and church, officers, &c., amounting to a little upwards of L.10 a-year.

No assessment, either legal or voluntary, for the support of the poor, has hitherto been necessary in this parish; but, as the church collections and other casualties are now not half sufficient for the purpose, it is but too evident that some such mode of support must very soon be had recourse to.

*Inns.*—There is only one inn in the parish, in which very good order is kept, and it has had no bad effects on the morals of the people. Whatever may be the faults of our people here, intemperance is a vice scarcely heard of among them.

*Fuel.*—The fuel commonly used consists of English coal, at from 15s. to 17s. 6d. a-ton; or of Scotch coal, commonly called great coal, from the south of Fife, or the other collieries in the vicinity of the river Forth, at from 16s. to 18s. 6d. a-ton, according to the quality. This is delivered at the piers in the parish or its neighbourhood, and costs little for carriage. A good deal of wood is also used for fuel, consisting of the thinnings or prunings of plantations.

*October* 1843.

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# PARISH OF KILMADOCK.

PRESBYTERY OF DUNBLANE, SYNOD OF PERTH AND STIRLING.

THE REV. GORDON MITCHELL, A. M., MINISTER.

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## I.—Topography and Natural History.

*Name.*—The name is believed to signify the *Chapel of St Madock, Madocus*, or *Modocus*, one of the Culdees.

*Extent.*—This extensive parish is about 12 miles in length, and 9 in breadth, containing at least 64 square miles.

*Boundaries, &c.*—It is situated in the ancient stewartry of Monteith, and is bounded on the north, by Muthill and Comrie; on the south, by Kincardine and Kippen; on the east, by Dunblane and Lecropt; and on the west, by Callander and Port-Monteith.

*Topographical Appearances.*—Its figure, though somewhat irregular, approaches to a parallelogram. Situated betwixt the Grampians and the Ochill hills, with a variety of hill and valley, it con-

tains one considerable hill, the Uamvar of the "Lady of the Lake."* The view from this hill is splendid and extensive.

That "magnificent mountain," as Sir W. Scott calls it, Benledi, which signifies the *mountain of God*, appears to great advantage from

> "the mountain's southern brow,
> Where broad extended far beneath,
> The varied realms of fair Menteith."

*Climate, &c.*—"This parish is an extremely healthful situation. While the Grampian mountains protect it from the nipping frosts of the north, it is finely exposed to the Atlantic breeze and heat of the sun. The rapidity of the river Teith and the smaller rivers have likewise a strong tendency to sweep away those noxious vapours that haunt the low countries. Being situated in the centre of the kingdom, the climate is mild and free of those rains that drench the western coast, and the piercing winds that blow incessantly on the inhabitants of the eastern borders. Hence in this parish there are very few diseases. The inhabitants enjoy a clear healthful atmosphere, and live to a good old age."

"This parish abounds with fine water springs, from its peculiar situation on the side of the Grampian mountains. From the sides of Uaigh-mor a great number of springs issue, and at one place, near the burn of Garwall, there is a very large spring rushing out of the solid rock in the form of a spout, the water of which is (said to be) mineral. The town of Doune is plentifully supplied with springs of soft water that never dry in the warmest summer, and the banks of Teith abound with similar natural springs."—(Old Account.)

*Lakes or Lochs.*—There are two lakes or lochs in the parish;

* The word Uamvar (Uaigh-mor) signifies the great cave. The hill is remarkable for a cavern in the south or the Kilmadock side, as it is for a chasm on the north. "Ua-var," says Sir W. Scott, (appendix to Lady of the Lake, note A), "as the name is pronounced, or more properly, Uaigh-mor, is a mountain to the north-east of the village of Callender in Menteith, deriving its name, which signifies the great den or cavern, from a sort of retreat among the rocks on the south side, said by tradition to have been the abode of a giant. In latter times it was the refuge of robbers and banditti, who have been only extirpated within these forty or fifty years." The last Account, written in 1794, says, "they were only extirpated about forty or fifty years ago." In one part of the south brow, large towering rocks are piled sublimely together. At a little distance is the "great cave," so called,—a rocky cavern of great extent, in the form of a parallellogram, connected with which are two small caves, one of them forming a very commodious place of shelter or concealment, and the other producing very fine echoes when stones are pitched into it. Such are the "heights" and "wild haunts of Uamvar,"

> With "the cavern where 'tis told
> A giant made his den of old."

the Loch of Watston, on the estate of Gartincaber, and Loch Meghaig, in the braes of Doune. The latter is formed chiefly from the springs above referred to. It forms nearly a circle, and is about a mile in diameter, while its depth is considerable.

