

importance in Shotts. It is admitted by competent judges, that the soil is in general very good; why then should the benefits of such ameliorations be withheld? With regard to the reclaiming of waste land, the experiment has been tried again and again, and the result has invariably been, that the expense of such improvement, when judiciously made, is repaid in a few years, and that the land is ever after able to stand the regular routine of cropping.

The industry of the working classes here is amply recompensed; and were they more provident of their earnings, their happiness and comfort would be much increased.

August 1839.

PARISH OF OLD OR WEST MONKLAND.*

PRESBYTERY OF HAMILTON, SYNOD OF GLASGOW AND AYR.

THE REV. WILLIAM THOMSON, MINISTER.

I.—TOPOGRAPHY AND NATURAL HISTORY.

Name.—THE ancient name of the Monklands is unknown; but it appears from the Chartulary of the Monks of Newbottle, for many years lost, but recovered by Patrick Modart, about 1462, and now in the Advocates' Library, that the present was the popularly received name of this district before 1323. The etymology is not difficult. The lands of Monkland, formerly constituting a third part of the domains of the Abbey of Newbottle, were for many ages the property of a company of Cistercian or Bernardine monks belonging to that abbey, and hence the very obvious appellation, the "Monklands," was given to all their ecclesiastical domains in this quarter of the country. When this extensive district was afterwards divided and erected into two parishes, one of these parishes was called Old or West Monkland, and the other New or East Monkland, and they are now popularly known by the names of the Old and New Monklands.

Boundaries, Extent, &c.—The parish of Old Monkland is a remarkably fine, extensive, rather flat and low-lying district, extending along the eastern bank of the river Clyde for many miles, immediately after leaving the highly ornamental and picturesque scenery of Bothwell and Hamilton, and before it reaches the great

* Drawn up by the Rev. William Patrick, author of a Description of the Plains of Lanarkshire, &c.

commercial emporium of the west, the city of Glasgow. "A stranger," says the Rev. Mr Bower in the last Statistical Report, "is struck with the view of this parish. It has the appearance of an immense garden." The old parish constitutes by far the lowest, richest, and most interesting portion of the Monklands, and hence the remark of the same authority, "the monks, who usually fixed upon a pleasant situation, had a residence here." Perhaps their superior skill in agriculture and gardening rendered the places they fixed upon at once more pleasant and valuable; but, had that able and diligent minister of the Gospel lived to the present day, he would have been constrained to admit, that the monks were for once deceived in their choice, for, although the surface of Old Monkland is the most valuable, still a very large proportion of the mineral stores which supply her furnaces and other public works are brought from the New Monkland. The true value of the respective districts at the present day is therefore much on the side of the east parish.

From Monkland House in the south-east, to Clyde Iron-works in the north-west, the parish of Old Monkland is about 10 miles in length. The widest place, from the bridge over the Calder at Carnbroe to the lodge near Glenboig in the Haggmuir, is about $4\frac{1}{2}$ miles. Between Calder Iron-works and the lands of Rochsilloch the distance is only about 4 furlongs, while in other places the parish varies in breadth from 2 to 3 miles. Old Monkland is bounded on the north by the parishes of New Monkland, Cadder, and barony of Glasgow; on the east, by part of the parishes of New Monkland and Bothwell; on the south, by Bothwell; and on the west, by the river Clyde, which separates it from Cambuslang and Rùtherglen.

Meteorology.—The average ranges of the thermometer and barometer in this district of the country are pretty well known from its vicinity to Glasgow, where registers are regularly kept. But perhaps, the following statement of facts, relating to the prevailing winds, and certain other changes and peculiarities of the weather, may be not less new than interesting. The particulars have been carefully selected and arranged from a general journal of the weather, kept by the late William Mack, Esq. of Fruitfield, and submitted to the author's inspection by Mr Mack's son, John Mack, Esq. of Bellefield. The observations are daily, and the period included is from January 1799 to June 1826—a period of about twenty-seven years.

The following is an account of the prevailing winds from January

1800 to January 1820, including a period of 20 years, or 7304 days. Only the four cardinal points, with the four intermediate points of the compass, are given. When the winds were variable, they are set down for the day in the direction in which they generally blew. With these qualifications, the other results may be relied on. The letters at the top denote the points of the compass, and the figures below the number of days in which the wind blew in that direction. The periods of observation are divided into two portions, namely, from 1800 to 1810, and from 1810 to 1820. Observations are also given for each particular month.

Days.	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
Jan. First 10 years winds blew,	5	55	63	88	32	49	8	12
Second do.	9	15	102	144	23	5	5	11
Feb. First 10 years,	3	29	39	116	24	35	6	30
Second do.	0	15	42	176	25	6	7	11
Mar. First 10 years,	2	12	120	91	22	22	9	32
Second do.	2	7	8	196	12	4	5	3
April First 10 years,	6	34	72	101	23	10	10	44
Second do.	1	16	112	127	15	8	7	14
May First 10 years,	10	17	77	87	33	9	12	65
Second do.	0	8	24	146	15	2	2	13
June First 10 years,	3	23	52	100	25	9	3	35
Second do.	5	21	33	146	14	1	1	37
July First 10 years,	3	21	68	109	18	23	6	62
Second do.	1	18	44	202	20	7	2	17
Aug. First 10 years,	1	29	40	156	42	18	4	20
Second do.	2	14	44	209	22	6	3	10
Sept. First 10 years,	8	36	45	110	28	24	4	49
Second do.	8	32	50	141	27	18	9	15
Oct. First 10 years,	4	24	61	110	27	24	4	56
Second do.	4	32	67	122	23	15	12	30
Nov. First 10 years,	6	19	67	104	16	24	13	46
Second do.	11	23	62	106	42	20	13	15
Dec. First 10 years,	2	24	44	124	29	45	4	34
Second do.	6	24	34	136	24	12	12	12
Total days,	96	548	1643	3149	586	393	168	723

The following table will give the sum total for the particular months for the whole 20 years included between 1800 and 1820.

	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
January,	8	70	165	232	55	54	13	23
February,	3	44	81	292	49	41	13	41
March,	4	19	201	287	34	26	14	35
April,	7	50	184	228	38	18	17	58
May,	10	25	201	233	48	11	14	78
June,	8	44	135	246	39	10	4	122
July,	4	39	112	311	36	30	8	79
August,	3	43	84	365	64	24	7	30
September,	16	68	95	251	55	39	13	64
October,	8	56	128	232	55	39	16	56
November,	17	42	129	210	58	44	31	61
December,	8	48	128	265	59	57	16	46
Days wind in 20 years,	96	548	1643	3149	586	393	168	723

In 20 years, or 7304 days, the winds were 4458 in a westerly direction, *i. e.* including the west, north-west, and south-west; in an easterly direction 2202 days, including east, north-east, and south-east; 548 south, and 96 only north. The following summary will bring the results more immediately under the eye of the reader:

Winds westerly,	4458 days.
Do. easterly,	2202
Do. south,	548
Do. north,	96
Total days,	<u>7304</u>

In 620 days of January weather there were 227 days of frost, and in 564 days of February weather 134 days of frost. In 1184 days, there were 361 frosty days. They stood thus with regard to the winds.

Days.	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
January,	2	17	123	27	4	30	6	18
February,	3	15	54	39	4	10	0	9
Total days frost,	<u>5</u>	<u>32</u>	<u>177</u>	<u>66</u>	<u>8</u>	<u>40</u>	<u>6</u>	<u>27</u>

The average number of frosty days for each month of January for twenty years was 11.7; in February for the same period, 6.14 days. In November and December the days of frost were as follows:—

Days.	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
November,	3	2	72	18	3	6	7	12
December,	3	8	111	54	3	13	0	19
Total days frost,	<u>6</u>	<u>10</u>	<u>183</u>	<u>72</u>	<u>6</u>	<u>19</u>	<u>7</u>	<u>31</u>

The total days frost in November for the above number of years was 120 days, which, at an average, gives six days of frost for each month of November. The number of frosty days in December for a similar period was 211, which gives 10.1 days of frost for each month of December in twenty years. For the four winter months, November, December, January, and February, the results will stand thus:—

	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
November and December,	6	10	183	72	6	16	7	31
January and February,	5	32	177	66	8	40	6	27
Total days frost in 4 months,	<u>11</u>	<u>42</u>	<u>360</u>	<u>138</u>	<u>14</u>	<u>56</u>	<u>13</u>	<u>58</u>

Thus, in the period of twenty years, out of 2404 days of winter weather, there were 692 days of frost, which gives on an average of years 33.24 days of frost for the four winter months as above. It will also be observed, that 422 of these days of frost were from the east, while 210 were from the west, which leaves only

60 days for the winds and days of frost from the remaining points of the compass. The following table will bring the above results more in detail under the eye of the reader. The first column of figures contains the number of days collectively for twenty years for the accompanying months; the second column includes the number of days of frost in the months of those years; and the third the average for each month.

