

## The Beginnings of the Agrarian and Industrial Revolutions in Ayrshire

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(i) *Coal-Working.* To satisfy a demand for coal in Ireland, especially Dublin, the first real coal-pits in Ayrshire were sunk near Saltcoats just before 1700. Others followed at Kilwinning, Irvine, Ayr and near Girvan, enabling shipments to grow steadily throughout the century. Yet it must be emphasized that coal was not the basis of eighteenth century industrial development. Largely won for external consumption, it was little utilized for non-domestic purposes in the regions from which it was hewn, except for lime-burning. This process, adopted after 1760 to provide the new farming with a means of sweetening the soil, required a fuel, obtained from numerous small outcrop workings operating inland.<sup>1</sup> In the comprehensive description of economic life provided by the *Statistical Account of Scotland*, only the contributor for Kilmarnock mentions that an abundant coal supply was aiding the progress of manufactures. But this was coupled with cheap provisions as an asset to a rising industrial town, and no industrial process was cited requiring coal as a fuel or to furnish motive power.<sup>2</sup> Its function was evidently indirect; a community of nearly 6,000 persons, situated in a region devoid of forests and remote from peat mosses, could be assured of warmth in homes and workshops by the neighbouring collieries. We may also infer that coal fires were employed to heat water needed for the washing, dyeing, etc., of wool, cloth, etc.; for a limited iron-working; and also for soap-and candle-making; but these were only a part of contemporary industry. The Muirkirk Iron Works, founded late in the century (1787), was the sole Ayrshire establishment depending directly upon the energy of coal, and this antedated the main coal-using phase of the Industrial Revolution by more than a generation.<sup>3</sup> Accordingly, at the end of the eighteenth century, there was no tendency for industrial distribution to coincide with coal-working, a correspondence increasingly apparent during the next century.

1. J. H. G. Lebon, "The Development of the Ayrshire Coalfield," *Scot. Geog. Mag.*, 1933, pp. 138-54.

2. *Statistical Account of Scotland* (hereafter abbreviated to *S.A.*), edited by Sir J. Sinclair, 1791-9, Vol. II, pp. 84 ff.

3. "Fire engines" (i.e., steam engines) were used for pumping at collieries near Newtown, Saltcoats and Newmilns. See *S.A.*, Vol. II, pp. 262 ff., VII, pp. 1 ff., III, pp. 103 ff.

The principal coal-mines were confined to the coast until 1780; but modern forms of manufacturing became widespread, albeit most advanced generally in the north.

Apart from exports and lime-burning,<sup>4</sup> the last thirty years of the eighteenth century witnessed the substitution of coal for peat as a domestic fuel, at least in the Ayrshire Plain. Thus, in Fenwick parish, about five miles north of the new Kilmarnock mines, coals in 1793 were being used by "tradesmen" in preference to peat, although farmers (in proximity to large peat mosses) still burnt the traditional fuel.<sup>5</sup> In Girvan, coal was "plentifully supplied from Dailly."<sup>6</sup> In Craigie, the (southbound) carting of coal and lime was notable.<sup>7</sup> Negatively, we read of three parishes where the new fuel was expensive or difficult to obtain. For in Largs both coal and lime were scarce;<sup>8</sup> in Beith high prices supported arguments favouring the connection of Saltcoats with Glasgow by canal,<sup>9</sup> and in Ardrossan the unimproved parish roads hindered the distribution of the new fuel and the new means of improving the soil.<sup>10</sup> Indirectly, we also learn that Dailly coal was used throughout the neighbouring parish of Kirkoswald, for it is stated that although tenants had been relieved of many feudal servitudes, they were still obliged to cart coals at their laird's behest for a stated number of days each year.<sup>11</sup>

A colliery started about 1780 and situated about a mile southwest of Kilmarnock had within ten years attained an annual output of 8,000 tons and gave employment to 120 miners. 3,200 tons were exported in carts from Irvine; the remainder was consumed in Kilmarnock and the surrounding countryside.

The swelling economic momentum, of which developing coal-mining was but a part, was due ultimately to a double political impulse. The Act of Union, in 1707, brought Scotland into the English commercial system and opened trade with the colonies. From this, the west of Scotland, especially Glasgow, was quick to profit. Both commerce and industry rapidly advanced. Peace also succeeded to strife; for the '45 was too brief to undermine the new stability which was enabling enterprise to reap a reward. Thus was the pace of economic development forced; and the changes wrought between 1700 and 1800 were more far-reaching

4. This use is stated explicitly in the accounts for Loudoun (*S.A.*, Vol. III, pp. 103 ff.) and Dailly (Vol. X, pp. 34 ff.).

5. *S.A.*, Vol. XIV, pp. 53 ff. In the uplands of Kilwinning (XI, pp. 142 ff.) and Dailly (XII, pp. 90 ff.) peat was still largely cut.

6. *S.A.*, Vol. XII, pp. 335 ff.

7. *S.A.*, Vol. V, pp. 369 ff.

8. *S.A.*, Vol. XVII, pp. 503 ff.

9. *S.A.*, Vol. VIII, pp. 314 ff.

10. *S.A.*, Vol. VII, pp. 42 ff.

11. *S.A.*, Vol. X, pp. 474 ff.



and profound in the western Scottish Lowlands than generally in England.

(ii) *The Revolution in Transport.* Improved means of communication greatly contributed to the rising coal production by facilitating its wider distribution. Greater mobility of goods and persons constituted the foundation of agrarian and industrial progress. For between 1760 and 1790, the horse, formerly employed as a mount or as a pack animal, was given a new role, and became harnessed to the stage-coach or cart. In short, the use of the wheel became general and revolutionized economic life.

Till this era, road-building in Scotland was much neglected. Muddy tracks connected the scattered farms and few towns; the pedestrian, horseman or pack animal crept slowly forward, fording lesser streams, ferrying rivers, except at rare bridges, e.g. Ayr, (thirteenth century), Alloway and Kilmarnock. Thus the circulation of persons and goods was severely limited. Many simple tools, utensils and textile goods were made on the spot from local or home-produced raw materials; or were obtained from craftsmen in the burghs (which exercised the waning privilege of a territorial monopoly for their products in the surrounding district). Usually the movements of raw material, finished goods, producer and purchaser, were confined to a few miles, and consignments were small since the unit for goods traffic was the pack-animal. Thus, till at least the beginning of the eighteenth century, when a collier entered Irvine harbour, a horn was blown as a signal to the country-folk that coal was to be brought to the quays. Panniers containing coal were thereupon loaded on horseback and taken to the vessel.<sup>1</sup>