*Rivers.*—Besides the smaller streams, Keltie, Annat, and Ardoch, the river Teith flows through the parish, and the Forth is its south boundary. The Teith rises partly at the head of Glengyle, flowing through Loch Venachar from Loch Achray and Loch Katrine, and partly in the Braes of Balquidder, flowing through Loch Voil and Loch Lubnaig, the two streams uniting above Callander and joining the Forth two miles from Stirling.

*Cascades.*—Though we cannot claim the neighbouring scenes of Bracklin Bridge and Pass of Leney, the "braes of Doune" can boast a number of beautiful cascades, formed by the Annat,—one or two at least rather considerable; while, not to mention the numerous torrents of Teith's rocky channel, splendid though artificial cascades are formed by the Deanston embankments. There is also a beautiful fall of water from the canal connected with the works.

*Zoology, &c.*—The fishes in the rivers are salmon, trout, &c.: and pike and perch in the lakes. The salmon are said to come up the rivers for spawning in December, and to return in the end of January. Pearls have long been found in the Teith, in a certain shell-fish. The sea gull frequents the lochs, and the new dam of Deanston. A pure white magpie has sometimes been seen. Excellent horses are bred in the parish. The stag from Glenartney is a frequent visitor.

## II.—Civil History.

There is in the possession of James Macfarlane, Esq. Woodside cottage, a "bond of manrent granted by the Edmonstones of Duntreath for the manslaughter of James Stewart of Beith, umquhile father to Sir James Stewart of that Ilk and Doune."

*Eminent Characters.*—Connected with this parish by residence were, Napier of Merchiston, the immortal Inventor of Logarithms,—"the person," as Hume says, "to whom the title of great man is more justly due than to any other whom his country ever produced;"* and Robert Spittel, the benevolent and philanthropic founder of the bridge of Teith, and also of the Stirling Hospital which bears his name.

* Ballinton, in this parish, was the seat of the Lords Napier till the middle of last century. A copy of the Confession is subscribed in the session records by Lord Napier, with other ruling elders and the minister.

Connected with the parish by birth are, the Rev. John Row of Row, and the Rev. Alexander Fletcher of London.

*Land-owners.*—The chief land-owners are, the Earl of Moray, who has one-third of the valued rent and upwards; Henry Home Drummond, Esq., M. P. of Blair-Drummond; John Burn Murdoch, Esq. of Gartincaber; Andrew Jardine, Esq. of Lanrick, nephew to the late W. Jardine, Esq., M. P.; Major Buchanan of Cambusmore; Captain Graham of Coldoch; Archibald Stirling, Esq. of Keir; and George Binning Home, Esq. of Argaty, &c.

The estate of Lanrick, formerly the property of Sir Evan Murray Macgregor, passed in 1840 into the hands of William Jardine, Esq., M. P., partner at Canton of James Matheson, Esq. of Achany, M. P. The suggestions of Mr Jardine on the subject of the late war in China are said to have met with due consideration from the British Government. He died in London in February 1843.

*Parochial Registers.*—The parochial registers commence in 1623. They are not voluminous. One volume was destroyed by fire in the school-house.