	Days for 20 years.	Days-frost for 20 years.	Average annual days for each month.
November,	600	120	6.
December,	620	211	10.1
January,	620	227	11.7
February,	564	134	6.14
	<u>2404</u>	<u>692</u>	<u>33.24</u>

The number of days in which it snowed in the respective months of November, December, January, and February, during the whole of the twenty years, with the directions in which the wind blew, is as follows:—

	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.
November,	—	1	14	5	—	3	—	2
December,	—	1	20	13	1	6	—	2
January,	1	2	36	28	11	8	—	3
February,	1	2	22	35	6	6	—	6
	<u>2</u>	<u>6</u>	<u>92</u>	<u>81</u>	<u>18</u>	<u>23</u>	<u>—</u>	<u>13</u>

In 2404 days of winter weather during twenty years, it snowed only 235 days. The following table, drawn up on the same principle as that showing the number of days of frost, will exhibit readily the general results:—

	Days for 20 years.	Days do. snow.	Average annual days snow for each month.
November,	600	25	1.5
December,	620	43	2.3
January,	620	89	4.14
February,	564	78	3.18
	<u>2405</u>	<u>235</u>	<u>10.40</u>

In the month of March during the twenty years, there were in all 100 days of snow, while in April there were only 48. The average number of snowy days in March is, therefore, 5, while in April it is only 2.8. Most of these, however, are only blasty days; but sometimes heavy snows fall in April, as 25th April 1812, and 8th and 9th April 1818; and in 1809, on the evening of Monday the 29th May, a great snow began to fall, which covered the earth for three days. Wind east and west. The weather was broken by a good deal of thunder on the 16th and 17th of May.

Among the popular errors of the day, we may mention the ready credence given by many persons to the legendary powers of St Swithen, a watery saint, who, if it rains upon his day, (the 15th of July,) is said to "keep his word," and squeezes the elements of their aqueous contents so effectually, that it rains for six weeks after. As reasoning will not at all times correct superstitions, which are the worst of popular follies, we may try the weight of facts, and we shall see that, at least for the first twenty years of the nineteenth century of the Christian era, St Swithen had either lost, or *voluntarily* consented to give up, his power. Instead of six weeks or forty-two days after 15th July; I have allowed forty-seven days, which carries us to the end of August. For each of the first twenty years of the century the facts are as follow:—

	July 15th.	Wind.	Wet days, in 6 weeks.	Weather about 15th July.
1800,	Fine, sunny, -	S. W.	4	Warm and dry.
1801,	Warm, showery, -	W.	8	Warm, showery.
1802,	Warm, mild, -	W.	17	Frost, rain, hail, 12, 13, 14.
1803,	Very warm, sunny, -	W.	14	Fine about 15th.
1804,	Warm, drought, -	E. & S. E.	19	Fine weather.
1805,	Very warm, sunny,	Var. wind.	18	Fine weather.
1806,	Warm, thunder showers,	S.	19	Thunder showers.
1807,	Warm, showery,	W.	17	Warm, showery.
1808,	Great drought, warm,	E.	22	Very dry.
1809,	Mild day, -	N. W.	22	14th, wettish—rest dry.
1810,	Good dry day, -	W.	18	Warm, mostly dry.
1811,	Dry and cold, -	W.	25	Wettish.
1812,	Warm and dry, -	W.	8	Warm and dry.
1813,	Very warm, -	W.	4	Heavy rain 16th.
1814,	Dark, mild, -	W.	21	Dark, dry.
1815,	Gentle showers, -	Var. wind.	10	Dry with showers.
1816,	Wet day, -	E.	15	Cold, wet.
1817,	Frost morn. warm day,	Var. wind.	19	Cold, frosty.
1818,	Warm, cloudy, -	S.	8	Warm, showers.
1819,	Very warm, sunny, -	S. E.	7	Cloudy, warm.

It would appear that it rained during the above years on five different occasions on St Swithen's day; but instead of the 15th of July being followed on each occasion with six weeks of rain, there were only 63 days of rain in thirty weeks.

It thundered only on 62 out of 7304 days. There was no thunder in January, February, September, or December. In the other months the number of days, with the direction of the winds which brought the thunder, is as follows:—

	N.	S.	E.	W.	S. W.	S. E.	N. E.	N. W.	Variable.
March,	—	—	—	1	2	1	—	—	1
April,	—	—	2	—	—	—	—	—	—
May,	2	3	1	1	1	—	—	—	3
June,	—	2	2	—	—	—	—	—	3
July,	—	2	4	1	1	6	—	—	5
August,	—	—	3	2	1	—	—	—	7

	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.	Variable.
October, .	—	—	—	1	—	—	—	—	1
November,	—	—	—	2	—	—	—	—	—
	0	4	14	10	5	7	—	1	20

Out of the 62 days thunder, 33 occurred in July and August, viz. 19 in the month of July, and 14 in the month of August. The days of thunder here set down include only those electric discharges which were heard in the district. There might be thunder in the night-time which was not heard.

The number of days in which it actually rained, in whole or in part, for each month during twenty years, (as above,) is as follows:—

Days of wind.	N.	S.	E.	W.	S.W.	S.E.	N.E.	N.W.	Variable.
January,	—	19	—	49	8	4	1	4	6
February,	—	16	7	64	15	6	—	2	5
March,	—	13	9	69	11	1	—	1	11
April,	—	20	19	49	4	—	—	3	5
May,	—	12	35	62	14	3	—	8	17
June,	—	4	19	12	64	13	4	—	7
July,	—	1	22	24	75	13	5	—	19
August,	—	—	23	23	108	15	2	1	4
September,	—	3	34	29	47	18	7	—	8
October,	—	1	23	7	70	22	5	2	23
November,	—	—	17	8	55	10	2	—	9
December,	—	—	4	2	36	8	2	—	4
Total winds with days rain for 20 years,	9	222	175	736	151	41	4	92	157

The total number of days on which rain fell over the space of twenty years was 1587, which gives on an average 79.7 days of rain per annum, or more than two months out of the twelve, of constant uninterrupted rain. The total days of rain, frost, snow, and hail, for twenty years, was as under:

	Days.
Rain,	1587
Frost,	827
Snow,	390
Hail,	30

Total for twenty years, 2764 of rain, frost, snow, and hail.

This gives about 138 days per annum for the onfalls as above, and about 227 for days on which there is no onfall, or, in other words, 2764 stormy or wet days in a period of 7304 days, and during the same period 4540 good days. We do not therefore deserve to be so much pitied for our wet weather, as some of our neighbours believe us to be.

Hydrography.—The Clyde is the principal river in the district. It enters this parish at Daldowie, forming its western boundary, and leaves it at Clyde Iron-works. The tide reaches till within a little distance of the parish, but no part of it is here navigable.

The North Calder is a considerable stream, with fine wooded banks. It rises near the farm of Braco, in the parish of Shotts, and falls into the Clyde at Daldowie. There are various other small burns, which are all lost either mediately or immediately in the Clyde. There are several lochs in the parish, but their banks are tame, and they have no picturesque beauty. Bishop Loch covers a space of about 80 acres; Woodend Loch, 50 acres; and Lochend, 40 acres. Very large pike are sometimes caught in these lochs, occasionally as heavy as $12\frac{1}{2}$ lbs.

Geology and Mineralogy.—The Monklands are famous for their coal, iron, and other valuable mineral stores. These, as in other places, evidently lie in basins, the thickest seams above the lime, and the inferior seams of coal intermixed with, or lying between, various basins of limestone. The coals wrought in the Monklands are all above the lime, which is at a great depth here, but in proportion as they approach the lime, as it comes to the surface, the lower and inferior seams of coal are only found. The following are the principal seams of coal known to exist in this district, *i. e.* of workable coal.

1st. The upper coal, coarse and seldom workable. Its average distance above the ell-coal is from 14 to 16 fathoms.

2d. The Ell or Mossdale coal, 3 to 4 feet thick, of inferior estimation in this parish, and generally too thin to work; but in some places a thick coal, and of excellent quality.

3d. The Pyotshaw, or rough-ell, from 3 to 5 feet thick, and from 7 to 10 fathoms below the ell-coal.

4th. The Main coal. It often unites with the above, and forms one seam, as at Drumpellier, in this parish. These two seams are thus sometimes in actual contact, and in other instances separated by a wide interval of 6 or 7 fathoms.

5th. Humph coal, seldom thick enough to be workable in this parish, and generally interlaid with fragments of freestone, about 10 fathoms below Main coal.

6th. Splint coal. About 4 fathoms below the Humph, and of very superior quality. It varies from 2 to 5 feet in thickness, and is mostly used for smelting iron. This seam, when of any considerable thickness, is justly esteemed when got by the proprietors here a great prize.

7th. Little coal, always below splint, the distance varying from 3 fathoms to 6 feet. It is from 3 to $3\frac{1}{2}$ feet in thickness, and is a free sulphury coal of inferior quality.

8th. The Virtue-well, or sour-milk coal, from 2 to 4 feet thick, occurs from 26 to 28 fathoms below the splint.

9th. The Kiltongue coal lies 22 fathoms below the Virtue-well, and like it is from 2 to 4 feet in thickness.