Of the poor state of the roads in the middle of the century there is evidence both in the *Statistical Account* and contemporary maps. In Ballantrae there were no made roads before 1774;<sup>12</sup> in Kirkmichael parish no improved roads existed before 1769;<sup>13</sup> in Kilmaurs "20 or 30 years ago" (before 1791) "there was not a single made road."<sup>14</sup> The MS. maps of the *Military Survey of Scotland* (1755-67)<sup>15</sup> at a first inspection (Fig. 1) might seem to belie these assertions, because a fairly comprehensive network is represented. But (to vary a statement used on modern Ordnance Survey maps), "the representation on this map of a road, track or footpath is no evidence"—of a made surface; and closer scrutiny reveals that the system served the needs of the unwheeled age in transport. For example, south of Girvan the traveller might

select one of numerous interlacing tracks on his way southwards to Ballantrae and Portpatrick, offering no better than a Hobson's choice; but in their multiplicity perhaps in slightly better state than if all traffic were concentrated upon a single route. A similar indeterminacy existed in the bundle of routes leading south-east from Ayr, as well as in the country between Maybole, Barr and Dalmellington. Ways over high ground were commoner than to-day, although many are shown on the original by single instead of by doubled lines, and were doubtless less frequented. These included the "Drove Road" from Kirkconnel to Crawfordjohn; the track from the Nith bridge by New Cumnock kirk to the same Lanarkshire terminal point; the routes from Dalmellington to Old Cumnock, from Mauchline to Darvel, from Barr to Bargrennan, and from Darvel to Eaglesham. Further limitations were imposed by the paucity of bridges, and the corresponding frequency of fords and ferries. For the whole of Ayrshire, but twenty-four bridges were indicated on the *Military Survey*. These were well-sited to ensure continuity (across the principal rivers) of the two main routes traversing the country from north to south. Bridges at Irvine, Ayr and Alloway carried the coast road across the Irvine, Ayr and Doon respectively; bridges at Stewarton, Kilmaurs, Kilmarnock, Riccarton, Mauchline, Ochiltree and New Cumnock spanned the chief rivers along the inland route to Nithsdale. Ways leading to the coast, and thus parallel to the drainage lines, could in general dispense with bridges; but apparently alignment to avoid lesser river crossings was often adopted. The contrast east and west of the Garnock River is illustrative. In the former direction, right-bank tributaries to the lower Irvine Water, e.g. Dusk Water, Lugton Water and Annick Water, flow from the watershed separating Ayrshire from Renfrewshire, and roads from the next county could keep between these streams and avoid bridging most of the way to Irvine or Saltcoats. But, from the west, the Garnock River receives numerous fast and substantial affluents flowing generally south-east from the uplands between Dalry and Largs, and athwart the line of potential traffic. Accordingly, the road following the valley from Paisley and Lochwinnoch (see Fig. 1) turned at Carse, just short of the ferry across the Maich Water, and passing through Beith, avoided the sequence of river crossings which a direct continuation to Saltcoats would have demanded. After passing through Beith, the road remained west of the River Garnock till Dalry, leaving only one more tributary—the Caaf Water—to be bridged.

Clearly, at many main river crossings, and at all lesser streams, the traveller employed a ferry-man or made his way across a ford. In many places the *Military Survey* was positive in the matter;

12. S.A., Vol. I, pp. 103 ff.

13. S.A., Vol. VI, pp. 102 ff.

14. S.A., Vol. IX, pp. 350 ff.

15. British Museum, Maps 115 h.



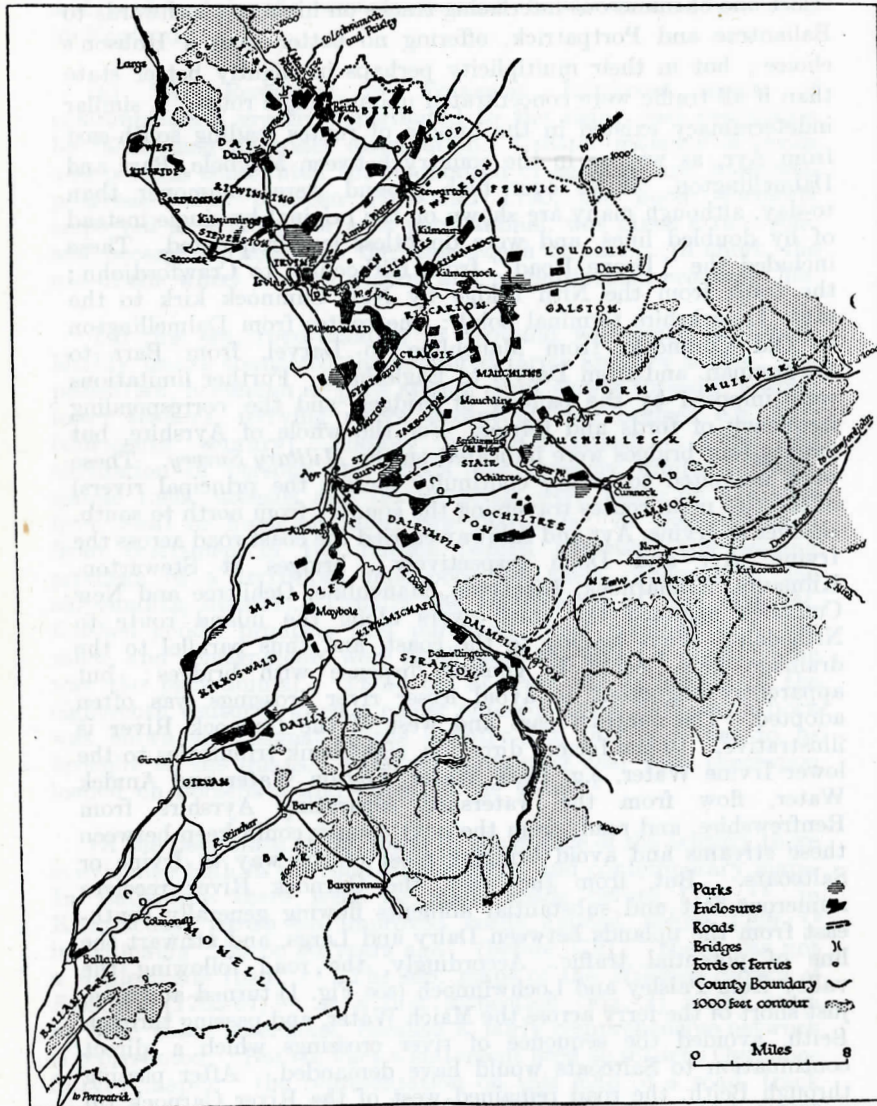


FIG. 1.—Communications and Enclosures in Ayrshire in the middle of the eighteenth century (based upon the *Military Survey of Scotland*, 1755-67).

the doubled lines denoting the road were drawn as far as one bank, then broken short and resumed on the opposite side. Thus, at Ballantrae, to specify the most striking instance, a broad estuary is shown between the broken ends of two stretches of the coast road. At Colmonell, four miles upstream along the Stinchar River, the alternative road was similarly treated, and a building on the south bank denominated "Fordhouse." Therefore, the only way to avoid ford or ferry over this river in 1760 was to cross by the bridge at Barr and make a long detour through Newtown Stewart, if the goal were Portpatrick. On Fig. 1 a symbol has been drawn denoting all fords and ferries thus indicated on the *Military Survey*; and but few further comments are needed.

