceylon, 23 May 1969.

131. *SP XX of 1869, Appendices, op. cit.*, p. 3.

132. See *ibid.*, pp. vi-vii.

133. *Supra*, p. 158.

the herds had declined in numbers, with the qualification that this held true for some districts only:

The mortality, which has undoubtedly been very severe amongst village herds during a recent period, presses heavily and often disastrously upon the industry of the country. It is not that a sufficiency of cattle for all industrial purposes may not exist throughout the country, but it is their unequal distribution which affects native agriculture so prejudicially. In some districts cattle are abundant and cheap, in others extremely scarce and dear . . . ¹³⁴

Since their report only contains scraps of statistical evidence on the decline in the absolute totals per district, it is advisable to concentrate on these totals over a broad period of time. The necessity to do so is illustrated by the example of the Central Province in the 1850's. It has been seen that a rinderpest epidemic decimated the cattle and buffaloes in the province in 1852, reducing it - according to the Government Agent - from approximately 100,000 to 73,940. Yet the very people responsible for providing these figures supplied returns in 1856 and 1861 which depicted totals of 118,168 and 108,312 "horned cattle" respectively in the Central Province. ¹³⁵

It will be obvious that the absolute total of cattle and buffaloes in Ceylon depended on the difference between the death-rate and the additions to the stock in Ceylon. Augmentation of animals occurred through imports, largely from British India, as well as from births. The former was not insignificant as a source of replenishment. In the thirty years between 1871 and 1900 for instance, 368,533 cows, bulls, oxen and buffaloes were imported to Ceylon from British India,¹³⁶ roughly 12,200 a year. To derive regional figures on the total cattle and buffalo populations over a period of time, one has to turn to the *Ceylon Blue Books*. In using these statistics it is important to keep several factors in mind, entirely apart from their probable defectiveness. As noticed earlier, one must seek to differentiate between buffaloes and cattle. Secondly, one should note that the plantations (estates) maintained herds of cattle which swelled the district totals in some areas. This is indicated in Le Mesurier's *Manual of the Nuwara Eliya District Ceylon*, where he not only distinguishes between "buffaloes", "black cattle" and "others" but also separates each category into "villages" and "estates". While the estates had few buffaloes (195 as against 7468 in the villages of Nuwara Eliya District), they had significant numbers of black cattle, 2994 as against 4639 in the villages.¹³⁷ Unfortunately, the *Blue Books* do not make this differentiation. It can be presumed,

134. *Ibid*, p. xxi.

135. *Ceylon Blue Books* for 1856 and 1861.

136. Statistical compilation from the *Ceylon Blue Books*, undertaken for me by V. O. Ranasinghe. Most of the imports were "oxen and bulls", the cows only numbering 2,196 and the buffaloes 156. It is probable that a portion of the imports was for slaughter.

137. C. J. R. Le Mesurier (1893), p. 82. The number of cattle under "others" was not appreciable and was largely on the estates. Clearly, they refer to imported pedigree cattle.

however, that the cattle and buffaloes on estates were included in the figures provided therein. This might seem to strengthen the proposition that pasture land was seriously circumscribed. The villages had even less cattle and buffaloes than the statistics which Hewavitharana has used suggest. The argument rebounds, however. For one thing, it introduces an unconsidered variable bearing on the ratios depicted. For another, it means that the villages needed less pasture land than the figures suggest, for the estate cattle and buffaloes were fed on fodder grown (or available) within the estates.