10th. The Drumgray coal lies 6 fathoms below the Kiltongue, and perhaps from 60 to 100 fathoms above the first or upper band of limestone. It is seldom more than 18 or 20 inches thick. There are besides these ten seams about twenty-three smaller seams between them, none of which are of a workable thickness. The total thickness of the coal measures above the lime may be about 775 feet.

This large and important coal-field is much intersected with dikes, and a knowledge of these is a knowledge of the strata, and of the manner in which they are affected by them. The first dike that throws in the Monkland seams on the south, runs through the lands of Rosehall, Tannochside, Britishholm, and Calder Park, where it is seen in the burn, and then through the lands of Mount Vernon, where it throws down the coal, and throws in the large field of Rosehall, Birthwood, Britishholm, and Mount Vernon. 2. To the north of the above, a large dike comes from Newarthill, and throws in the coal in Faskin, Palace Craig, Kairnhill, Garnturk, Lower Coats, Drumpellier, Keelhill, and terminates at Easter House. This terminates the Monkland field to the west. 3. Still farther to the north, a third dike enters the parish on the east, at Kippsbyre, passes the lands of Raw by Sommerlee Iron-Works, by the south side of Gartsherrie estate, and then running towards Bishop Loch, it throws in Kippsbyre, Gargunnock, and Gartsherrie fields. The splint coal is found as far north as Gartcloss, after which it and its accompanying strata do not come in again in that direction. 4. Another downthrow dike to the north passes through the estate of Gartsherrie, and throws in the Gartgill and Gartcloss fields. This forms the northern boundary of the Monkland seams.

The following will afford a pretty correct idea of the statistics of the coal workings in this district. The coal pits now in actual operation, or now sinking, with their depths, and the seams of coal found in them, are nearly as follows,—leaving it, however, to be understood, that since the following list was taken, various new pits have been begun, so that every week almost brings with it some new improvements and new workings.

Gartsherrie.—It is of no consequence where we begin, provided

we give an accurate idea of all the principal workings. The succession of strata at Gartsherrie is as follows:—

	Coal.		Other rocks.		
	Ft.	In.	Fath.	Ft.	In.
1. Coal (first coal),	2	0	0	0	0
2. Sandstone and shale,	0	0	8	0	0
3. Coal (2d),	3	3	0	0	0
4. Sandstone and shale,	0	0	3	3	0
5. Coal (3d),	4	0	0	0	0
6. Sandstone and shale,	0	0	7	3	0
7. Coal (4th),	1	4	0	0	0
8. Sandstone and shale,	0	0	7	3	0
9. Coal (5th),	3	4	0	0	0

1. The Gartcloss mine, or inclined plane, is 30 fathoms deep, and contains the Pyotshaw, Main, and Splint coals, and they are now sinking to the Virtuewell and Kiltongue. The Ell-coal, which is 8 fathoms above the Pyotshaw, seems to be off here, but they begin to work it at Mount Vernon, and away west to Glasgow.

2. Gartgill, (Mr Colt), 40 fathoms deep, has the three main seams. The Main and Pyotshaw are within 10 inches of each other, and form a working of 12 feet.

3. Gartsherrie, No. 1, 40 fathoms, all the seams; No. 2, 30 fathoms, all the seams except the Ell-coal, which is here crompt off.

4. Gunnie, (Messrs Baird,) No. 1, 27 fathoms, all the coals except the Ell. No. 2, now sinking 50 fathoms, all the coals.

5. Greenhill, (William Baillie). All the coals except the ell, about 18 fathoms to the splint.

6. Drumpellier (Mr Buchanan,) Nos. 3, 4, 5 and 6, varying from 36 to 70 fathoms. In one of these pits the Pyotshaw and main coals are wrought together, at an aggregate thickness of 7½ feet. The splint here is very thin, only from 26 to 40 inches.

7. Calder Iron-works,—2 coal-pits, one 100 fathoms, the deepest in the parish; other pit 40 fathoms, all the coals.

8. Palace Craig, 2 pits, one 40 fathoms, another 70 fathoms, all the seams. The upper ironstone, 18 inches in thickness, is about 24 fathoms above the ell coal. The succession of strata in the intervening space are as follows:

	Coals.		Ironstone.		Other rocks.		
	Ft.	In.	Ft.	In.	Fath.	Ft.	In.
1. Black ironstone,	0	0	1	0	0	0	0
2. Shale with thin bands of ironstone,	0	0	0	0	0	4	6
3. Sandstone and shale,	0	0	0	0	4	1	0
4. Coal interbedded with stone,	2	10	0	0	0	7	0
5. Sandstone.	0	0	0	0	0	1	6
6. Shale.	0	0	0	0	0	0	0

	Coal.		Ironstone.		Other rocks.		
	Ft.	In.	Ft.	In.	Fath.	Ft.	In.
7. Black shale and clay,	0	0	0	0	0	3	10
8. Coal,	0	8	0	0	0	0	0
9. Slaty clay,	0	0	0	0	0	0	8
10. Fire-clay,	0	0	0	0	0	1	4
11. White fire-clay,	0	0	0	0	0	2	0
12. Sandy fakes, &c.	0	0	0	0	0	4	0
13. Sandstone,	0	0	0	0	0	1	0
14. Shale and ironstone,	0	0	0	10	0	0	0
15. Black tull,	0	0	0	0	0	0	6
16. Ironstone,	0	0	1	6	0	0	7
17. Fire-clay,	0	0	0	0	0	1	4
18. Black tull,	0	0	0	0	0	1	4
19. Shale and fakes,	0	0	0	0	2	0	6
20. Shale and tull,	0	0	0	0	0	1	10
21. Sandstone and shale,	0	0	0	0	0	5	7
22. Coal,	0	2	0	0	0	0	0
23. Shale and clay,	0	0	0	0	0	7	2
24. Sandstone,	0	0	0	0	1	6	0
25. Shale and clay,	0	0	0	0	1	4	0
26. Ell-coal,	2	10	0	0	0	0	0

9. Faskin. It was at this place that the coal was first opened up. The Lady Anne seam of coal derives its name from Lady Anne Stirling, wife of Mr A. Stirling. In like manner we may here mention, that Pyotshaw is the name of a place in Cairnhill, Kiltongue is a place near Braidenhill, and Virtuewell is on the estate of Mr Nisbet of Cairnhill, in New Monkland. Engine pit, 75 fathoms, began 1790, got coal 1791. The splint or Lady Anne coal was first found here.

10. Whiteflat, 2 pits, 40 fathoms. The journal of the pit No. 2 is as follows.

	Coal.		Ironstone.		Other rocks.		
	Ft.	In.	Ft.	In.	Fath.	Ft.	In.
1. Alluvium,	0	0	0	0	4	0	0
2. Sandstone fakes, &c.	0	0	0	0	5	2	0
3. Ell-coal,	2	1	0	0	0	0	0
4. Shale,	0	0	0	0	0	4	10
5. Coal,	1	2	0	0	0	0	0
6. Fire-clay,	0	0	0	0	0	2	0
7. Fakes,	0	0	0	0	3	1	9
8. Sandstone,	0	0	0	0	1	2	0
9. Shale,	0	0	0	0	0	5	0
10. Pyotshaw coal,	8	2	0	0	0	0	0
11. To the splint coal,	0	0	0	0	26	0	0
12. Splint coal,	8	6	0	0	0	0	0
13. To black band ironstone,	0	0	0	0	13	0	0
14. Black band ironstone,	0	0	1	6	0	0	0

11. Keelhill. The oldest working pit in the parish, and has put out more coals, perhaps, than any other in the west of Scotland, having been in active operation for the last thirty years. The pit is upwards of 60 fathoms. The Pyotshaw and main seams are close together, and form an aggregate working of from 8 to 10 feet.

12. Netherhouse. Pits from 30 to 40 fathoms, with the three main seams, Pyotshaw, main, and splint.

13. Easter House. This is the north-west boundary of the Monkland seams. The pits are about 40 fathoms. Three seams are found, but the splint only is wrought. The metals here are much deranged, and the coal much injured with the whin.

14. Mount Vernon. Pit (in Barony,) 70 fathoms. Two seams, Pyotshaw and main. The splint is from 12 to 15 fathoms below, but is so thin that it is not worth working. The strata here are as follow :

	Coal.		Other rocks.		
	Ft.	In.	Fath.	Ft.	In.
1. Sandstone, &c.	0	0	30	0	0
2. Coal (1st.)	1	2	0	0	0
3. Sandstone, &c.	0	0	27	0	0
4. Coal (2d.)	4	0	0	0	0
5. Sandstone and shale,	0	0	6	0	0
6. Coal (3d.)	4	0	0	0	0

15. Rosehall. Two pits in one shanking. Deepest 26 fathoms to main, and 16 fathoms to splint; in all, upwards of 40 fathoms. The succession of strata here is as follows :

	Coal.		Other rocks.		
	Ft.	In.	Fath.	Ft.	In.
1. Coal (1st.)	1	8	0	0	0
2. Sandstone and shale,	0	0	7	0	0
3. Coal (2d.)	3	6	0	0	0
4. Sandstone and shale,	0	0	3	0	0
5. Coal (3d.)	3	2	0	0	0
6. Sandstone and shale,	0	0	7	0	0
7. Coal (4th.)	1	0	0	0	0
8. Sandstone and shale,	0	0	5	0	0
9. Coal (5th.)	4	4	0	0	0

The enterprising tenants of the Rosehall colliery are Addie and Miller. I have been favoured by Mr Addie with the number of men employed at this work. The additional number employed at other works is very great. At Rosehall, there are, in constant occupation, 117 colliers, 2 bottomers, 3 pit-roads men, 2 pit-head men, 20 labourers, 2 engine-men, 2 smiths, 1 wright, 4 carters, 2 sawyers, 1 manager, 1 clerk,—in all 157.