On the MS., the old fords are rarely named; although doubtless their nomenclature was later adopted for the bridges shown on the 6-inch plans. But in the middle of the eighteenth century the road from Stewarton to Kilwinning crossed the Glazert Burn at "Galloway Ford." Also, the alternative routes between Mauchline and Old Cumnock are of interest. The direct road (now the main road) crossed the Ayr and Lugar Waters without the aid of bridges (the word "ford" is written on the map where Howford Bridge now stands). The longer road was carried across the Water of Ayr by Barskimming Old Bridge, just below the Lugar confluence, and joined the Ayr-Old Cumnock road at Ochiltree, just short of the bridge (and ford) over the Burnock Water. Thus a detour was necessary to avoid a double bridging. A road book published about fifteen years later,<sup>16</sup> after road improvement had begun, contains a note eloquent of the difficulties besetting the traveller, for, in the next county, "the road by the boat at Hamilton is one mile six furlongs shorter than by Bothwell Bridge; but as the River Clyde is sometimes impassable at the Boat the miles are numbered by the Bridge forward to Ayr."

Reconstruction began very locally on the Loudoun estates, where, about 1733, during developments that also heralded the Agrarian Revolution in Ayrshire, the Earl built a bridge over the Irvine, and laid a road from his Castle to Newmilns, which was the first made road in Ayrshire.<sup>17</sup> This appears to have antedated the main period of road improvements by nearly thirty years. Just after the *Military Survey*, the first act for turnpike roads in the county was passed.<sup>18</sup> Entitled "an Act for repairing and widening several roads in the county of Ayr," it recited a total of twenty-two roads, mainly in the north (Fig. 2) which "were much frequented by travellers, but . . . had become impassable in winter for wheel carriages and horses, and several bridges" were "in ruinous condition." On the petition of numerous

16. Taylor and Skinner, *Survey and Maps of the Roads of North Britain or Scotland*, London, 1776.

17. *S.A.*, Vol. III, pp. 103 ff.

18. 7 Geo. III (1766-7), c. 106.



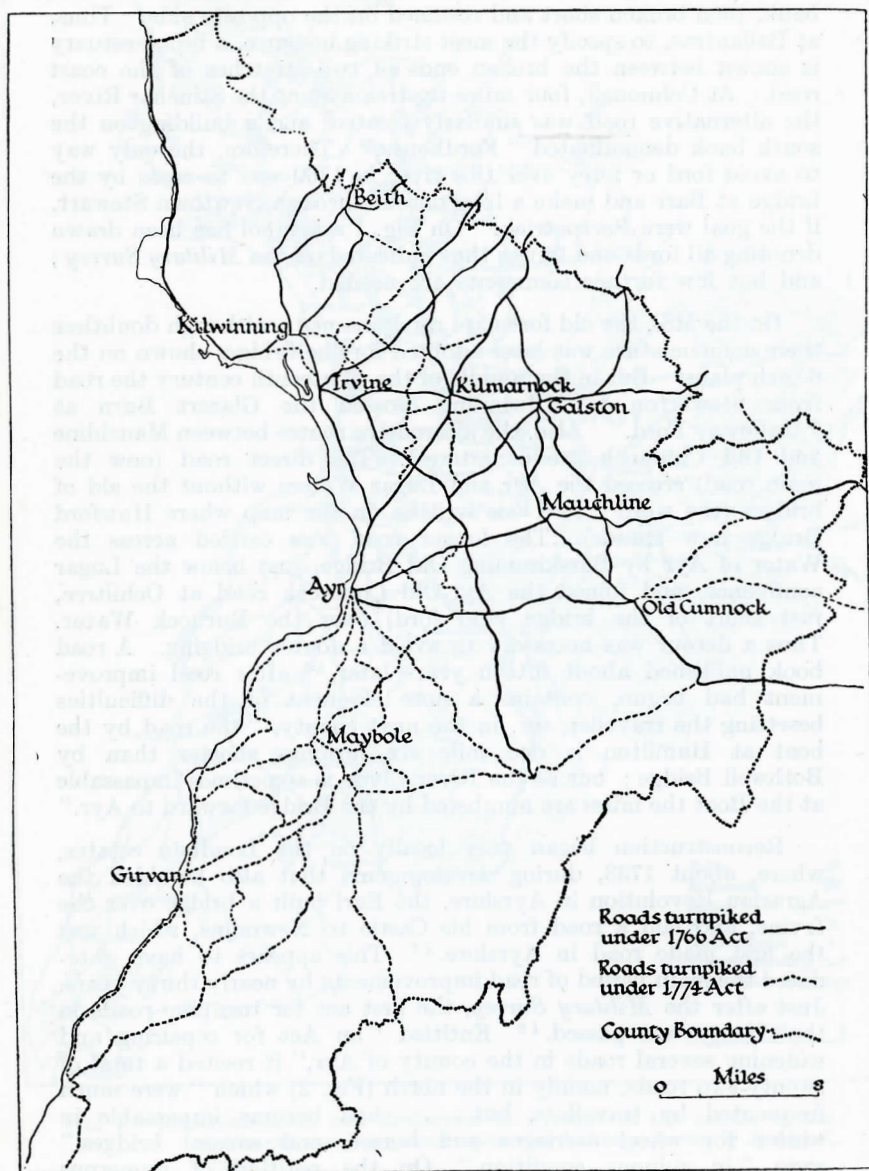


FIG. 2.—Roads which were improved in Ayrshire during the second half of the eighteenth century.

landowners, whose names were included in the preamble, it was enacted that the specified roads should be turnpiked, tolls levied, and the monies so obtained applied to improvements under the direction of a Board of Trustees. Statute labour was also to be commuted. A second Act followed in 1774,<sup>19</sup> which extended the Board's authority to main roads in the south, and to several connecting by-roads in the north, chiefly between Irvine and Kilmarnock (see Fig. 2). This second Act also enabled the Trustees to borrow capital on the security of the tolls, for experience since 1766 had shown that unless this power was granted, works proceeded but slowly. These Acts practically complete the list of works undertaken by the Ayr Trustees during the eighteenth century,<sup>20</sup> for under both Acts improvements were still proceeding in the last decade of the century.<sup>21</sup> Thus, in Muirkirk parish, at the time the minister was writing to Sir John Sinclair, three bridges were being built along the Ayr-Edinburgh road, over the Water of Ayr, the Greenock Water and the Water of Garpel.<sup>22</sup> In Ardrossan parish, the first turnpike road, under the 1766 Act, was constructed in 1779.<sup>10</sup> The Girvan-Ballantrae road, via Colmonell, was completed in 1791.<sup>23</sup>

Private works supplemented those undertaken by the Board. In Kirkmichael, heritors began to make roads in 1769; and by 1791 some 20 miles had been built, no turnpikes being set up.<sup>13</sup> In the parish of Sorn "about 25 years ago there was nothing that could properly deserve the name of a road. Now half a dozen roads have been made at the expense of the respective proprietors and three public roads."<sup>24</sup>

The contemporary method of road-making—an early version of macadamizing—was described by the minister of Symington. After stating that the public road from Portpatrick to Girvan and Edinburgh ran through the parish, he explained that "it was made of very durable materials. Land or whin stones were collected off the fields, beaten small, laid on to a great thickness and kept in excellent repair."<sup>25</sup>

19. 14 Geo. III (1774), c. 109.

20. Power was granted to a different board (including representatives of Glasgow Burgh, Renfrewshire and Lanarkshire), under 29 Geo. III (1789), c. 79, and 31 Geo. III (1791), c. 95, to turnpike the road from Glasgow to Sanquhar *via* Muirkirk. From just short of Muirkirk onwards for much of the way to Sanquhar, this road ran over the uplands within Ayrshire and near the county boundary. How far works had proceeded by 1800 is not known. (Later this stretch of the road was abandoned, though its course is shown on Ordnance Survey maps.)