The *Blue Books* provide other problems. The quantities of livestock in Ceylon are noted in a statistical abstract at the start whereas a more detailed provincial breakdown is included with the agricultural statistics. At times the sum total of the provincial figures do not correspond to that noted in the abstract.¹³⁸ Again, at the outset, before and during the 1870's, the number of cattle was depicted under the single head: "horned cattle". In 1879 the Central Province, North Western Province and a few other districts distinguished between the "black cattle" and "buffaloes", whereas the other districts and the statistical abstract employed the old, undifferentiated category.¹³⁹ After a short transitional period, however, the differentiated enumeration prevailed in the detailed lists. By 1891 the statistics on livestock included two columns which indicated the increase in numbers since 1866 and since 1876. In the instance of buffaloes and cattle the increases (or decreases) were generally recorded on an undifferentiated basis, both being added together in contrast to the differentiated figures in the census for the year. Table W reproduces the statistics¹⁴⁰ for selected districts which comprise part of the Central Highlands. Since the statistics for the 1860's and 1870's would appear to have been more unreliable than those of 1891 and since the defectiveness would probably have been in the direction of an underestimate, it is not certain that one can rely on the increases recorded. On the other hand, the livestock statistics of the decades following the year 1891 suggest that the increase reported since 1866 may, in broad terms, well be a fact. Concentrating on the districts of Kandy, Nuwara Eliya, Matale, and Uva (Badulla) Table X presents the figures provided in the *Ceylon Blue Books* for 1871, 1881, 1891, 1901, 1910-11 and 1922. A glance at the totals will indicate that there was a considerable increase in the numbers of cattle and buffaloes in the four districts between 1871 and 1922. In the light of the statistics for 1881 and 1891, however, it is possible that the figures for 1871 are an underestimate. Leaning away from the direction of criticism and treating the figures for 1881 as the base, one finds a slight decrease in the cattle and buffalo population of Kandy District between 1881 and 1922, a moderate decrease in Matale District and

138. Revealed in my first random sample, that for 1879.

139. *Ceylon Blue Book 1879*.

140. *Ceylon Blue Book 1891*, pp. 275-77.

TABLE X :

BUFFALO AND BLACK CATTLE POPULATION IN THE CENTRAL PROVINCE AND UVA, 1881-1922

District	1 BUFFALOES					2 BLACK CATTLE					3 TOTAL					
	1881	1891	1901	1910-11	1922	1881	1891	1901	1910-11	1922	† 1871	1881	1891	1901	1910-11	1922
Bandaruwara	19,673	21,559	19,489	24,381	20,995	37,770	30,097	31,728	28,739	33,988	37,250	57,443	51,656	51,217	53,730	54,983
Eliya	5,676	6,942	6,350	7,284	9,755	5,048	7,729	10,117	8,448	13,512	8,675	10,724	14,671	16,467	15,732	23,267
Katale	22,750	17,870	21,858	20,399	16,220	17,745	15,692	17,042	18,820	17,076	17,869	40,495	33,562	38,900	39,229	33,296
Central Province	48,099	64,371	47,697	52,064	46,970	60,563	53,518	58,887	56,007	64,576	63,794	108,662	99,839	106,584	108,691	111,546
Uva Province	18,019	10,135	21,481	17,212	15,272	28,602	21,556	48,056	53,479	49,074	58,462	46,621	31,691	69,537	70,691	64,346

† Total of "horned cattle".

an appreciable increase in Nuwara Eliya District - leading to an unappreciable overall increase in the Central Province. In the meanwhile Uva records a significant increase amidst seeming fluctuations.

TABLE W : Increase in the Cattle Population between 1866 and 1891

	Number	Increase since 1866	Increase since 1876
Kandy	21,559 buffaloes 30,097 b. cattle	3,682	15,131
Nuwara Eliya	6,942 buffaloes 7,729 b. cattle	8,002	6,536
Matale	17,870 buffaloes 15,692 b. cattle	17,924	9,264
Uva (Badulla)	10,135 buffaloes 21,556 b. cattle	2,270 3,046	2,738 2,440
Ratnapura	15,580 buffaloes 14,077 b. cattle	not ascertainable	10,230
Kegalle	20,322 buffaloes 13,677 b. cattle	not ascertainable	not ascertainable
Kurunegala	117,222 buffaloes 117,283 b. cattle	— —	22,105 —

However, as emphasised earlier, in the Central Highlands buffaloes constituted the most vital element of draughtpower. Under this category one can be fairly certain that the estates did not possess significant numbers, in contrast to the item "black cattle". One should concentrate, therefore, on section 1 in Table X. This section records an appreciable increase in the number of buffaloes in Nuwara Eliya District, a virtually static position in Kandy District, and a significant decrease in Matale District leading to a slight decrease in the total of the Central Province; while the Province of Uva records a slight decrease amidst fluctuations.

