

ART. XV. – *A traffic in lime*. By A. HARRIS, M.A., Ph.D.

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IN Cumbria, as elsewhere, some aspects of the lime industry have received more attention than others. Marshall and Davies-Shiel demonstrate its importance generally and comment on surviving physical remains.¹ Phillips provides examples of agricultural improvement by lime in the early 17th century, while links between coal mining and lime-burning are suggested by Moore.² Traffic in lime has not passed entirely unnoticed. Its implications for road improvement – and the influence of better roads on the movement of lime – are discussed by Williams, and its associations with shipping and inland waterways are noted by Marshall and Davies-Shiel and Bouch and Jones respectively.³ Few details have been published, however, so that a formerly important element in local trade remains comparatively little known. This brief comment seeks to fill a small gap in our knowledge of the lime trade and draws attention to some Cumbrian lime accounts.

Suitable limestones in close proximity to accessible coal encouraged lime-burning in many parts of Cumbria.⁴ Some of this activity involved the building of commercial kilns and was organised on a comparatively large scale. Thus kiln accounts for Hillbeck, Brough, show customers in most villages and hamlets by the turnpike linking Stainmore and Appleby in the late 18th century.⁵ Similarly, kilns in the Liddel valley, near Penton, served an extensive district along the Scottish border.⁶ By contrast, other kilns met a smaller and more highly localised demand.⁷ Such, almost certainly, were the kilns “at most of the farms within a radius of two miles from Shopford” and many on Alston Moor, where sulphurous “crow coals” were won by lead miners and “used by Farmers for burning the lime required for improving their land”.⁸

Both large and small lime-burning enterprises might develop within the same area and even on the same estate. Some landowners were themselves involved directly in the lime industry, others indirectly as lessors of limestone and coal.⁹ Under such circumstances, a complex web of relationships might develop, agricultural tenants in some places being bound by their agreements to purchase coal or lime at certain pits and kilns.¹⁰ Others with access to limestone might nevertheless be forbidden to sell it in any form, although allowed to quarry it for their own use.¹¹ In spite of the presence in some areas of numerous farmers’ kilns, many commercial limeworks attracted a large country trade.

Much of the trade in lime, as Williams has pointed out, was local.¹² Yet on geological grounds alone one might expect some areas to have lent themselves more readily than others to the convenient and cheap production of lime, if only because not all limestone districts were equally endowed with coal.¹³ Moreover, some limestones were more highly regarded for certain purposes than others. Thus limestones near Naworth were favoured because they yielded “a first rate agricultural lime”, with little waste.¹⁴ For these reasons there emerged not only areas of lime deficiency and of lime surplus but also, within the producing districts themselves, limes that enjoyed a particularly good reputation (Fig. 1).