Ironstone.—The Monkland ironstones are, economically speaking, of immense value, and are the principal source of the wealth and bustle in which this prosperous district is at present so agreeably involved, for if it were not for the ironstone, not one-half of the coals could have been wrought out. The following are the principal bands of the Monkland ironstone.

1. The Upper Black Band. It lies about 24 fathoms above the ell-coal, as indicated in the succession of strata, page 644. It

is of very local occurrence, like all the ironstones, and has only been found worth working at Palace-Craig. It is of inferior quality, and only about 18 inches thick.

2. The Black-Band, also called Mushet's Black-Band, from the name of the person who first wrought it to any extent. This is the great staple commodity for the supply of the iron-market, and when found to any extent, is a certain source of wealth to the proprietor. Its average depth below the splint is about 15 or 16 fathoms, and it varies in thickness from 14 to 18 inches, and occupies an area of from 8 to 10 square miles.

3. Airdrie Hill Black Band. In this property, which is in New Monkland, there is a band of ironstone varying from 2 to 4 feet in thickness, lying about 3 fathoms below the black-band, or Mushet's Band. It is found only in part of the lands of Airdrie Hill, and is by far the most local of all the ironstones.

The black band of ironstone is thrown in by a dike formerly mentioned, which runs in a north-west direction through the lands of Woodhall Cathedral Park, the lands of Carnbroe and Shawhead, and on to Kirkwood and Keelhill. There is no ironstone to the south and west, except a very little to north of Carnbroe. A branch dike comes through the lands of Dundyvan, to the south-west side of which none of the black-band is found. This valuable mineral is chiefly found in the lands of Monkland House, Faskin, Carnbroe, Garturk, and Lower Coats, and terminates in the lands of Dundyvan. The boundaries of the district in which these volcanic treasures lie, are nearly as follows: It is bounded on the west by a straight line drawn from Sommerlee House to Kip's Bridge; from that to Glenmavis on the north; from Glenmavis still northward, and in a south-east direction to the lands of Arden in New Monkland; from Arden to Clerkstone in a southern direction; and then from Clerkstone to Monkland House, &c. The principal ironstone pits now in operation in Old Monkland are as follow:—

1. Raw. Splint-coal and black-band; pit from 27 to 30 fathoms.
2. Locks. Pit 20 fathoms, same band.
3. Kairahill, two ironstone pits, one 30, another 23 fathoms. Coal, 40 fathoms.
4. Palace-Craig, two pits, one 40 fathoms; another 70 fathoms. The upper black-band occurs here.

5. Garturk or Wilderness two pits, 24 fathoms deep, contain the black-band. The upper coal is here wrought out.

6. Faskin, four ironstone pits, from 10 to 14 fathoms.

7. Monkland, one ironstone pit.

8. Calder Ironworks. Two ironstone pits are now wrought for these works on Garturk estate, 36 fathoms deep. There is a coal-pit here 100 fathoms; the deepest in the parish.

9. Whiteflat or Whifflet, three ironstone pits, and two coal-pits, containing the splint and black-band. Pits 40 fathoms deep.

10. Drumpellier. Ironstone pit here 40 fathoms. Nos. 1 and 2 are wrought out. The ironstone fines off at pit No. 2, averaging only two or three inches in thickness. "It is seen," (as the workmen express it,) "and that is all."

The coal and ironstone pits in the parish of New Monkland are still more numerous; and it is from them that the iron-works in Old Monkland receive their chief supplies. The great iron establishments at Gartsherrie, Sommerlee, Calder, Dundyvan, and Chapelhall, receive a great quantity of ironstone from Rochsilloch, the property of Sir William Alexander. On this property at the time this account was taken up, there were eleven pits, two mines, and two open casts, besides three pits shanking. The black-band here yields from 30 to 40 per cent. of iron. One acre at 8s. 6d. per calcined ton of lordship will yield L. 1000 to the landlord. The output on Rochsilloch alone is 4500 tons per month, and the annual income to the proprietor is about L. 12,600 per annum, on a property, which, if let for tillage, would yield only a few hundreds per annum.

Quarries.—The freestone quarries in the parish of Old Monkland are chiefly as follows:—

1. Langlone Quarry. This is a red freestone, which lies above all the coals, and runs in a compact body through Drumpellier and Britishhells by Mainhill. It is thrown off by a hitch at Kirkwood, but soon comes on again. It then goes on by Mount Vernon and on to Westmuir. It is thrown in by two dikes, which are downthrows. This rock is about 50 feet thick. The same rock is wrought at Mainhill and Haggmill.

2. Souterhouse and Garturk. A fine white freestone, supposed to be a piece of rock beneath the red sandstone, cropping out to the north. It is from 30 to 40 feet thick. The whole of this freestone is consumed at Calder works.

3. Sommerlee Quarry. A white freestone of a somewhat infe-

rior quality, supposed to lie below the ironstone. It is used chiefly by the Sommerlee Company.

4. Coats Quarry. A white pavement, which is the roof of the main coal.

5. Coats and Pottry Quarry. The white roof of the main coal. It lies between the Pyotshaw and main coals, and is about 20 feet thick.

6. Coatsdike Quarry. A white freestone between the ironstone and Virtuewell coal. Belongs to the Messrs Baird. It is from 40 to 70 feet thick. There are a few small quarries besides.

The whinstone quarries are:—1. Rawmen, a hard blue whin or greenstone. It occurs below the Kiltongue coal. The metals dip south from a trouble.

2. Easterhill. This greenstone lies above the splint-coal. It is what the workmen term poky, and does not break clear. No lime is found in the parish of Old Monkland.

The botany and zoology of the parish exhibit no peculiarity of character.

II.—CIVIL HISTORY.

The Monklands were anciently a part of the Abbacy and Lordship of Newbottle, to which they were mortified by Malcolm IV. The original charter may be seen in Anderson's Diplom. Scot. These lands formed about a third part of the territorial possessions of the monks of Newbottle, who had also the lands of Carmyle on the Clyde. From their chartularies we learn that they maintained a large grange, or farming establishment, at DrumPELLIER, then named DUNPELDER. For the purpose of keeping up a communication between their eastern and western possessions, they obtained grants of free passage; a right confirmed to them by Alexander II., who allowed them during their passages common pasture for their cattle, for one night, in every part except the growing corn or meadows. It appears from Acta Parl. iii. 513, that the lands of Monkland were granted free to Mark Kerr, commendator of the Monastery of Newbottle, about 1567. This individual was created Baron Newbottle 1591, and Earl of Lothian 1606. The Boyds of Kilmarnock afterwards obtained the northern parts of the Monklands, called the Barony of Medroz, contiguous to an ancient seat of the family—the tower of BARKENTH, which still bears their arms. About 1602, the greater part of the Monklands fell into the hands of Sir Thomas Hamilton of Blythburgh, afterwards Lord Binning and Byres, Earl of Haddington, and finally

first Earl of Haddington. He is described as being a good lawyer and keen-sighted judge, and concluded a profitable political life by the accumulation of a vast sum of money, which he wisely vested in landed property. He discovered a silver mine in the lands of Ballencraeff, in Linlithgowshire, which he took care to secure by a charter, including "minera, mineralia, auri, et argenti, inter bondas terrarum de Ballencraeff." Had he been so fortunate as to secure in the same manner the minerals in the Monklands, they would have been more valuable to his descendants than mines of silver or gold. The Monklands passed from the Haddington family into the hands of the Clellands of Monkland about 1633, and in 1639, they were sold to James, Marquis of Hamilton. The charter is dated 19th November 1639, or the year after the noble Marquis had sat as Commissioner to the celebrated General Assembly which met in Glasgow 1638. These territories passed from the Hamilton family into the hands of the College of Glasgow, and thus have become once more the appropriate possession of a literary community. This purchase was made from Anne, Duchess of Hamilton, in the reign of Charles II., and included the patronage and tithes of the subdeanery of Glasgow, and of the churches of Calder and Monkland; all of which, except the patronages of the churches, they retain to this day.

The Monklands were divided into two parishes, according to Hamilton of Wishaw, in or about 1660, but more probably about 1640. Long before this period, the land had been almost all feued out to particular heritors, some of whom are very old possessors of their respective inheritances.

Beyond all the above facts, which are authenticated by existing documents, there is a tradition, that a certain pilgrim, in order to do penance for some sin, was obliged to carry a particular stone in this direction from Glasgow; and when he could bear it no farther to build a church at his own expense. The weary pilgrim laid down his burden at the place where the Old Monkland church stands, and the stone is still to be seen.