21. It was not until 1805 that the Ayr Trustees applied for further powers (45 Geo. III, c. 28), when 35 more roads were turnpiked. Later acts were 49 Geo. III (1809), c. 32, 58 Geo. III (1818), c. 3, 7-8 Geo. IV (1827), c. 109 (a consolidating and culminating act, which virtually completed the road network). 10-11 Vic. (1847), c. 213, is as much concerned with widening and similar improvements as with a few last turnpikes.

22. S.A., Vol. VII, pp. 598 ff.

23. S.A., Vol. II, pp. 57 ff.

24. S.A., Vol. XX, pp. 143 ff.

25. S.A., Vol. V, pp. 394 ff.



Ministerial approval of these measures, and lengthy descriptions of the improved state of communications, amount to a chorus in the *Statistical Account*. In Loudoun there were formerly no carts in the parish; by 1791 there were 250;<sup>17</sup> in Colmonell there were only two carts 30 years previously, but at the time of writing "every farmer" had "two or three and some even more."<sup>23</sup> Kirkoswald, in 1750, had no communication with Ayr. Some families gave business to a carrier plying fortnightly from Maybole to Edinburgh. But by 1791 the riding post from Ayr to Girvan passed daily, and a carrier weekly from Girvan to Glasgow. Post horses and chaises were available at any time.<sup>11</sup> There was a daily stage-coach from Kilmarnock to Glasgow.<sup>2</sup> From Irvine there was much traffic along the four great turnpike roads to Kilmarnock, Ayr, Greenock and Glasgow. A fly ran to Glasgow three times weekly, and a stage-coach twice weekly to Greenock.<sup>26</sup> Thus, although parish roads often remained unimproved,<sup>27</sup> and were the subject of adverse comment, by the end of the century there was general satisfaction at the progress achieved during the previous generation.

Apart from the roads, no means of internal communication existed. The rivers, even the Irvine, Ayr, Doon and Garnock, are too small, shallow and rapid to permit navigation. Harnessed for several centuries to a succession of water mills, the weirs alone would have impeded the path of improvers. After 1760, proposals for canal construction were several times advertised, to connect Kilmarnock with Irvine and Saltcoats with Paisley;<sup>28</sup> but works were never begun. Only in Stevenston, to carry coal from inland pits to the shore, was a short canal dug in 1772, 2½ miles long, 12 ft. wide and 4 ft. deep, on which barges carrying 12-15 tons were towed.<sup>1</sup>

(iii) *Agriculture*. In Ayrshire, the Agrarian Revolution took nearly a century to run its course. Beginning about 1755, it had made very rapid progress by the end of the century.

To summarize this rural transformation in the briefest terms, it may be said that the principal changes were: (1) the enclosure of farmland that was previously wholly open; (2) The abolition of surviving co-tenancies and feudal servitudes, to be replaced by modern individual leases; (3) Consolidation and enlargement of many holdings; (4) The reduction or elimination of cottagers; (5) The general adoption of liming; (6) Soil drainage; (7) Moorland

reclamation; (8) Stock improvement, with the general spread of the Ayrshire and Galloway breeds; (9) Elimination of sheep from lowland farms except for wintering; (10) The extension of dairying at the expense of rearing; (11) Adoption of three-course farming in place of infield-outfield, with the introduction of improved implements and machinery; (12) Appearance of arable-mixed farming along the coast; (13) Rebuilding of steadings, farmhouses and cottages; (14) Increase and enlarging of country houses with expansion of policies and widespread ornamental planting.

Some of these processes were virtually completed within a few decades, either early or late in the great century of change; the remainder proceeded more steadily and continuously. Thus the first five aspects enumerated above were completed in much of the county by 1800. Soil drainage and moor reclamation (6 and 7) were chiefly accomplished after 1825, and the coastal belt of arable farming (12) did not become differentiated till nearly 1850. The remaining operations (8-11, 13-14) were in progress throughout the Revolution.

A just appraisal of the course of agrarian change down to 1800 is made easier by a clear conception of the state of the countryside in the middle of the eighteenth century. This the *Military Survey* permits; for in spite of its early date, its large scale (approximately two miles to the inch) and close detail delineate the country in a way not surpassed until the Ordnance Survey traversed the county a century later. Analysed in its entirety, it would demand many pages to describe its wealth of local detail; here only general statements applicable to much of the county will be formulated.

A copy (with certain modifications) of the *Military Survey* plan of Kilbirnie and Beith parishes is reproduced here as Fig. 3. The latter lies below a culminating height of 690 ft., which is a little lower than the usual upper limit of settlement in Ayrshire, and actually only Lochlands Hill was devoid of the close-dotted farmhouses, otherwise dispersed over the whole area at an average distance apart of about one-third of a mile. The north-west of Kilbirnie, however, extends above the 750 ft. contour on to the "Renfrew" Uplands, and the inhabited area terminated abruptly along this critical contour, in a fashion clearly depicted on Fig. 3. The extent and limits of settlement were therefore coincidental in 1755 with those of 1860 or even to-day.

But this is less remarkable than the layout of farmland. Little of Kilbirnie was enclosed; and not much more of Beith. In the latter parish, small paddocks and gardens surrounded the town, enmeshing as in a web; but the countryside generally had only witnessed the sporadic beginnings of enclosure, by single farms or

26. *S.A.*, Vol. VII, pp. 169 ff.

27. E.g. in Beith (*S.A.*, Vol. VIII, pp. 314 ff.), Ardrossan (Vol. VII, pp. 42 ff.), Kilwinning (Vol. XI, pp. 142 ff.), and Ochiltree (Vol. V, pp. 446 ff.).

28. See W. Aiton, "General View of the Agriculture of the County of Ayr" (*Board of Agriculture Report*), London, 1811, pp. 85-6. Cp. S. O. Addy, *Evolution of the English House*, London, 1898, c. 2.



parts of farms. Otherwise the unenclosed lands were mainly covered by the criss-cross symbol for "arable" land graphically depicting the furrows and "rigs" into which the soil was thrown by the current methods of cultivation. It is improbable that the area thus ornamented was actually under cultivation in a single year. The land nearest the farmhouses (the "infield" or "croft"), upon which the meagre supply of dung was cast in order to maintain