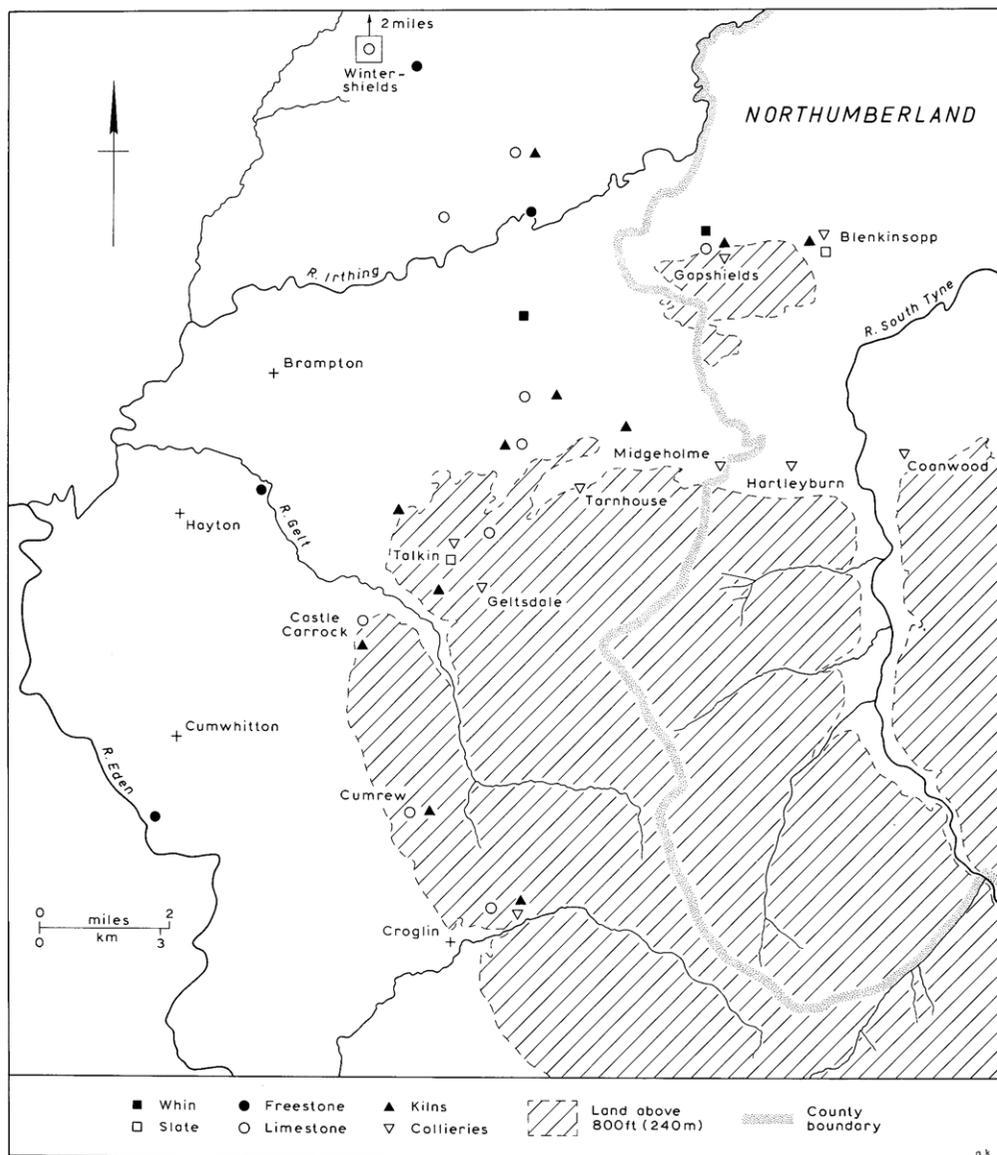


FIG. 1. – Coal and stone workings, circa 1830, redrawn from Edward Bowman's *Map of the Barony of Gilsland*, 1828-30. The original is in the Department of Palaeography and Diplomatic, University of Durham.

The traffic that made it possible for one area to take advantage of another's endowment is suggested by Crayston Webster's observation that "strong is the faith that the further you carry lime the more potent is its effect".¹⁵ Unfortunately, like most of his contemporaries, Webster provides few details.

Fig. 2 shows the recorded destinations in 1824 of approximately 15,000 bushels of lime from kilns belonging to the Earl of Carlisle at Clowgill, near Brampton.¹⁶ A still larger quantity (indicated below the map) moved to a staith, or depot, in Brampton and its

ultimate destination is not indicated. It will be obvious, even so, that a large district drew lime from Clowsgill. Purchasers are normally identified in the accounts by name and place of residence. Many were farmers, some on the earl's own Naworth estates, where there were numerous farmers' kilns wherever limestone was available, but sales were confined neither to tenants nor to agricultural users. The importance of Carlisle, where lime was in demand for building and in gas making, is evident.¹⁷ Although some names