Chief Land-owners.—General Pye Douglas of Rosehall; Robert Buchanan of Drumpellier; John H. Colt of Gartsherrie; John Sligo of Carryle; Hugh Bogle of Calderbank; James M'Call of Daldowie; William Dixon of Faskin; Theodore Wolrond, Calderpark; George M. Nisbet of Cairnhill. The estate of Brediesholm is also a valuable property.

Parochial Registers.—These consist at present of seventeen volumes. The oldest legible date is January 24th 1692.

Antiquities.—The site of the Clyde Iron-works seems to have been a burying-ground of ancient date. When digging the foundation of the buildings, great quantities of human bones were found deposited betwixt flag-stones. These stones were so placed, as to form a cavity of considerable extent, which was covered with a stone of the same sort. Various earthen urns were found, containing ashes mixed with human bones, on some of which were evident marks of fire. In 1834, when Mr Bowman, a distinguished breeder of cattle, was clearing out a plantation on a gravelly hill near Blair-tummock, two urns, perfectly smooth and of a reddish colour, were discovered. On the Camp farm, near Bailiestone, in casting drains, pieces of horse harness, apparently of ancient date, are frequently turned up.

III.—POPULATION.

The population of this parish in 1755 was only 1813, in 1831 it was 9580. In 1791, the population was 4000, which, since 1755, makes an increase of 2187 in thirty-six years, which is at the rate of upwards of 60 per annum. In 1801, the population was 4006, which was only 6 of an increase in ten years. In 1811, the population was 5469, which is an increase of 1463 in ten years, or at the rate of upwards of 146 per annum. In 1821, the population was 6983, which is an increase of 1414 in ten years, or at the rate of upwards of 141 per annum. The population in 1831 was 9580, which is an increase of 2597 in ten years, which was at the rate of 259 per annum. The annual increase at present is at least double that amount. The increase between 1755 and 1791, as stated in the last report, was “entirely owing to the establishment of manufactures.” These seem to have been nearly in a stationary state from that period till 1811. From that date the coal and iron trade have been continually advancing, and at the present moment the parish of Old Monkland is the principal seat of the iron manufacture in Scotland. In 1831 there were

Inhabited houses,	1499	Agriculture.—Occupiers 1st class,	40
Families,	1805	2d class,	87
Houses building,	8	Labourers in agriculture,	82
Houses uninhabited,	116	Manufacturers,	2
Families employed in agriculture,	93	Retail trade and handicraft,	1441
in trade, manufactures, &c.	1506	Capitalists, clergy, professional men,	96
All other families,	140	&c.	504
Total males,	4966	Labourers not agricultural,	40
Total females,	4614	All other males of 20 years,	40
		Male servants above 20 years of	30
		age,	16
		Under 20 years of age,	171
		All female servants,	171

In the principal villages in the parish the population was as follows, viz.

Langlows.

Males,	269	All other families,	29
Females,	273	Males above 20 years of age,	129
	—	Male servants,	8
Families,	543	Female servants,	6
employed in agriculture,	1	Inhabited houses,	85
in trade, manufactures, &c.	91		

Dundyvan.

Males,	311	All other families,	13
Females,	267	Males above 20 years of age,	135
	—	Male servants,	3
Families,	578	Female servants,	4
employed in agriculture,	2	Inhabited houses,	89
in trade, manufactures, &c.	109		

Coatbridge.

Males,	397	All other families,	1
Females,	344	Males above 20 years of age,	185
	—	Male servants,	4
Families,	741	Female servants,	4
employed in agriculture,	126	Inhabited houses,	107
in trade, manufactures, &c.	125		

Bailiestone and Crosshill.

Males,	433	All other families,	39
Females,	410	Males above 20 years of age,	213
	—	Male servants,	2
Families,	848	Female servants,	11
employed in agriculture,	179	Inhabited houses,	129
in trade, manufactures, &c.	14		
	126		

There is also a considerable village population in the following villages:—Tollcross, Carmyle, Foxley and Broomhouse, Barrachine, Morriston and East Morriston, Bargeddie, Dykehead, and Coatdyke.

In the lists taken up for the Church Commission, the results were as follows:—

1. That part of the parish bounded on the south by the Clyde and Calder, including all to the south of the parish road from Breadiesholm avenue head to the Edinburgh turnpike road, near Bailiestone Toll, and along the south side of the turnpike road to the westmost end of the parish.

Total males and females,	2054
Under 7 years of age,	445
12 years of age,	676

2. To the north of the above district, including all to the north of the parish road, beginning at the end of Longmuir road, passing Breadiesholm avenue, and running on to the turnpike road at Bailiestone Toll, and westward to Barrachine. This district is

bounded on the west by the Longmuir road, onward to the canal at Cuilhill, and from thence to Whitehill, near the parish of Cadder.

Total males and females,	1182
Under 7 years of age,	292
12 years of age,	488

3. That part of the parish included within a line beginning at the south-east corner of the narrow parish road opposite Breadiesholm gateway, crossing the turnpike near Rhins, onwards to Seving Bridge, round by Netherhouse, Commonhead, Cuilbill, Longmuir, Dykehead, and terminating with Mainhill. Also all within a line beginning at Bailiestone Toll, including all on the west of the road, which leads from Bailiestone Toll towards the canal, and all on the south side of the canal to the western extremity of the parish, near Glenduffhill, and all on the north of the Edinburgh road from Barrachine to Bailiestone Toll.

Total males and females,	1009
Under 7 years of age,	278
12 years of age,	412

4. This district is bounded on the south, by Dundyvan or Luggie Burn (except one house south side of it); on the north, by the Glasgow and Edinburgh road from the east, and of Coats Bridge to the west end of Langlone; on the east, by the lands of Coats and Dundyvan Canal cut; and on the west, by the mill or church road. In this district fourteen new houses were inhabited between the time that this census was begun and concluded.

Total males and females,	1943
Under 7 years of age,	435
12 years of age,	638

5. This district includes all to the east of Blair Bridge road, on to where the Kirkintilloch Railway joins the parish of Cadder; and all from Blair Bridge road to the north of Edinburgh road, on to Coats west gate, and all on the west of a line drawn from Coats House, on to where the railway joins the New Monkland parish.

Total males and females,	1928
Under 7 years of age,	527
12 years of age,	758

6. This district includes all to the east of a line from Coats House to Luggie Water near Dundyvan iron-works, to the south of Luggie Water or to Langlone Mill Bridge, to the east of the road from Luggie Mill Bridge, onward to Old Monkland Kirk, and in a line due south to the Calder, and all to north of the Calder, from that point to the eastern extremity of the parish.

Total males and females,	1751
Under 7 years of age,	447
12 years of age,	509

These districts include only 8662 of the inhabitants. The details of the remaining districts have unfortunately not been put into the writer's possession; but the whole population, as taken up in 1837, was 11,577, which, compared with the population of 1831, which was 9580, is an increase, in five years, of 1997, or at the rate of 399 per annum, or rather upwards. At the same rate the national census in 1841 will probably return at least 13,580, or probably more. It is, in fact, almost impossible at present to calculate, upon any rational data, the ratio of increase. Since last general census in 1831, and since 1837, the population has increased vastly. When the census was taken for the Church Commission in 1837, the houses, with their inhabitants, which had been erected and inhabited since 1831, were nearly as follows. But it must be premised, that the increase of houses, or rather of entire villages, since 1837, has been very great.

	Inhabitants.
1. Houses on the south of Garnkirk Railway, a little west of Gartscherrie Inn,	80
2. Witch-tree cottage,	13
3. Cross-roads,	24
4. Two new rows near Gartscherrie Works,	200
5. New houses near Crosshill,	181
6. New houses Coatdyke.	
7. Locks road new houses,	47
8. Houses near old quarry opposite Laigh Coats,	20
9. Cairnhill bridge new houses,	45
10. Calder bridge new row.	
11. Summerlee new houses,	150
	660

These were erected previous to 1837; and since that period erections have been taking place for the accommodation of the inhabitants on a much more extensive scale. The increase of the population in this parish is almost entirely owing to the coal and iron trade. There is no certain method of ascertaining the marriages, baptisms, and deaths, for the last seven years, as the parish within that period has been divided, *quoad spiritualia*, into three parishes, viz. the Old Parish, and the parishes of Crosshill and Gartscherrie. The proclamations for the following years and in each month of the respective years in the parish church were as follow:

	1832.	1833.	1834.	1835.	1836.	1837.	1838.
January,	10	5	7	12	12	13	9
February,	4	10	6	12	5	7	12
March,	3	6	10	15	9	18	7
April,	10	10	9	9	6	13	7
May,	7	8	6	17	21	20	11
June,	4	12	13	11	14	7	11
July,	7	4	7	6	10	7	6

	1832.	1833.	1834.	1835.	1836.	1837.	1838.
August,	10	7	7	8	9	5	9
September,	4	8	5	5	12	8	5
October,	9	2	14	7	16	10	16
November,	9	6	17	11	15	17	18
December,	9	8	7	12	14	7	12
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	86	82	107	125	149	122	124