From neither point of view do the statistics support the proposition that there was a significant reduction in the number of draught animals.

VIII

The conclusive evidence on the detrimental effects of cattle disease, nevertheless, requires one to balance the statistical evidence on the numbers of cattle and buffaloes against the manner in which paddy culture was affected by the occurrence of rinderpest and other cattle diseases. One

would expect that a rinderpest epidemic which decimated the buffaloes in a particular district in a particular year would have adversely influenced paddy cultivation in that district in the next few years. The evidence presented before the Cattle Disease Commission shows that this was so. Several cattle owners asserted that they did not have enough draught animals for cultivation purposes and that some paddy fields were left uncultivated as a result.¹⁴¹ The questions remain whether such repercussions were short-run or long-run, and whether the residents of villages or districts so affected were forced to rely on manpower rather draughtpower. The answers would depend on the powers of recovery and replenishment possessed by the resident cattlemen and the extent to which they encountered further outbreaks of rinderpest (and other cattle diseases) thereafter. The statistics suggest that the districts within the Central and Uva Provinces possessed such powers of recovery over the long-run. It is nevertheless possible for the statistics to veil retrogression in particular localities - in which event one has still to admit that retrogression was limited.

It is also necessary that one should survey the impact with reference to the fortunes of individual cattlemen and paddy cultivators, with the qualification that one's comments will only apply to those localities in which draught animals were used to a significant extent. One can reasonably conjecture that there were individuals who did not have the means of replenishing the draught animals they had lost; and that such individuals were more likely to have been drawn from the category of small capitalists (in the sense of peasants and other residents with just one draught animal or a few animals). In this sense rinderpest may well have assisted the capital-accumulation of the few. Those who had the resources to replenish their stock may have found themselves in a better bargaining position when hiring out their draught animals. Coterminously, increasing rates of hire may have induced those cultivators who did not possess, and who previously used, draught animals to resort to manpower rather than draughtpower in ploughing their fields. These suppositions amount to a resuscitation of the final proposition in the chain reaction hypothesis on a highly qualified and conjectural basis, a basis which also differs from the chain reaction hypothesis in the direct and predominant importance it attaches to the adverse effects of rinderpest.

IX

With its emphasis on a process of chain reaction, the hypothesis presented by de Silva and Hewavitharana can be compared to a monolithic scaffolding raised brick upon brick, plank upon plank. As argued in this study, its very foundations, the unspoken premises that buffaloes existed in large numbers and were used extensively in the Central Highlands, are shaky. The proposition that the waste lands legislation and the expansion of plantations led to widespread expropriation of lands that were used by the villages is also open to challenge: expropriation was much less than normally

141. *SP XX of 1881*, Appendices, pp. 3, 5, 15, 17.

supposed (though far from non-existent), and there was a coterminous extension of highland cultivation in smallholdings by the indigenous inhabitants (Kandyans and newcomers to the Highlands) which the theory of large-scale expropriation seems wholly to neglect. Where one is speaking in general terms, the proposition that there was inadequate land available for the pastoral needs of the villages is also untenable. Again, it is evident that the outbreaks of rinderpest and other cattle diseases from time to time were largely responsible for a high rate of mortality among cattle and buffaloes; and that any reduction in the number of cattle and buffaloes cannot by any means be described as a gradual and steady decline that was largely due to a scarcity of pasture. Finally, the statistics (admittedly uncertain) that have been deployed reveal that the total number of draught animals in the Central Highlands did not decline significantly. It is accepted, however, that the retrogression in techniques implied in the replacement of draughtpower by manpower *may* have occurred to a certain extent in some localities, primarily because of the adverse impact of rinderpest.

However plausible and inviting it may seem, the chain reaction hypothesis cannot be sustained in its present form. The planks creak, rattle and totter. Some even crash down.