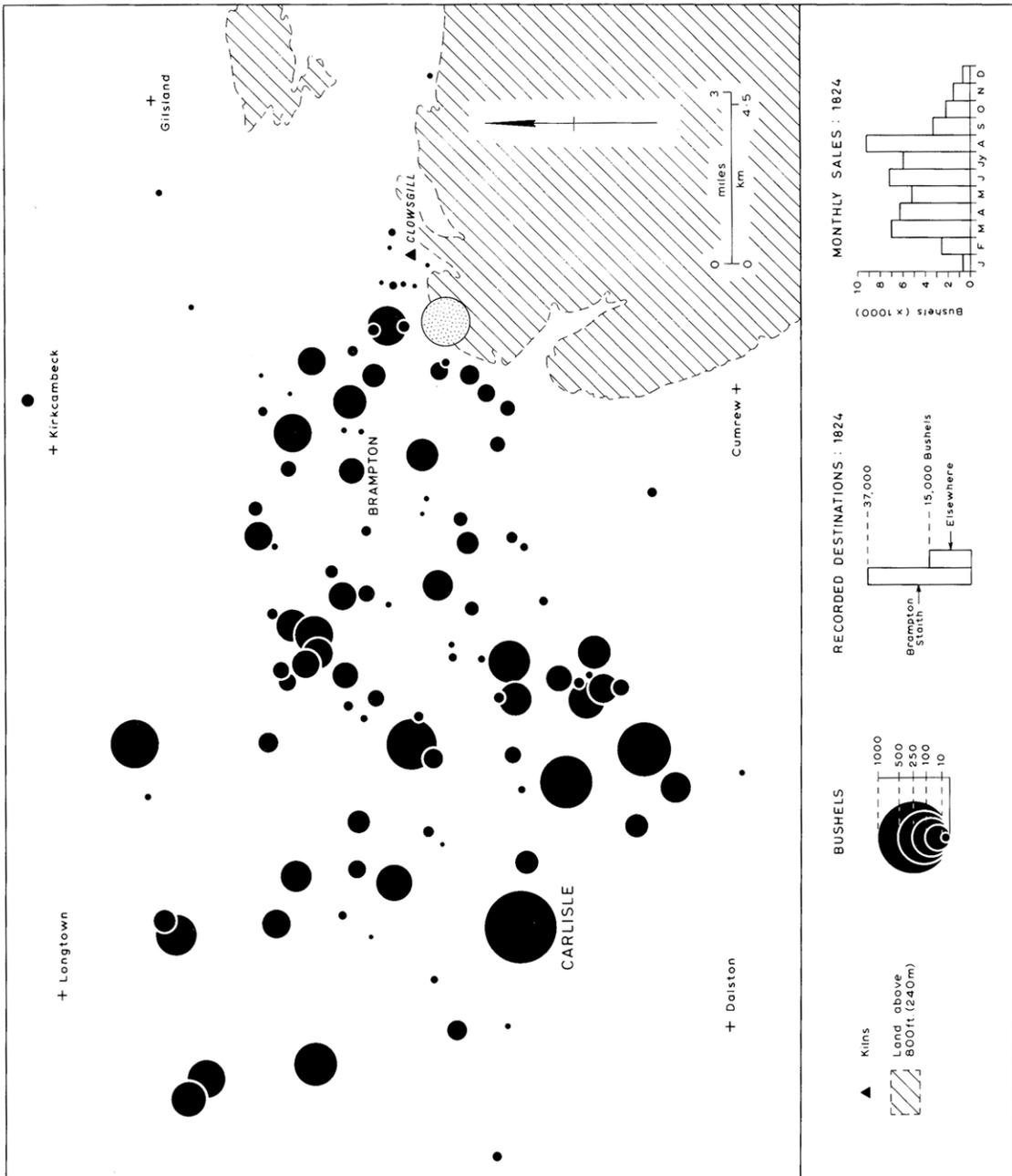


Fig. 2. - Sales of lime from Clowsgill kilns, 1824. For interpretation see text. The stippled symbol denotes lime used locally for building and repairs on the Carlisle estates. Source HN C691a.

occur infrequently in the accounts and suggest casual sales, others indicate a regular and well established trade in which, it would seem, credit played an important rôle.¹⁸ At least one of the four kilns at Clowsgill was at work at some time during the year, though it was not unusual for lime kilns to be worked only during the summer months.¹⁹ There was nevertheless a seasonal regime, a period of slack trade coinciding with the winter months of December and January. Comparison with other accounts may indicate how far the practice followed at Clowsgill was common to limeworks throughout the district.²⁰

Lime moved to Brampton over a waggonway, but otherwise by cart. Transport costs overland were high and were liable to be increased still further by tolls. But even a toll could become acceptable, as James Loch, Carlisle's principal agent, pointed out in 1826:

Sir James Graham says that the Farmers state . . . that the improvement of the road by enabling them to carry more [lime], will be a greater advantage than the payment of the toll would be a loss. Henderson says that it takes 5/- to carry a chaldron of lime six miles and if therefore the road by being improved will enable them to carry one fifth more the toll being 3d the saving to the Farmer upon every cart will of course be 9d.²¹

There seems no reason to question Dickinson's assertion that new and better roads "gave facility of transit for lime and for the abundant crops produced on the fresh soils".²²