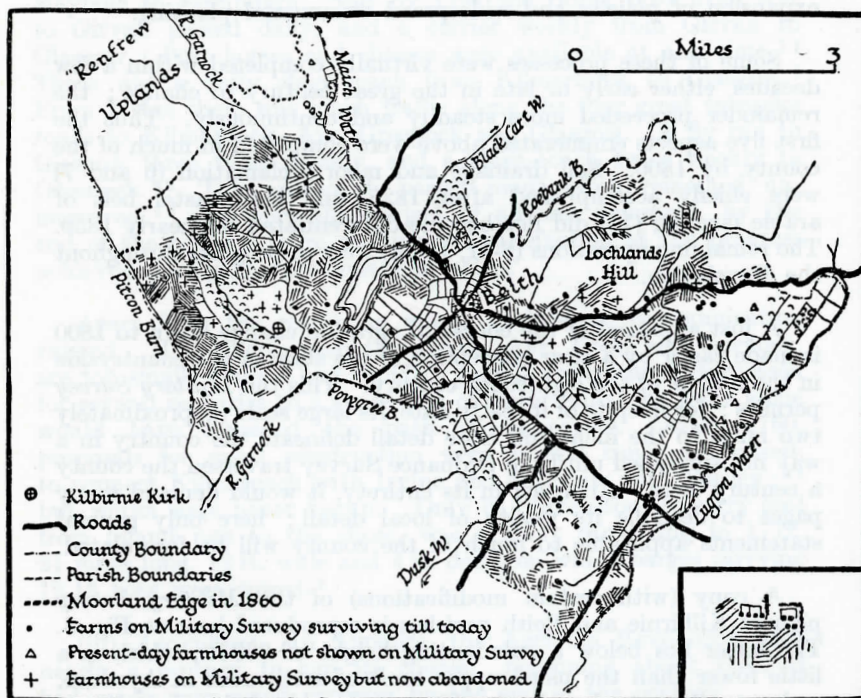


FIG. 3.—The Parishes of Kilbirnie and Beith, after the *Military Survey of Scotland*.

The cross-hatching employed here, as on the original, represents "arable" land. In the inset, on a large scale, a representative cluster of steadings is shown without suppression of detail.

continuous cropping, is certainly included; and probably also much "outfield" land, which, subject to temporary tillage without manuring, might be deemed arable whether bearing a crop or merely the marks of a recent cultivation. Only small areas, farthest from steadings on farms more widely spaced than normal, were in "permanent" pasture—to borrow a modern term.

In the redrawing and reduction it was impossible to preserve all the separate buildings of the clusters which are shown at most steadings on the original; only an enlarged single example has been given in the inset. These associated houses often number as many as six or eight, although three to five is more usual. Since both farmers and cottagers lived (with their cattle in winter) in these one-storeyed hovels corresponding to the "black houses" still surviving in the Hebrides, with walls of stones gathered from fields, turf, or mud plastered on stakes,<sup>28</sup> with roofs of thatch supported on couples or crutches, and outhouses in the modern sense (including byres, barns and tool-sheds) were rare, the numbers included in the clusters suggest that in 1755 co-tenancy or the association of numerous cottagers (living in small windowless huts) with a tenant or feuar, were uncommon. This is confirmed by Col. Fullarton, in his *Board of Agriculture Report* for the county, written in 1793, in which he fully describes the old agriculture. With many clusters are depicted small kitchen gardens or "kailyards" which, prior to the beginning of enclosure proper, constituted the only fenced land.

Reviewing the county as a whole, it may be said that in few parishes were farms so close as in Beith and Kilbirnie, where some improvements in tillage and animal husbandry had begun towards the end of the seventeenth century.<sup>29</sup> In many, each farm with its cross-hatched arable land is separated from its neighbours by a zone of pasture. But the general pattern of settlement and land utilization remained uniform over the Ayrshire Plain, including the sporadic beginnings of enclosure shown on Fig. 1.

But in the upland parishes of the south, enclosures were still quite unknown, and little islands of arable land were scattered along the main valleys or on the hillsides to a height of nearly 1,000 ft., in Muirkirk parish exhibiting a tendency even more marked than in the improved land of to-day, to localization on south-facing slopes. (Fig. 4).

During the last 25 years of the eighteenth century, the enclosure movement made very rapid progress, and, with it, infield farming was practically abolished. A Mr. Fairlie, who became manager of the Eglinton estate about 1770, and who had seen improved farming in the Lothians,<sup>29</sup> introduced a new type of lease which stipulated that not more than a third, or in some instances a quarter, of the land was to be ploughed in any one year, and none was to be cultivated more than three years in succession. Combined with enclosure, this measure effectively destroyed the infield-outfield system, and ensured that all land was cultivated in rotation.

29. J. H. G. Lebon, *The Land of Britain*, Part I, "Ayrshire," London, 1937, c. 2.



The author has been shown MS. "crop books" in which estate factors kept a record of each farmer's annual use of his fields, so that the terms of lease could be enforced. Artificial grasslands (mainly rye-grass with clover) had been introduced about 1735 on the Loudoun estates<sup>17</sup> and in the parish of Stair,<sup>30</sup> but did not make much headway for a generation. Then, stimulated by the heavy liming which was integral to the new farming, it greatly enhanced the stock-carrying capacity of the land, this in turn permitting the slow improvement of breeds of cattle.

The parish *Statistical Accounts* written between 1791 and 1795 reveal that much of the Ayrshire Plain was enclosed and had adopted three-course farming (another term for the Fairlie

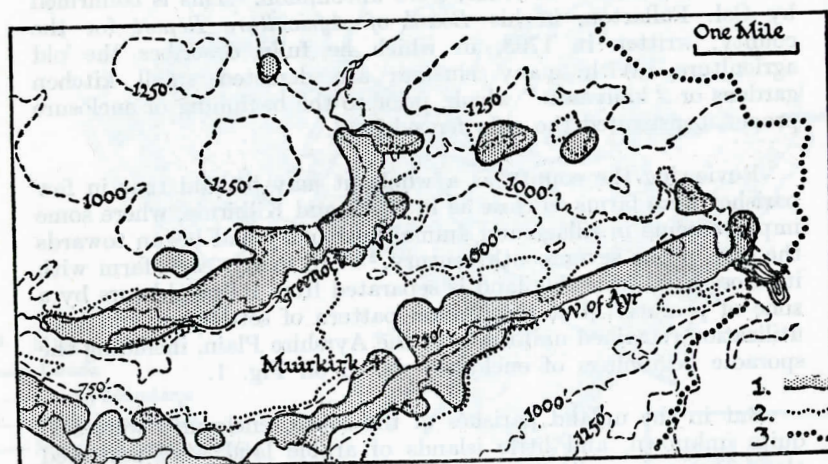


FIG. 4.—The extent of arable land in part of the Parish of Muirkirk, in the middle of the eighteenth century and about 1930.

1—Arable land shown on the "Military Survey of Scotland"; 2—Moorland Edge or Head Dike, from the Popular Edition, Ordnance Survey of Scotland, One-inch Map; 3—County Boundary.

rotation) between 1775 and 1790. Thus, in Loudoun, the land was "nearly all enclosed";<sup>17</sup> in Dreghorn enclosure had been continuous since about 1760;<sup>31</sup> Dalrymple,<sup>32</sup> Riccarton,<sup>33</sup> Stevenston,<sup>34</sup> St. Quivox,<sup>35</sup> Dundonald,<sup>36</sup> Kilmaurs,<sup>14</sup>

30. S.A., Vol. VI, pp. 112 ff.  
31. S.A., Vol. IV, pp. 280 ff.  
32. S.A., Vol. IV, pp. 305 ff.  
33. S.A., Vol. VI, pp. 113 ff.  
34. S.A., Vol. VII, pp. 1 ff.  
35. S.A., Vol. VII, pp. 353 ff.  
36. S.A., Vol. VII, pp. 615 ff.