The total number of proclamations in seven years was 755, which gives an average of 108 proclamations per annum. The baptisms in 1831 were 186 in the parish church. The number elsewhere cannot be ascertained. The regular marriages were 109, which is very near the average of the proclamations. There was in that year only one irregular marriage. In the same year, the burials were 52 males and 50 females. The deaths in this district generally are 1 in 169 nearly. The registers, from the change of schoolmasters and other causes, have, for the last seven years, been kept very irregularly. The village population in 1831 was 2088, and the rural, 7470. About 37 heritors pay for schoolmaster's salary, L. 28, 5s. 3d.; 53 heritors pay for poor's rates, L. 212, 7s. 3d. The number of proprietors of land of the value of L.50 and upwards is about 40. The ancient valuation of the parish is L. 6480, 18s. 9d. Scots, and is thus distributed :

Rosehall,	L.733	19	4	Garturk,	L.183	0	0
Daldowie,	321	6	8	Kairnhill,	60	0	0
Gartsherrie,	523	6	8	Neuk and Sandycroft,	61	0	0
Milntown,	182	3	0	Pyotshaw and Scar-hole,	17	0	0
Kenmuir,	174	0	0	Baird's Mailing,	14	0	0
Langlone and Drumpellier,	172	0	0	Creaswoods, N. and S.	47	0	0
Blairtumock,	88	15	8	Faskine,	161	8	11
Bruntdroom,	87	19	3	Bogiesbill,	176	0	0
Sutterhouse,	100	0	0	Hutcheson and Carnyle,	122	0	0
Lanlgone,	23	3	6	Fullerton,	40	0	0
Dean Bank,	89	1	7	Glenduff-hill,	49	0	0
Bargainsholm,	26	0	0	Lochwoods,	144	0	0
Brounshill,	14	0	0	Funds mortified to the Col-			
Paddochie,	66	13	4	lege,	133	6	8
Kailyard,	67	6	8	Breadiesholm,	183	3	4
Dumdyvan,	140	0	0	Mainhill,	106	3	8
Paton's Wells,	28	0	0				

Natural children 9 per annum ; bachelors, 46 ; old maids, 120.

There are 15 or 16 families in the parish of what may be termed independent fortune, although many or most of them are still connected with trade. The population are mostly connected with the iron and coal trade. A great many Irish are everywhere to be found.

Language.—The true Lowlanders in this district speak with great plainness the patois of the country, but they have a few expressions scarcely intelligible to their neighbours. For example, the word infidel is considered as synonymous with idiot ; and when

a man says, "Do you think I am an infidel?" a frequent interrogatory among the handicrafts, he merely means he is no fool, but knows what he is about. The no less common expression, "will you never *deval*?" merely means, will you never give over. In such a concourse of strangers as now prevails here, there are many doubtful or unintelligible characters. These are uniformly termed "*nomalistic* characters." Compellent is also a common word for forcing or compelling one against his will, and *combustibles* is most erroneously applied to the filthy accumulations of animal, vegetable, and earthy matters in ditches and covered drains, which carry away the refuse from their dwellings.

There is now little or no poaching, and no smuggling.

IV.—INDUSTRY.

Agriculture.—The parish of Old Monkland greatly excels the New Monkland in fertility of soil, and in salubrity of climate. Indeed, the soil here is in all respects very superior to the soil above the coal-fields in other parts of the country. The land very seldom attains any very considerable elevation, and in most instances it is level, and generally slopes with a gentle declivity to the Clyde. The principal uncultivated places are Gartgill moss, Lochwood, Drumpellier, and Coatsmuir or Muiryhall, in all about 1500 acres. Towards the north, however, where the coal crops out, the peat mosses come in in great abundance. The arable soil in the parish is of three kinds. That along the banks of the Clyde and Calder is a strong clay, but, from high cultivation in many places, now resembles a good loam. This soil produces luxuriant crops of grain, particularly of wheat, and yields sometimes from 12 to 16 bolls per acre. The middle of the parish is a light sand, affording excellent crops of oats and potatoes. Towards the north, as already stated, are extensive tracts of moss. The farmers in this district have peculiar facilities for procuring lime and manure by the canal and railways. In former times, the ordinary rotation of crops was to turn up before oats or peas; then summer-fallow and wheat; then peas and beans; and then oats and grass seeds. About the west end of the parish there is now a rotation of four years, viz. potatoes, wheat, hay, and oats. Some pasture a year or two between the hay and oats, or have turnips instead of potatoes. Turnips yield from 25 to 30 tons per acre; 30 tons is the average, but 40 are often obtained; potatoes 45 bolls per acre, or even 7 pecks per fall, which is at the rate of 70 bolls per acre. In other parts of the parish, as about Gartsherrie, now has ;

the rotation is, 1. oats, sometimes two crops; 2. potatoes; 3. wheat; 4. hay; 5. pasture; 6. pasture. Wheat here averages 8 bolls per acre, but is often as high as 12; oats 6 bolls; potatoes 40 to 50 on best lands; hay 150 stones per acre. The average rental of the land throughout the parish is L. 2, 5s., much of it is below this, and many acres let much higher. There are about 200 acres of undivided common. The parish is very well wooded, and may have 1200 acres in plantation.

The cattle here are of a very superior sort; the cows mostly of the Ayrshire breed, and the horses of the Clydesdale breed. Perhaps no parish in Scotland has taken more first prizes at the great cattle-shows in various parts of the country. The breeders here have repeatedly taken first premiums from the Highland Societies' shows, and others, for mares, stallions, bulls, cows, &c. Mr Bowman and Mr Drew have been deservedly often rewarded for their great skill and perseverance in rearing the best sorts of stock. Mr Baird of High-cross, near Old Monkland Kirk, is one of the ablest and most enterprising of those meritorious individuals to whom the agricultural interests of this district are so highly indebted. Mr Cairn and Mr Finlay have also stocks of a very superior order. Considerable improvements are everywhere carrying on in the reclaiming of waste lands. Mr Johnstone of Gartcloss has been a very successful improver of moss, and has made many successful experiments on the Gartcloss moss. His method is, 1. to drain; 2. to dig; 3. to put on earth on the surface; 4. manure. The drains are what are here termed *goats*, *i. e.* deep ditches about six yards apart. The digging costs L. 4 per acre, putting on the clay, L. 6, draining, L. 4. Perhaps, generally speaking, it will take from L. 20 to L. 24 to put an acre in crop. About 20 tons of Glasgow dung at 5s. or 6s. per ton are required, but 15 bolls of oats have been obtained from an acre of moss thus reclaimed. The usual duration of leases is nineteen years. The farm-houses are generally in good condition.

Flax was formerly much sown in the parish, but at present only very partially. The lintseed was generally sown on ground well manured with dung or lime, after one crop had been taken from it. The time of sowing is April, and it is ready for pulling about the 1st of August. Nine women at 10d. per day will pull an acre, or about 16 stones. Thirty or forty years ago, this was a profitable way of procuring a return to the farmer, one individual having been known to get L. 240 per annum for 30 acres. One of the prin-

incipal causes of the high degree of cultivation into which this parish has been brought is its vicinity to the city of Glasgow. When a merchant or trader has made a little money, he purchases a piece of land, builds an elegant villa, and improves his property at the dearest rate. The parish is also greatly indebted to a patriotic and extremely well conducted and successful agricultural association, the "Old Monkland, Bothwell, Barony, and Cadder Farming Society." This institution was set on foot about ten years ago, under the name of the "New Farming Society;" and the first premium was awarded to Mr Robert Law, 26th February 1830. At the last ploughing match, 15th February 1839, on Mr Baird's farm at High-cross, 28 ploughs started, and various prizes were awarded to the successful competitors. Among one of the premiums was 1500 drain tiles. The whole parish is divided into 87 ploughgates. The rate of labour in Old Monkland, as proved to the trustees of a late meeting of heritors, was as follows: eight hours labour for an able man, and able horse, and proper cart, 6s. per day. Wages for a labourer ten hours, 2s. per day. The total gross produce from land, including the portion for landlord, tenant, and for working the ground, is about L. 36,000, the houses about L. 4000.

The parish is generally well fenced with thorn hedges. Trees of all sorts thrive well, but the Scotch fir does not stand the smoke, which seems to fill up its pores. No species of fir or pine endures the smoke from the collieries, and even furnaces for a length of time. Hard-wood, however, suffers but little from it.