According to Dickinson, lime was in great demand during "the period of forty years or more, over which the enclosures of the commons extended" (i.e. *circa* 1780-1820).²³ His statement can be examined in the light of the Naworth lime accounts as a whole.²⁴ The evidence is presented in Fig. 3 (A). Sales of lime evidently rose sharply during the 1770s, reached a peak during the Napoleonic wars and fell steeply thereafter. These years saw the enclosure of great areas of common in the Barony of Gilsland and in other districts served by the earl's kilns.²⁵ His own farms were also given generous doses of lime (Fig. 3(B)). It is not possible to apportion demand between town and country, but it should be noted that these were also years of significant town growth.²⁶ Later events are summarised in Table I.²⁷

TABLE I
Sales of lime from kilns leased from the earls of Carlisle (tons)

1839	14,376	1856	?	1873	16,443
1840	15,743	1857	19,189	1874	22,141
1841	13,419	1858	23,442	1875	19,273
1842	10,945	1859	22,647	1876	20,470
1843	11,375	1860	25,221	1877	20,676
1844	8,287	1861	19,842	1878	19,092
1845	13,348	1862	23,944	1879	16,930
1846	15,289	1863	26,714	1880	13,977
1847	12,555	1864	26,427	1881	11,930
1848	14,801	1865	30,111	1882	13,350
1849	16,019	1866	27,572	1883	15,163
1850	15,514	1867	22,815	1884	13,961
1851	14,562	1868	22,310	1885	15,265
1852	14,879	1869	25,163	1886	10,599
1853	13,278	1870	22,495	1887	9,690
1854	14,928	1871	22,704	1888	9,680
1855	18,440	1872	23,591		

By the 1840s “guano and other stimulating manures” were replacing lime in Cumbria.²⁸ One response to a shrinking demand was to reduce where possible the cost of burning lime. Clowgill was provided in 1844 with “water wheels for running the Waggon and all materials in and out of the Kilns, etc., by which the fixed expences have been much reduced, and water power entirely substituted for Horses”.²⁹ Trade revived subsequently and, as Table I shows, remained at a comparatively high level until the 1880s when agricultural difficulties, belatedly in this part of the country, began to have an effect.³⁰ Estate income from lime and stone royalties dropped by almost one half (from £1,180 to £630) between 1872 and 1888. By 1893 it had diminished further to £400 and by 1897 to £250.³¹ It was to fall yet again after 1900, in spite of the modest revival in liming noted by J. Smith Hall for Cumberland as a whole in the early years of the new century.³² Commercial lime-burning languished on the Naworth royalties between 1908 and 1925, when it was revived for a time.³³ By the 1930s, however, working kilns had become a rarity, here as elsewhere on the fells. Their story is worth tracing, not least because, however modest, it forms an integral part of changes which from time to time have profoundly affected the landscape and economy of Cumbria.