*Antiquities.*—The principal antiquities are, Doune Castle and the Bridge of Teith. This castle is thus noticed by Sir Walter Scott in Waverley: "On the opposite bank of the river, and partly surrounded by a winding of its stream, stood a large and massive castle, the half-ruined turrets of which were already glittering in the first rays of the sun. It was in form an oblong square of size sufficient to contain a large court in the centre. The towers at each angle of the square rose higher than the walls of the building, and were in their turn surmounted by turrets differing in height and irregular in shape. This noble ruin," adds Sir Walter in the note, "is dear to my recollection, from associations which have been long and painfully broken. It holds a commanding station on the banks of the river Teith, and has been one of the largest castles in Scotland. Murdock, Duke of Albany, the founder of this stately pile, was beheaded on the castle-hill of Stirling, from which he might see the towers of Doune, the monument of his fallen greatness. In 1745–46, as stated in the text, a garrison on the part of the chevalier was put into the castle, then less ruinous than at present. It was commanded by Mr Stewart of Balloch, as governor for

Prince Charles. He was a man of property near Callander. This castle became at that time the actual scene of a romantic escape made by John Home, the author of Douglas, and some other prisoners, who, having been taken at the battle of Falkirk, were confined there by the insurgents. The poet, who had in his own mind a large stock of that romantic and enthusiastic spirit of adventure which he has described as animating the youthful hero of his drama, devised and undertook the perilous enterprise of escaping from his prison. He inspired his companions with his sentiments, and when every attempt at open force was deemed hopeless, they resolved to twist their bedclothes into ropes, and thus to descend. Four persons, with Home himself, reached the ground in safety; but the rope broke with the fifth, who was a tall lusty man. The sixth was Thomas Barrow, a brave young Englishman, a particular friend of Home's. Determined to take the risk, even in such unfavourable circumstances, Barrow committed himself to the broken rope, slid down on it as far as it could assist him, and then let himself drop. His friends beneath succeeded in breaking his fall; nevertheless, he dislocated his ankle, and had several of his ribs broken. His companions, however, were able to bear him off in safety. The Highlanders next morning sought for their prisoners with great activity. An old gentleman told the author he remembered seeing the commander, Stewart,

"Bloody with spurring, fiery red with haste,

riding furiously through the country in quest of the fugitives."

Doune Castle stands on a round hill or mound. It is a massive edifice with a spacious square tower 80 feet in height, at one end of the front, and another, but smaller, behind the opposite extremity, nearly 40 feet in height, forming the whole into an ample quadrangle. It is uncertain when it was erected, though the tradition is, that part of it was built by Murdock, one of the Dukes of Albany, two of whom occupied it successively as an occasional residence. It was frequently occupied, in the sixteenth century, by Margaret, daughter of Henry VII. and widow of James IV. Macgregor of Glengyle held it in 1745, when John Home was confined in it It has long been the property of the Earl of Moray, and gives the title to his eldest son. This extensive building overhangs a steep and narrow green bank, being romantically situated on a peninsula at the conflux of Teith and Ardoch, its lofty towers rising far above the surrounding trees, and

producing a fine effect. The great gate stands in the north, and the iron gate with its bars still remains entire. The north-west corner is said to have been the family residence. There are several cellars and prisons on the ground-floor, on each side of the entry, and after being introduced to the great area, the ascent to the tower and family mansion is by two inside stairs, standing over against each other. The western stair leads up to a spacious lobby that divides the kitchen from the great hall, which is 63 feet by 25. The fire-place in the kitchen occupies an entire side of the room, and is supported by a strong arch, which is still entire. The eastern stair leads up to the apartments in the tower. One is a spacious room with an arched roof and a large fire-place, containing a circular pillar. From its south-east corner, a narrow stone stair descends by a subterraneous passage into a cell or dungeon.

The writer of the former account doubts the truth of the common tradition as to the founder of this castle; but there is every reason to think that Murdock must have built part of it, as the difference between the more and less ancient parts of it may still be traced.

Murdock was son of Robert, who was son of Robert II. King of Scotland. He was taken prisoner by the English at the battle of Homelden in 1401, and succeeded his father in the Government on the 3d of September 1420, but resigned it four years afterwards. His resignation was followed by an accusation of high treason against him as well as his two sons and his father-in-law, who were seized and carried prisoners to Stirling. Murdock was taken betwixt Doune and Dunblane, at a small rivulet, which was therefore called Murdock's ford, a name which it retains to this day. Though the castle is roofless, the walls are still entire, having the appearance of great solidity and strength. Doune castle is mentioned in the beautiful traditional ballad which relates the death of the "Bonnie Earl of Moray."