Dunlop,<sup>37</sup> Kilwinning,<sup>38</sup> and Symington<sup>39</sup> had all been largely enclosed since about 1770; in Kirkmichael only two or three farms remained to be enclosed.<sup>13</sup> In Ardrossan enclosures were making progress;<sup>10</sup> in Fenwick the upper part of the parish was still open;<sup>5</sup> in Dailly the arable land (near the Water of Girvan) was fully enclosed, but pastoral farms only partly so;<sup>40</sup> in West Kilbride there was still a rural conservatism to be overcome before the benefits of the new agriculture could be enjoyed.<sup>41</sup>

In a few areas, development during the previous generation had taken another course; thus, in Dalry, grazing farms had been enlarged in the previous 30 years;<sup>42</sup> and the same was true of the next parish of Ardrossan.<sup>10</sup> In Old Cumnock farms on the Dumfries estates were being let annually in grass,<sup>43</sup> and it seems that this was a recent development, because all these parishes reveal the normal amount of arable land (for 1755) on the *Military Survey*. This unorthodoxy was to be banished soon after 1800.

But the upland parishes of the south remained backward. Improvements were in their infancy in Colmonell in 1791, and it is from the minister of this parish that we derive our lengthiest discussion of the social and economic implications of enclosure.<sup>23</sup> In Muirkirk the new ways were the subject of talk but had not been put into practice.<sup>22</sup> Ballantrae,<sup>12</sup> Ochiltree<sup>44</sup> and New Cumnock<sup>45</sup> continued their traditional rearing of black cattle (for the English towns), and sheep, with only limited infield cultivation of oats, bere and potatoes.

The new farming allowed dairying, and the "Cunningham" or "dairy" breed of cattle, to extend widely. In 1760, cheese-making was restricted to the Dunlop district, and elsewhere, even in the Plain, the farms carried only black cattle and sheep. Dairy produce was often scarce, e.g. in Kirkoswald.<sup>11</sup> By 1790, in Craigie "much butter and cheese was made," and the breed was improving;<sup>7</sup> in Symington "butter and cheese" were largely made "for sale in Ayr, Kilmarnock and Glasgow."<sup>39</sup> In Stevenston,<sup>34</sup> Dreghorn,<sup>31</sup> Dundonald,<sup>36</sup> Kilmaurs,<sup>14</sup> Kirkoswald<sup>11</sup> and Dalry<sup>42</sup> dairying was advancing, and reducing the numbers of black cattle and sheep.

37. S.A., Vol. IX, pp. 537 ff.

38. S.A., Vol. XI, pp. 142 ff.

39. S.A., Vol. V, pp. 394 ff.

40. S.A., Vol. X, pp. 34 ff.

41. S.A., Vol. XII, pp. 404 ff.

42. S.A., Vol. XII, pp. 90 ff.

43. S.A., Vol. VI, pp. 407 ff.

44. S.A., Vol. V, pp. 446 ff.

45. S.A., Vol. VI, pp. 398 ff. In Ochiltree parish, in addition to homespun weaving, snuff-boxes, toddy-ladles and reaping-hooks were made in the farmhouses, and were widely distributed in Scotland. See A. Murdoch, *Ochiltree*, Paisley, 1921, p. 172.



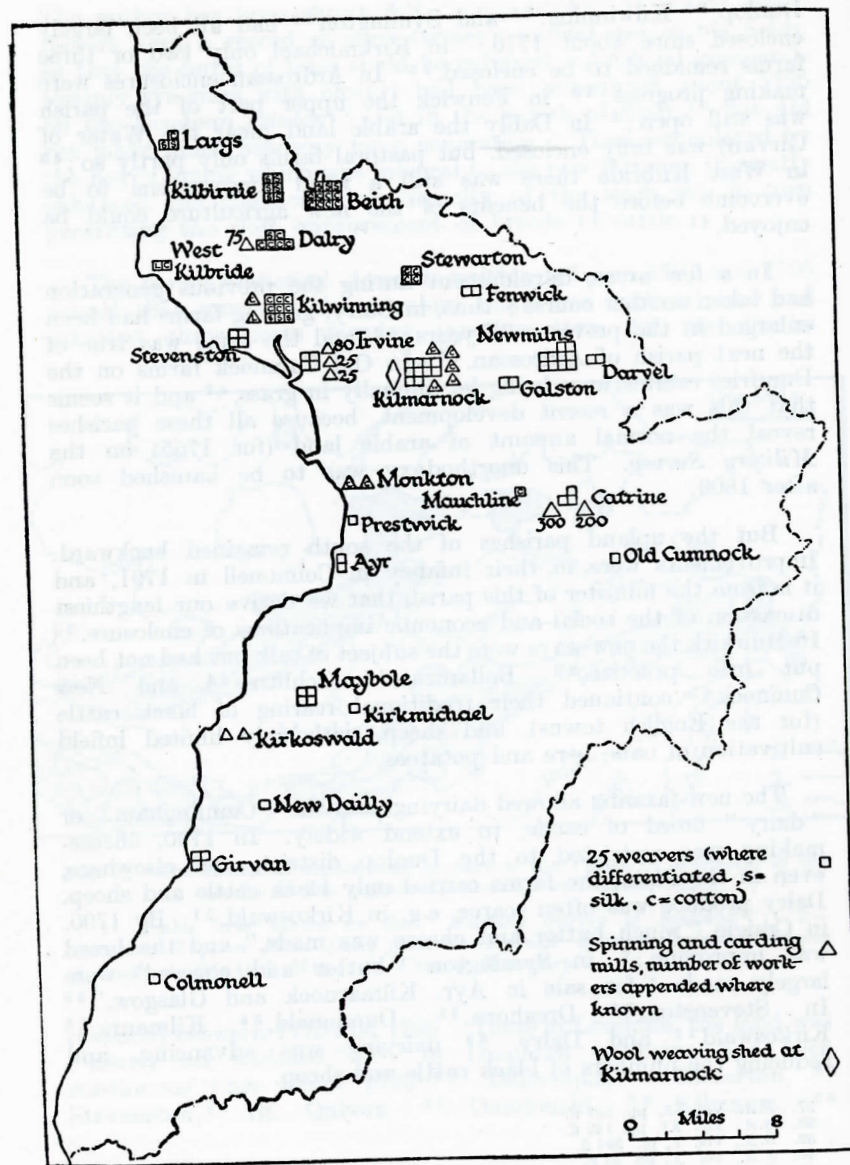


FIG. 5.—The textile industries of Ayrshire in 1790-5 (based upon the returns given in the *Statistical Account of Scotland*, ed. Sir John Sinclair).

In the Ayrshire Plain, then, by 1800, about a fifth or a quarter of the land was in oats; perhaps a tenth in peas, beans, and potatoes. The rest was artificial grassland, part for mowing, the rest grazed. Turnips and wheat were being tested near the coast and along the Irvine River. A little flax was commonly grown, for home spinning and weaving of this fibre had been encouraged by the Board established soon after the Act of Union.

The rebuilding of farmhouses was but local before 1800. In Kilmaurs the advance was exceptional;<sup>14</sup> but in the next parish, Kilmarlock, the minister deplored the poor quarters of the country folk.<sup>2</sup> In Sorn "in the last 10 or 12 years most farmhouses have been rebuilt with considerable improvements";<sup>24</sup> and in Dailly<sup>40</sup> "low huts had been replaced by neat and commodious houses for farmers, and cottages were more cleanly and comfortable." But many authors of the parish accounts are silent about housing, although voluble on the subject of improvements in agriculture.