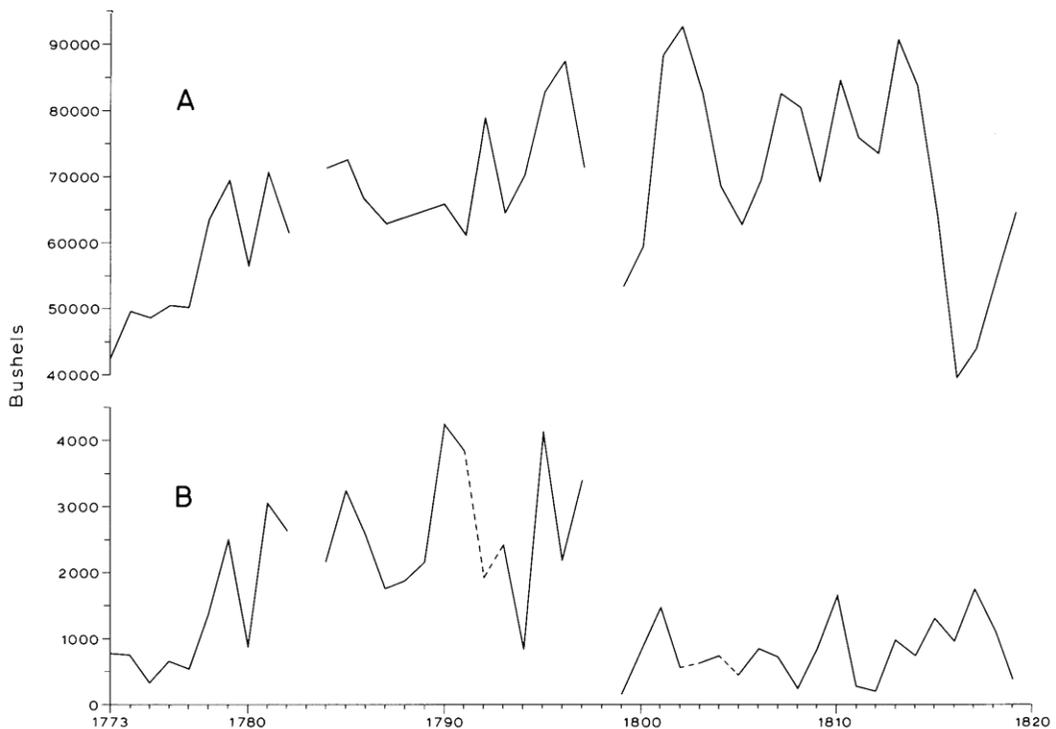


FIG. 3. — (A) Sales of lime from Naworth estates (B) Lime used on the Colliery Farms of the earls of Carlisle. Dotted lines indicate estimate based on value of lime sold. Sources: HN C645, 665, 666, Department of Palaeography and Diplomatic, University of Durham.

Notes and References

- ¹ J. D. Marshall and M. Davies-Shiel, *Industrial Archaeology of the Lake Counties* (Newton Abbot, 1969), 157-159. B. C. Skinner, *The Lime Industry in the Lothians* (Edinburgh, 1969), is of wider relevance than the title might suggest.
- ² C. B. Phillips, "Gentlemen entrepreneurs in north west England in the sixteenth and seventeenth centuries", discussion paper presented to the Agrarian Landscape Research Group of the Institute of British Geographers, 1971; R. W. Moore in *VCH Cumberland*, II, 382.
- ³ L. A. Williams, *Road Transport in Cumbria in the Nineteenth Century* (London, 1975), 98-100; J. D. Marshall and M. Davies-Shiel, *The Lake District at Work Past and Present* (Newton Abbot, 1971), 38; C. M. L. Bouch and G. P. Jones, *The Lake Counties 1500-1800* (Manchester, 1961), 273.
- ⁴ A point illustrated in advertisements of farm sales (e.g. *Cumberland Pacquet*, 7 Aug. 1798; *Carlisle Journal*, 7 Sept. 1816). Peat was also used as fuel in some districts.
- ⁵ Record Office, Carlisle. Hillbeck lime accounts, D/Lons/C/12. The statement is based on the accounts for 1787.
- ⁶ Record Office, Carlisle. Peter's Crook lime accounts, D/Cart.
- ⁷ This is not to belittle the contribution of individual small kilns. On this point see *Journal Royal Agricultural Society of England*, Second Series XVI (1880), 516, 519, 520 (liming at Winder Hall farm, Askham).
- ⁸ Public Record Office, Crest 34/27 (1888) for Bewcastle and Adm 169/48 (1873) for Alston Moor. The latter contains an exceptionally full account of the Alston coal mines circa 1870.
- ⁹ The earls of Carlisle were involved in both capacities at one time or another. The involvement of The Queen's College, Oxford, as owner of mineral rights in Renwick is shown in the College muniments. I am grateful to the Bursar and Fellows of the College for allowing me to see copies of relevant documents.
- ¹⁰ Examples from the Naworth estates of the earls of Carlisle will be found in HN C129a and C170 (Howard of Naworth MSS., Department of Palaeography and Diplomatic, University of Durham).
- ¹¹ Record Office, Carlisle, Talkin Fell Enclosure Award (GRE/1/119); HN C168a (e.g. Croglin, Farlam and Thirlwall [Northumberland] Enclosure Acts).
- ¹² Williams, *op. cit.*, 98.
- ¹³ A. Pringle, *A General View of the Agriculture of Westmorland* (London, 1794), 14, 29; F. W. Garnett, *Westmorland Agriculture 1800-1900* (Kendal, 1912), 54-55; *Lonsdale Magazine*, I, no. 5 (May 1820), 199-204; *Westmorland Gazette*, 24 Aug. 1844. I owe the last reference to Mr J. Hughes.
- ¹⁴ Report by Augustus Voelcker (no date) in Northumberland Record Office, 538/2.
- ¹⁵ "On the Farming of Westmorland", *Journal Royal Agricultural Society of England*, Second Series IV (1868), 18. The overland movement of lime elsewhere in Britain is discussed in M. Havinden, "Lime as a means of agricultural improvement: the Devon example", in *Rural Change and Urban Growth 1500-1800* (London, 1974), 104 ff., and in H. W. Gardner and H. V. Garner, *The Use of Lime in British Agriculture* (London, 1953), 137 ff. Waterborne traffic in lime is not considered in the present paper. There is relevant material in Record Office, Carlisle, Curwen MSS., Harrington Lime Tonnage Books, circa 1808-1814.
- ¹⁶ Based on HN C691a. The total of 52,000 bushels noted below the map is less than that indicated elsewhere in the estate papers for 1824. The map has been compiled from the daily lime account which runs from mid-January to mid-December 1824. It is possible that some sales at the beginning of 1824 are omitted. Omission certainly arises from a failure to identify customers who are listed by name only in the accounts.
- ¹⁷ For the use of lime in gas making, see E. G. Stewart, *Town Gas, its manufacture and distribution* (London, 1958), 3, 23 ff. Contemporary comment on the demand for lime in Carlisle occurs in NWC 3/2 (1832), Public Record Office (Transport Records). Lime for gas making occurs in HN C691a (1824, 1833).
- ¹⁸ HNC 645.
- ¹⁹ H. Stephens, *The Book of the Farm* (Edinburgh and London, 1844), III, 997; J. S. Owen, "The Moor Coal of North Yorkshire: the Farndale and Bransdale Area", *Bull. Cleveland & Teesside Local Hist. Soc.*, no. 10 (Sept. 1970), 13.
- ²⁰ The Clowsgill lime accounts for 1833 show a similar pattern.
- ²¹ HN C170/106, Alston Road papers, J. Loch to Earl of Carlisle, 11 March 1826.