Interesting as it is on account of its other associations, "it is rendered still more interesting," says Dr Graham (Sketches of Perthshire), "by its having been for some time the residence of Mary Queen of Scots. And though Sir W. Scott, in the observance of the Horatian rule—

> ——— ad eventum festinat et in medias res
> Non secus ac notas auditorem rapit.

it seems to be unquestionable that the knight of Snowdon and his

retinue had slept at Doune Castle on the night previous to the chase; else

"The deep mouthed blood hounds heavy bay,"

had not

"Resounded up the rocky way,
When the sun his beseon red
Had kindled on Benvoirlich's head."

*Bridge of Teith.*—The Bridge of Teith is a strong building of two arches, situated half-way between the castle and Deanston. It was erected in 1535* by Robert Spittel, tailor to King James IV. or rather to Queen Margaret. Tradition assigns to it a somewhat singular origin. Once on coming to the ferry, Mr Spittel found he had left his money behind—excepting, as it is sometimes added, a small coin, which he cut in two with his scissors, offering one-half as his fare. The boatman refused to ferry him over, and the generous tailor built the bridge! Be this as it may, Mr Spittel must have been a man of noble mind and benevolent heart, and the hospital which he founded in Stirling for the relief of decayed tradesmen is another and an appropriate monument of his patriotic virtue. Inside the western parapet of the bridge, are the armorial bearings of England and of Scotland, in separate shields surmounted by crowns.†

At some distance from these is the following inscription, in the centre of which is a shield with a device resembling a spread eagle, and in the base a pair of large scissors formed *en saltier*:—"IN . GOD . IS . AL . MY . TRUST . QUOD . ———TTEL . THE . X . DA . OF . SEPTEMBER . IN . THE . ZEIR . OF . GOD . M.VCXXXV . ZEIRS . FUNDIT . WES THIS . BRIG . BE . ROBERT . SPITELL . TAILZER . TO . THE . MAIST . NOBLE . PRECES . MARGARET . —NG . JAMES . THE. FEIRD—OF . ALMIS."

The first of the Spittels was a younger son of Sir Maurice Buchanan of Buchanan, in the line of Alexander III. He had entered the order of the Knights Hospitalers, and hence in the

* The former Account has it "about the year 1530."

† The tricentenary was celebrated under the auspices of Mr Smith of Deanston in 1835. A fac-simile of the inscription was engraved on that occasion, copies of which are frequently to be met with in the parish. The following is added in the engraving as a translation: In God is all my trust quoth Spittel the 10th day of September in the year of God 1535 years, founded was this bridge by Robert Spittel, tailor to the Most Noble Princess Margaret, Queen to James the Fourth.—Of alms. The engraver has omitted the word "King" though the last two letters of it are still legible on the bridge. The version in Stirling's edition of Nimmo's Stirlingshire, substitutes honourable for noble. That authority says, "The line on the shield is perhaps a falcon, as the Spittels are a branch of the Buchanans whose supporters are falcons."

Scottish language was called Spittel. It is a singular coincidence that the people at first were, it is said, as jealous and suspicious of the bridge of Teith, as they were of the Deanston mill 250 years after. "Though this goodly edifice was a work of charity, and intended exclusively for their convenience," (as indeed the words "of alms" express), the common people could not help regarding it with all the suspicion and dislike which the lower classes of Scotland too often entertain respecting attempts at improvement, comfort, or decoration. While they took advantage of the expensive public work erected for their service, they could not help thinking upon the good old Bridge of Callander with feelings of tenderness, and this sentiment seems to have extended itself into a comparison between the old and the new bridge, much to the disadvantage of the latter. The rhyme in which this sentiment was embodied has been preserved by tradition, though the object of its flattery is supposed not to have been in existence since the time of the Reformation—

> The new brig of Doune, and the auld brig of Callander,
> Four-and-twenty bows in the auld brig of Callander."