Manufactures.—The great, the all-engrossing manufacture of this parish is the iron trade. Out of the eighty-eight furnaces for the manufacture of iron, which at present exist in Scotland, sixty-five are in this parish, or in its immediate neighbourhood. The furnaces now in operation in the parish are,—

Names of Works.	Owners.	In blast.	Out of blast.	Building.	Contemplated.
1. Gartsherrie,	W. Baird and Co.	7	0	1	6
2. Sandywan,	Dunlop and Co.	5	0	1	4
3. Monkland,	Monkland Iron Co.	6	0	0	0
4. Clyde,	James Dunlop,	4	1	0	4
5. Bothwell,	Wilson and Co.	5	0	0	2
6. Cambus,	Allison and Co.	2	0	2	2
7. Cadder,	W. Dixon and Co.	6	0	0	0

This last is on an elbow of Bothwell parish, and Monkland iron-works are upon its borders, but both are intimately connected with the parish of Old Monkland. There were, at the time when this estimate was taken, thirty-four furnaces in blast, but by the time this account meets the public there will be many more. Supposing

each of the thirty-four furnaces to yield 100 tons per week, the annual produce will be 176,800 tons per annum. For producing a ton of iron, 3 tons of coals, and from 5 to 6 cwt. of lime are required. Allowing 3 tons of coals as above for the manufacture of one ton of iron, the thirty-four furnaces now in blast will alone consume 530,400 tons of coal per annum, and at least 884,000 cwt. of lime. These iron-works alone consume an equal amount of coals in a year, as the city of Glasgow, including the different manufactories and public works, and more lime than is consumed by all the farmers in the county of Lanark. In 1806, the produce of pig-iron throughout the whole county of Lanark was only from 9000 to 10,000 tons per annum, and the coals consumed about 180,000 tons. In the beginning of 1794, the produce of pig iron was only 3600 tons, by which 36,000 tons of coals were consumed.

The state of the iron trade at these several periods will stand thus,—in

Years.	Tons of pig iron produced.	Tons of coals consumed.
1794,	- 3,600	- 36,000
1806,	- 9,000	- 180,000
1839,	- 176,800	- 530,400

Several of the iron companies in this parish are directing their attention to the manufacture of bar iron. The Monkland Company are procuring mills and forges capable of producing 220 or 230 tons of malleable iron per week; and the Dundivan Company are also making suitable preparations for the same purpose, on a still more extensive scale. The steam-engines employed at several of the above works are very powerful. At Gartsherrie, there are two engines, the one has a steam-cylinder, 45 inches diameter, and an air-cylinder, 80 inches. The second engine has a steam-cylinder, 48 inches, and air-cylinder, 90 inches diameter. At Dundivan, the steam-cylinder of the engine is 45 inches, and the air-cylinder, 90 inches in diameter. At Monkland, the steam-cylinder is 42 inches; the air-cylinder, 77. At Clyde Iron-works, the steam-cylinder is 40 inches, the air-cylinder, 80. At Summerlee, the steam-cylinder is 48 inches, the air-cylinder, 93. At Calder, there are two engines, one of 52, and another of 40 horse-power. At Gartsherrie, the air-vessels substituted for the water-pressure or regulator are of enormous size. The largest is 11 feet diameter, and 43 feet high, and has a capacity within of 4000 square feet; the lesser is 10 feet diameter, and 40 feet high, and contains an area of 3000 square feet. The whole of these man-

works are in full blast for seven days in the week, except Gartsherrie and Summerlee, where no work is done on Sabbath. The loss of so many days in the year might, at first sight, seem to be a great sacrifice to the respectable and conscientious proprietors of these works, but in reality it is not. The men work with more spirit and effect through the week, with the knowledge of a day's interval from labour before them, and the moral habits are advanced so as to render all concerned better servants, and more valuable members of society. Where this boon is granted, the proprietors also get their choice of the best hands; indeed, where steady men are not employed, this boon, for obvious reasons, cannot be granted.

One of the great causes of the unprecedented advancement of the iron-trade in this district is the abundant command of the black-band of ironstone, united to the no less important introduction of the heated air-blast. Without the black-band, the furnaces could not produce the same quantity of iron in the same time, and at the same cost, and by the substitution of heated for cold air, in keeping up the blast, the saving of coal or fuel has been also very great. The progress of this, like the progress of some other great discoveries, is somewhat obscure, and has not as yet been sufficiently investigated, or fairly and fully set before the public. In the history of the hot blast, as applied to the smelting of iron, as in the history of the steam-engine, the merit does not exclusively belong to one individual, but was the result of varied skill and varied application. A digest of the actual progress of this invention, which can be attested by documents and abundance of parole evidence, is as follows:

1. Mr Sadler, chemist to the Admiralty, was the first to notice the effects of heated air, and describes fully "a furnace for extricating oxygen, and other general purposes," also "an apparatus for heating the stream of air," with "observations on the air-vessel of fire-engines, to show in what manner it may be applied to blowing engines." The treatise itself is published in Nicolson's *Philosophical Journal* for April 1798, and is decidedly a treatise explaining the application of heated air to furnaces.

2. Mr Stirling, one of the ministers of Kilmarnock, in December 1810, obtained a patent for his "invention of diminishing the consumption of fuel," &c. In that portion of his specification which applies to furnaces, his plan is to "cause it to pass through long narrow flues to the furnace." The great principle of Mr Stir-

ling's patent was, that "a constant stream of heated air might be kept up by its being passed through long and narrow flues, alternately heated, by which a more intense heat might be produced with less expenditure of fuel. This was the first patent taken out for the application of heated air to furnaces.

3. In October 1828, James Beaumont Neilson, Esq. of Glasgow, obtained letters-patent from His Majesty, for an improved application of air, to produce heat in furnaces, where bellows or other blowing apparatus are required. In this patent, it was expressly specified, that "the blast or current of air so produced is to be passed from the bellows or blowing apparatus into an air-vessel or receptacle, made sufficiently strong to endure the blast, and through and from that vessel or receptacle, by means of a tube, pipe, or aperture, into the fire, forge, or furnace." This application of Mr Neilson's, although not a new principle, has been deservedly highly prized by all who understand it, and he has the merit of being the first to apply heated air, especially, to the fusion of iron. The great defect of Mr Neilson's apparatus was, that it did not long resist the united action of heat and oxygen, and did not admit of the air being heated above 200° Fahrenheit.

4. Mr Dixon of the Calder Iron-works has the merit of having been the first to discover that, with heated air, common pit-coal could be used instead of coke. He also substituted for Mr Neilson's apparatus, a long range of pipe, through which the air was driven, and to which, surrounded by a flue, the heat was applied.

5. The Messieurs Baird of Gartsherrie found that the insertion of a pipe of less diameter, closed at the end, for receiving the blast within the main one, so as to force the air through the space left betwixt the circular surface of the pipe, so introduced, and the inner surface of the main pipe to which the flame was applied, produced a more intense and equal heat; and therefore, the result to which they arrived was, that the benefit of the heated air in the smelting process could only be obtained by a method the reverse of that which had been recommended by Mr Neilson; that is to say, by diminishing the space for the passage of the air, where heat was to be applied, instead of increasing the quantity of air, by having a large vessel or receptacle for that purpose.

6. In the last stage of this great and important discovery, the merit is also unquestionably due to the Messrs Baird, of having been the first to lead the heated air through a series of branch-

pipes, which diverge from the main or supply-pipes by which the air is transmitted from a large air-receiver, alluded to in a former page. These tubes are connected with the main-pipes leading from the air-receiver, and are cased in brick-work, and heated from below. The air passes through these tubes, which are heated so as to be red hot, and enters into the smelting furnace at a temperature from 600° to 612° Fahrenheit. This last and great improvement is now universally adopted, and it is to the Messrs Baird, especially to James Baird, Esq. of Gartsherrie, that we are indebted for an invention as new and important in the history of heated air, as Watt's invention was in the history of the steam-engine. The Messrs Baird were clearly entitled to a patent had they thought fit to apply for it, but these gentlemen have generously sacrificed self-emolument, and that in various ways, greatly to their own loss.

The following tables will give some idea of the comparative advantages and progressive saving accomplished by this great discovery. In 1829, when combustion was produced by cold air, there was required :

	Ton.	Cwt.	Ton.	Cwt.
Coal. 1. For fusion, 3 tons of coke, corresponding with	6	18		
2. For the blowing engine,	1	0		
	<hr/>		7	18
Limestone,			0	10½

In furnaces blown with air heated at 450°, and fusion being produced by coke, the results were—

	Ton.	Cwt.	Ton.	Cwt.
Coal. 1. For fusion, 1 ton 18 cwt. of coke, corresponding with	4	6		
2. For hot air apparatus,	0	5		
3. For blowing machine,	0	7		
	<hr/>		4	18
Limestone,			0	9

With air heated at 612 the results are—

	Ton.	Cwt.	Ton.	Cwt.
Coal. 1. For fusion,	2	0		
2. For hot air apparatus,	0	8		
3. For blowing engine,	0	11		
	<hr/>		2	19
Limestone,			0	7

It appears that the introduction of hot air into furnaces has been attended with great saving; 1. by admitting of the use of raw coal instead of coke; 2. the saving of fuel used in smelting is in proportion to the temperature to which the air is raised; 3. hot air has increased the make of the furnaces by more than one-third, and has of course saved much expense in the article of labour; 4. one steam-engine can blow at least four blast furnaces instead of three.

It was long doubted whether iron made with raw bituminous coal and heated air would answer for malleable iron. Several experiments have lately been made to this effect, which have been attended with the most satisfactory results. Messrs Beecroft, Butler, and Co., at their works at Kirkstall, near Leeds, lately found that 4 cwt. 2 qrs. of Scotch pig iron yielded by the process of boiling instead of puddling, blooms of 4 cwt. 1 qr. 8 lbs. each, showing only the comparative trifling waste of 20 lbs. in a charge of 4 cwt. 2 qrs., and the quality of iron was found to be equal at least to any made from cold air.