- ²² *Essay on the Agriculture of East Cumberland* (Carlisle, 1853), 10. See also Williams, *op. cit.*, *passim*, for roads and agricultural improvements.
- ²³ Dickinson, *op. cit.*, 20.
- ²⁴ HN C645, 665, 666. Kilns at Clowgill, Talkin, Triermain and Thirlwall (Northumberland) are included.
- ²⁵ HN C170/104 (1813) and "Cumberland Enclosure Awards" (duplicated list, Record Office, Carlisle) for areas enclosed by Parliamentary acts.
- ²⁶ Bouch and Jones, *op. cit.*, 316-317. The quantity of lime applied to agricultural land was frequently large by the standards of a later age. Thus William Chapman, *Report on the Proposed Navigation between the East and West Seas, so far as extends from Newcastle to Haydon-Bridge* (Newcastle, 1795), 8, uses a figure of 4 tons per acre to calculate potential traffic in lime.
- ²⁷ HN C646. Kilns at Bishophill, Clowgill, Croglin, Forest Head and Thirlwall are included, though not all were working throughout the period. After 1838 coal and lime belonging to the earls of Carlisle were leased to successive members of the Thompson family, of Farlam and Milton.
- ²⁸ HN C695/4(1844); Dickinson, *op. cit.*, 20.
- ²⁹ HN C695/4 (1844). Clowgill is the only example known to the writer of water power being applied in this way in Cumbria. Many limeworks of course did not lend themselves to such changes. Some remains of the system were still visible at Clowgill in 1971. For the use of water elsewhere, Skinner, *op. cit.*, 19.
- ³⁰ For the chronology of depression see the remarks in *Journal Royal Agricultural Society of England*, Second Series XVI (1880), 495, and in HN C590a (1888). A small export trade is included in the accounts after 1838. This never exceeded 1,000 tons annually during the period covered by Table I and was usually much less. It appears to have ended during the 1860s, when shipments from Silloth are recorded. Land reclamation involving the use of lime was proceeding well into the 1860s (Webster, *op. cit.*, 35).
- ³¹ HN C646 and "Lime Accounts and Rental Statements", Old Brewery Offices, Brampton (for the period after 1888).
- ³² "Agriculture in Cumberland. A Comparison of 1900 with 1850", *Transactions, The Surveyors' Institution*, XXXVI (1903-1904), 427. File 15, "Colliery Rental Statements", Old Brewery Offices, Brampton, indicates an output of 5,000 tons of lime on the Naworth estates between May 1907 and May 1908.
- ³³ Files 51 and 112A, Old Brewery Offices, Brampton; Companies Registration Office, File 215978.