(iv) *Industry.* Only domestic and craft manufactures existed in Ayrshire in 1750. These were diffused equally in the farmhouses, the early small "kirktoons" (villages clustered around the parish church) and the few towns. Kilmarlock was the only town primarily engaged in manufacturing, owing its eminence to the patronage of the Boyd family (who obtained the charter erecting it as a Burgh of Barony in 1591), and to its importance as the bridging point on the Marnock Water where the Nithsdale road met the Ayr-Glasgow road. At Stewarton, a corporation of bonnet-makers, selling their products in Glasgow, had flourished since the mid-seventeenth century. At Beith, where but a few houses had stood in the shelter of the kirk at the Revolution, linen manufacture had brought the village precociously forward after 1740, this branch of production attaining its maximum about 1760.<sup>9</sup> The ports—Ayr, Saltcoats, Irvine and Girvan—were chiefly engaged in commerce, above all the coal export, in fishing, a little shipbuilding, and in Girvan at least, smuggling.

Much more widespread was domestic rural craftsmanship, flourishing in many districts till after 1800. The minister of Maybole could report in 1793 that there were 80 looms for wool in town and country employing 300 persons;<sup>46</sup> in the neighbouring parishes of Dailly<sup>40</sup> and Kirkoswald<sup>11</sup> coarse woollen cloth, blanketing and plaiding were manufactured in farmhouses and cottages from raw material brought from Argyllshire and Galloway. Linger in Dreghorn in 1791, in a district already deeply involved in the new economic currents, "were a few weavers

46. *S.A.*, Vol. III, pp. 219 ff.





FIG. 6.—The distribution of population in Ayrshire, according to Dr. Webster's Census of 1755.

The classification of villages and towns was derived from the "Military Survey of Scotland"; it should be borne in mind that some of the "villages" were legally burghs, and the caption to the second ornament in the legend might accordingly read "Large Villages and Small Burghs." The figure in the caption to the third ornament should be 2,000.

... employed in weaving such kinds of cloth as are used by country people.<sup>31</sup> Linen cloth was still made in the farmhouses of Monkton parish;<sup>47</sup> and was just introduced and making headway in New Cumnock.<sup>45</sup>

Accordingly, with cloth-making largely distributed in the farmhouses, and but a few craftsmen (smiths, tailors, wrights, candlemakers, shoemakers, carpenters and the like) in the villages or even scattered in the country, we may readily visualize that "industry" was essentially small-scale and widely diffused. This scattering was fostered by the state of communications. With the impediments to circulation which existed in 1750, specialist craftsmen could not become concentrated, or they would lose touch with their customers. Tailors travelled from one farm to the next, making clothes for each family from a bundle of homespun.<sup>45</sup>

From about 1775, Glasgow and Paisley rapidly developed as the centres of new textile manufactures; especially of cotton and silk, employing new spinning machinery. Around these central stars in a new industrial system were clustered satellites large and small, including towns such as Beith or Girvan, also villages scattered afar in the Carrick dales. The new industry was almost from the first dichotomous in its organization; the carding and spinning branches, under the influence of Arkwright's and other inventions, were already being developed in factories; but weaving remained a craft, the unit of production being the few looms in a master-weaver's home. Some smaller workshops containing spinning machinery were operated in this pioneer period by methods that were soon abandoned, e.g. in Dundonald, thirty persons were employed in 1791 by a carding machine turned by a horse; but in general power was obtained from running water, and the new "jeanies" were set up on the banks of fast-flowing streams.

But both mills and weavers operated only where roads allowed carriers to bring raw fibre or spun thread and take away the finished product. The localization of the new textile manufactures was thus greatly influenced by the new main roads (Figs. 2 and 5). Kirk towns grew rapidly as roads were improved; and at cross-roads or bifurcations, villages often quickly appeared in previously open country. The new village of Whitellets, near Ayr, is a good instance. Here, two main roads—Ayr-Muirkirk and Ayr-Galston—bifurcate. No houses existed at this point on the *Military Survey*; but by 1800, 300 persons lived here, supported by weaving or coal-mining. Although contributors to the *Statistical Account* were usually content to describe the rise of weaving, with perhaps spinning, and append occupational statistics, at least one perspicaciously observed that the new public road from Edinburgh





FIG. 7.—Changes in the Distribution of Population in Ayrshire between 1755 and 1801.

The caption to the second ornament should read "Large Villages or Small Burghs"; to the third, "Burghs and Towns."

to Ayr through his parish (Mauchline)<sup>48</sup> had encouraged the establishment thereon of two new factories—the iron-works at Muirkirk and the cotton-works at Catrine.

Accordingly, from about 1785, silk and cotton weaving, with tambouring, spread rapidly. In Straiton,<sup>49</sup> 12 weavers with their journeymen and apprentices, engaged till that time in making woollen webs for the Ayr and Maybole markets, had by 1791 changed to muslin for the Paisley merchants. The recent appearance of silk-weaving in Stevenston,<sup>34</sup> Irvine,<sup>26</sup> Beith,<sup>9</sup> Dalry<sup>42</sup> and Monkton<sup>47</sup> (1787-90) was fresh in the minds of those describing parish life for the *Statistical Account* (Fig. 5). In Galston, as a satellite of Kilmarnock, the older shoe-making industry declined as the weaving of lawn and gauze was established in 1789-91.<sup>50</sup> The full extent of the development of new manufactures, the appearance of new villages, and the expansion of old, is depicted in Figs. 5, 6 and 7.

Two instances are of especial interest. It has been previously shown that Kilbirnie parish was abnormally inaccessible, owing to the sequence of unbridged rapid streams draining from the "Renfrew" Heights to the River Garnock. The memory of its remoteness, for "it was seldom visited by strangers, and was rather noted for the primitive roughness in speech and action of its inhabitants," lingered till the nineteenth century.<sup>51</sup> But (Fig. 2) a main road was laid under the 1766 Act, and the old Water mill by the Garnock bridge, shown on the *Military Survey*, became the nucleus of an industrial community rapidly growing by 1800 (Fig. 8). In 1791, silk weaving was active; shortly afterwards a cotton mill was established, followed by flax mills. Under the 1805 Act a branch turnpike road was constructed from Kilbirnie to the Largs-Dalry road, completing the range of geographical advantages encouraging growth during the first phase of the Industrial Revolution.

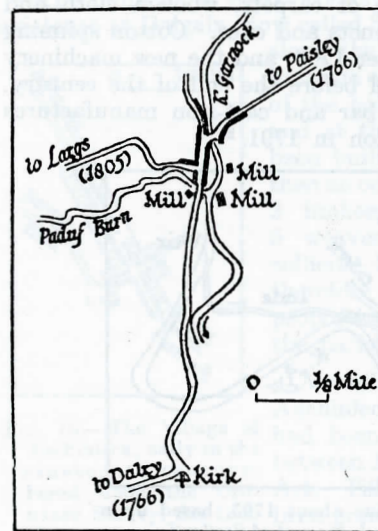


FIG. 8.—The village of Kilbirnie, early in the nineteenth century.