The castings take place at these works every twelve hours. The iron obtained is generally a mixture of No. 1 and No. 2. The average produce of the raw ironstone varies from 22 to 34 per cent.; when calcined it varies from 40 to 50 per cent.; the average is 44, at from 8s. 6d. to 9s. per ton. On an average, the manufacture of a ton of pig iron requires 4856 lbs. of coal, or 2 tons 8½ cwt. The hot air apparatus consumes about 8 cwt. to a ton, which raises the total quantity to 2 tons 16½ cwts., or about 2½ tons to the ton of pig iron. Each furnace is fully charged twice in the twenty-four hours. Each single charge, at an average, requires about 660 lbs. of coal, 520 lbs. of calcined iron ore, and 100 lbs. of limestone; *i. e.* 154 such charges produce about 17 tons 15 cwt. or 18 tons 17 cwt. in twenty-four hours. As ordinary tuyers would not resist the high temperature to which they are exposed, water tuyers have been substituted similar to those used in refineries. The temperature at the place where the tuyer enters the furnace is a brilliant white heat, and the flame which escapes from the tunnel-head is of a bright red, whilst that of the old furnaces supplied by coke and blown with cold air is of a yellowish hue. The pressure of the blast upon the iron receiver is, on an average, about 2½ lbs. According to the dimensions of the blowing cylinder, the quantity of blast was formerly 2827 cubic feet per minute for each furnace when blown by cold air, and is now only 2120 cubic feet. The following tables will prove interesting:

Furnaces blown by cold air.		Furnaces blown by heated air.	
	T. C. T. C.		T. C. T. C.
1. Coal for fusion.		Raw coal,	2 0
8 tons coke correspond to	6 15	" "	0 11
For blowing engine,	1 0	" "	0 8
	7 15		2 19
For beating apparatus.		3780 lbs. 56 per cent.	1 18
2. Calcined Ore 3523 lbs.		704 lbs.	0 7
Average 57 per cent.	1 15		
3. Limestone,	0 10½		

The following table will show the value of the materials used by the two processes :

Materials used.	With cold air.			With hot air.		
	ton.	cwt.	L. s. d.	ton.	cwt.	L. s. d.
Coal for fusion at 5s. per ton,	6	13	1 13 3	2	0	0 10 0
For the blowing machine at 1s. 8d. per ton,	2	0	0 3 6	0	11	0 0 11
For heating apparatus,	0	0	0 0 0	0	8	0 0 8
Calced ore, 12s. per ton,	1	15	1 1 0	1	18	1 2 9
Limestone at 7s.	0	10	0 3 6	0	0	0 3 6
Labour, 10s.	0	0	0 10 0	0	0	0 10 0
General charges, interest of capital, 6s.	0	0	0 6 0	0	0	0 6 0
			L. 3 17 3			L. 2 18 10

The total cost of erecting a heating apparatus is estimated at about L. 130, 16s. for each blast furnace, thus:—Brick work, L. 20; iron work for furnace, L. 12; cast iron pipes, L. 33, 8s.

V.—PAROCHIAL ECONOMY.

Nearly the whole population, with the exception of those connected with rural operations, and a few weavers and other necessary tradesmen, are absorbed in the coal and iron trade. There is no great town in the parish, but many of the villages are increasing daily, and, indeed, the centre of the parish, about Longlone and Coatbridge, is one large village. In 1794, the number of colliers, bearers, and others connected with that business in the parish was at Fullarton, 150; Barrachnie, &c. 75; Mr Stirling's, 160; Captain Christie's, 50; total, 435. At present the number employed is about 3000.

Market-Town, &c.—The nearest market-town is Airdrie, in New Monkland, on the immediate confines of the parish. The communications in all directions by roads, railways, and the canal, are such as might be expected in a great commercial district. There are in the parish forty-four miles of roads, and ten miles of turnpike. About L. 500 per annum is raised for road-money, but in some places, from the great increase of carting from the collieries to the canal and railways, the parish roads are very bad. Four great railways pass through this parish, or enter into it by immediate junctions or connections, viz. the Monkland and Kirkintilloch, the Ballochnie, the Garnkirk and Glasgow, and Wishaw and Coltness. Besides these, the Monkland and Glasgow Canal extends through almost the entire length of the parish. The revenue of the canal may be L. 15,000 per annum, and that of the railways L. 20,000. Twenty years ago, there was no public conveyance between this and Glasgow. A track-boat was put upon the canal about that time. The Garnkirk Railway Company run a train of carriages by steam four times a day between Glasgow and Airdrie; open carriages, 8d., close

carriages, 1s. The canal boat runs twice a day; fares, 4d. steerage, 6d. cabin. The steam trains, including stoppages, go in an hour, the canal boats in two hours—the distance by both is about ten miles. The difference is 4d. per hour. Some take the cheaper, to save money, but the greater number the dearer, to save time. The canal rates have been reduced since the introduction of railways nearly one-third, and yet the revenue is in a thriving condition. In 1831, when the last population list was taken up, the passengers, goods, &c. were as follows:

	Tons coal dross.	Tons iron.	Tons sundries.	Total tons.	Amount.
	201,607	8,729	12,138	222,474	L.12,191 7 8
Sheepford tonnage,				10,156	246 4 4
Passage-boat passengers,				25,129	456 18 0
Toll-bar,					427 7 4
Rents,					107 15 0
					L.13,429 7 4

Ecclesiastical State.—The parish church is situated near the centre of the parish, (which is much longer than broad,) rather to the west side, where it is only 400 or 500 yards from the confines of the parish of Bothwell. It was built in 1790, by Mr Robert Watson, at the very moderate charge of L. 500. It is seated for 894; add 8 seats to the corner of Rosehall galleries, 902 Eight pounds Scots entitles to one sitting. The whole seats are in the possession of thirty-six individuals. The estates of Gartsherrie and Garturk, &c. have 138 seats; Rosehall, &c. 102; Carmyle, &c. 88; Drumpellier, Faskin, &c. 70; Breadiesholm, 58; Daldowie, 42, &c. There are two parishes, *quoad spiritualia*, viz. Crosshill and Gartsherrie. The new church at Crosshill was the first in Scotland on the Church Extension principle. The church contains about 600, and has no galleries, owing to the walls being too low.

This parish is bounded on the south by the turnpike road from Shotts to Glasgow; on the west, by the Barony parish of Glasgow; on the north, by the parish of Cadder; and on the east, by the Old Monkland parish road leading from Lushill to Crosshill, from Crosshill to nearly opposite Breadiesholm gate, thence by the parish road, which leads past the west of Commonhead, thence in a straight line to the Bishop Loch, a little to the east of Loch-side farm-house, including all the houses and families within said district, comprising a population of 2600.

The church at Gartsherrie is a very elegant fabric. It contains 1500 sittings. It is 69 feet long, and 49 feet wide, besides a large lobby and stairs. The height is 34 feet, the tower 136 feet, with

spire at west end. The estimated expense is L.3300. The bell was cast by Mr Burgess, brassfounder, Glasgow. It cost 1s. 4d. per lb., in all L. 180. This parish is bounded on the east and north, by the parishes of New Monkland and Cadder; on the west by the road leading from Chryston to Cuilhill colliery; on the south, by the boundary line between the estates of Gartsherrie and Drumpellier, to the point where that line joins the road leading from Blair Bridge to Gartsherrie; from that point by the foresaid road leading from Gartsherrie to Blair Bridge; afterwards by the road leading from Merriston Bridge to the new Edinburgh road; by the new Edinburgh road to the point where it crosses the Gartsherrie Burn; and by the Gartsherrie Burn and Airdrie side Burn to Sheepford Lock, including a population of 3388 souls. The two rows of houses between the old and new Edinburgh roads still belong to the original parish. The minister has a free house and a bond for L. 150 per annum.

In the six districts included under the population estimates the comparative number of churchmen and of those belonging to other denominations is as follows :

	Churchmen.	Other denominations.
1. District, - - -	764	1209
2. Do. - - -	927	208
3. Do. - - -	581	212
4. Do. - - -	1413	402
5. Do. - - -	1357	550
6. Do. - - -	1833	876
	<u>6875</u>	<u>3457</u>

As No. 3 of the population list is wanting, this only contains a portion of the population.

The tithes of this parish, together with the grassums at giving leases, belong to the College of Glasgow.

1. Gross amount of teinds belonging to the College :

	B.	F.	P.	L.	L.	s.	d.
Meal, -	173	3	2	0	139	16	6
Bear, -	18	0	0	0	16	19	7
Money, -					546	9	6
Value thereof,					<u>L. 703</u>	<u>5</u>	<u>7</u>

2. Applied to ministers' stipends and communion elements out of the gross College teinds :

	B.	F.	P.	L.	L.	s.	d.
Meal, -	136	0	0	0	109	7	4
Barley, -	136	0	0	0	146	0	7
Money, -					8	6	8
Value thereof,					<u>L. 263</u>	<u>14</u>	<u>7</u>

3. Value of the unappropriated College teinds, L. 439, 11s.