48. S.A., Vol. II, pp. 100 ff.

49. S.A., Vol. III, pp. 586 ff.

50. S.A., Vol. II, pp. 71 ff.

51. J. Dobie, *Cuninghame Topographized*, Glasgow, 1876, pp. 372-4.



At Catrine, a busy industrial village was planned and built in the years after 1787. On a sheltered holm a five-storeyed twist mill was erected, having 5,240 spindles driven by large water-wheels and employing 300 persons. Around a neat village was built (Fig. 9), containing a carding mill, "jeanies" and workers' homes, which, in advance of the still prevalent traditional huts, were stone-built, two-storeyed and slated. The laudatory description in the *Statistical Account*<sup>24</sup> states that after the first five years the population had reached 1,350. The promoters, Alexander of Ballochmyle and Dale of Glasgow, tried to ensure the maintenance of decent social standards by building a church and schoolhouse, by providing gardens and pasture for cows, and by police measures, which included gates locked each evening at either end of the main street.

The advance of Kilmarnock between 1760 and 1800 was remarkable. In 1740, serge-making was the chief trade; but shoe-making was then introduced and prospered. By 1791 there were 56 master shoe-makers employing 408 men. In collaboration, tanning, sheep-skin preparation, glove-making and saddlery became prominent. A woollen company formed in 1766 had greatly fostered the manufacture of carpets, woollen cloth and woollen goods such as duffles, bonnets and caps. Cotton spinning and weaving rapidly increased after 1780, and the new machinery was already being applied to wool before the end of the century. Dyeing, candle-making, tobacco, bar and cast-iron manufactures completed the census of production in 1791.<sup>2</sup>

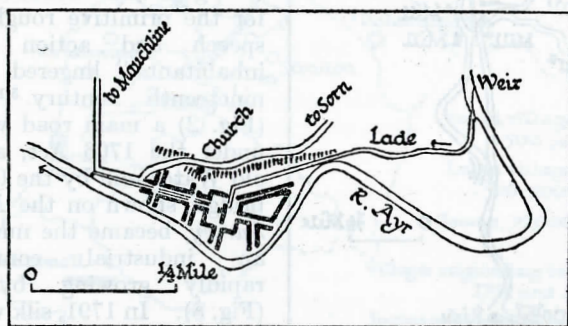


FIG. 9.—The Village of Catrine about 1795, based upon the Plan in the *Statistical Account of Scotland*.

Other industries which progressed, or were introduced before 1800, included shipbuilding, especially at Saltcoats and Irvine, with its ancillary, rope-making. Iron-works, started at Muirkirk in 1787, and still experimental in 1791, were already being duplicated at Glenbuck, and the rough pottery made at Stevenston, Old Cumnock, Sorn and Coylton was by 1810 causing wooden cups and platters to disappear.

(v) *Population Changes.* The growth of old villages and the appearance of new, was not entirely due to the progress of the textile industries. Many kirktoons increasingly became the home of colliers, for till 1800 few exclusively mining villages had been founded. But apart from this, the re-fashioning of the countryside, which, in addition to the work of enclosure, was coupled with extensive rebuilding of farmhouses and cottages, caused an increase of masons, carpenters, joiners, wrights, blacksmiths and day-labourers. The growing road traffic demanded ostlers, carriers and carters. The rising standard of life gave more employment to tailors, shoemakers and seamstresses. Many of these tradespeople were doubtless recruited from the children of displaced cottagers as farms were consolidated and enclosed. There must have been a steady drift of families from the countryside to the new or enlarging villages, and thus again the influence of the new roads, in re-grouping the population, became manifest. For Kilwinning, it was stated specifically that from the one or two cottages formerly attached to each farm and now demolished, the inhabitants had moved to Irvine or neighbouring towns to engage in manufactures.<sup>38</sup>

The minister of Sorn<sup>24</sup> described how a village had come into existence at Dalgain (now called Sorn) within the previous 16 years, along the Ayr-Muirkirk road and near the junction of the Galston road. The proprietor of the holm had begun to feu about 1775, and at the time of writing 34 houses had been built containing 191 persons. Giving then an occupational census—3 shopkeepers, 3 innkeepers, 3 masons, 7 shoemakers, 5 weavers, 5 tailors, 4 seamstresses, 7 colliers—he commented "the village is therefore evidently the residence of a large proportion of the tradesmen belonging to the parish."

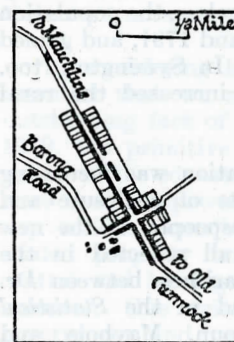


FIG. 10.—The Village of Auchinleck, early in the nineteenth century, based upon the Ordnance Survey, Six-Inch Plans (1st ed.), and Thomson's *Atlas of Scotland* (1832).

(Barony Road should read Barony Road.)

in the rear.<sup>52</sup> Here, the rectilinear impress of the surveyor—who dominated road-making and enclosing alike—is especially manifest and serves to distinguish these new villages from the older (Fig. 10).



But it is dangerous to over-simplify an account of population movements between 1760 and 1800. Rural depopulation had begun in the Southern Upland parishes before the Enclosure Movement, and may be connected with the development of cattle-grazing and the decline of cultivation whilst farmland still remained unfenced. This appears to be the cause of much of the decrease indicated on Fig. 7 in the row of southern parishes. It seems also to have contributed largely to the decline between 1755 and 1791 in Kilwinning,<sup>53</sup> Largs,<sup>53</sup> and West Kilbride.<sup>41</sup>

The first effects of enclosure, as already stated, were to reduce cottagers and hence the rural population. In Barr<sup>54</sup> and Colmonell,<sup>23</sup> where enclosing had just begun in 1791, this consequence is fully explained; and hence the decreases shown on Fig. 7 have a double cause—extension of grazing and beginnings of enclosure. But later, as the full benefit of agrarian improvements were being reaped in a higher level of production, the land could support more workers. Cottagers did not return, except in a limited way as married labourers in tied cottages; but the rise of dairying required more farm-servants—cowmen and dairymaids—who usually lodged at the farmhouse. Thus, in a parish such as Stair, which was among the first to benefit by improved husbandry, and which remained villageless, the population increased by more than a third between 1755 and 1791, and gained a further 20 per cent by the 1801 census. In Symington, too, the minister is positive that enclosures had increased the rural population.<sup>39</sup>

Over the Ayrshire Plain generally, population was increasing at the end of the century. The full effects of enclosure and agrarian improvements, the increase of tradespeople, of the new textile-industries and of coal-working were all reflected in the 10-25 per cent increase recorded in most parishes between Dr. Webster's Census of 1755 and that included in the *Statistical Account* (1791-9). In Beith, Sorn, Loudoun, Maybole and Newtown-upon-Ayr, the increase of manufacturing was especially rapid, and concomitantly the rise in population. But the greatest growth was at Kilmarnock (which was to exceed 10,000 early in the next century) and at Saltcoats (where weaving, coal-mining and coal-exporting were all flourishing after 1785).

53. *S.A.*, Vol. II, pp. 360, Vol. XVII, pp. 503 ff.

54. *S.A.*, Vol. XII, pp. 81.