This, we suppose, alludes to the circumstance of there being no fewer than the extraordinary number of twenty-four arches in the ancient bridge! *

Of the former church at Kilmadock, there is still standing a small part, chiefly the east gable. The ruin is highly picturesque, and the effect of the beautiful ivy-mantled window is in fine keeping with the romantic scenery of this sequestered spot. Out of six chapels which are said once to have existed in the parish, four have entirely disappeared,—those of Annat, Lanrick, Torry, and Walton. There is still to be seen at the bridge of Teith, a wall said to have been part of an old chapel there. Of the chapel at Newton there remain the west gable and part of the side walls.

A cave is said to have been discovered at Coldoch, and there is the appearance of a camp close to Doune Lodge, with a large stone at some distance called the "camp stone," said to have given the property its former name Cambuswallace *quasi* Wallace camp,—while one or two standing stones are to be seen, which are supposed to be Druidical monuments. Before the date of last Account, several graves were discovered below Rosehall, enclosed with four stones each, in the form of the ancient tombs of Caledonia, but no bones remained; from which it is evident that

* Chambers's Popular Rhymes, &c. &c. of Scotland.

they are of great antiquity. It is very remarkable that before they were discovered, there was a local tradition that a battle was once fought near this spot, and that several were killed in the fray. The tombs discovered may have been the graves of these ancient chieftains.

*Modern Buildings.*—The principal modern buildings are the parish church at Doune, Lanrick Castle and Suspension bridge, Deanston House manufactory and village, the new Secession chapel at Bridge of Teith.

## III.—Population.

| | |
|---|---|
| The population of this parish in 1755 was only | 2730 |
| By the last census (1841) it had increased to | 4050 |
| In 1831 it was | 3752 |
| 1821, | 3150 |
| 1792, at the date of last Statistical Account, it was | 3209 |

One cause of the great increase during the decade between 1321 and 1831 is said to have been the extension of the Deanston Works.

*Language.*—The language generally spoken is provincial English, with Gaelic by a few families. The common language, in last Account, is said to have been "a mixture of Scotch and English." "In the quarter towards Callander," says Mr M'Gibbon, "the generality of the inhabitants speak Gaelic," as some of them do to this day.

## IV.—Industry.

*Agriculture.*—The parish contains about 51,200 acres, a part of which remains constantly waste or in pasture. A great deal might, with a profitable application of capital, be added to the cultivated land of the parish.

*Rent of Land.*—The average rent of arable land is said to be about L.1 per acre.

Great improvements have been recently made in the parish. Besides those on Lanrick and at Argaty, we cannot omit to notice the system carried on by Mr Smith at Deanston, who has not only completely changed the face of the country, but turned the wilderness into a garden. It is only necessary to refer to Mr Smith's published "Remarks on Thorough Draining and Deep Ploughing." These are the two great principles of the well known "Deanston system."* Mr Smith holds furrow draining to be the foundation of subsoil ploughing.

* This system is thus spoken of in the Quarterly Journal of Agriculture (June

*Manufactures.*—In this parish are the celebrated Deanston Cotton-works. The following correct description of them is taken from the Inverness Courier.

"Deanston Cotton-Works employ above 1100 persons, young and old, and contain the most perfect machinery in the kingdom. The first erection took place in the year 1785, by the Messrs Buchanan of Carston, four brothers, the eldest of whom was an intimate acquaintance of Sir Richard Arkwright, and was his first agent in Glasgow for the sale of cotton twist. The English had annoyed Sir Richard so much by invading his invention, that he resolved to instruct young Scotsmen in the art, in preference to his own countrymen; and among others, Mr Archibald Buchanan (now manager of the Catrine works, Ayrshire,) went apprentice to Sir Richard, and was the only one who had the privilege of living

1889). "The thorough or Deanston mode of draining, of so great benefit, not for Scotland only, but for the whole kingdom, is as yet in its infancy. Already, the fame and the utility of it are spreading all over the island, and we have not a doubt, in a short time, there will not be found a spot, where improvements are carried on, that has not been 'made anew' by means of this simple, yet powerful and efficient system of draining." "The principle of the system," as explained by Mr Smith himself, "is the providing of frequent opportunities for the water rising from below, or falling on the surface, to pass freely and completely off." Mr Smith adds, that the most appropriate appellation for it, therefore, seems to be "the frequent drain system," or "thorough drainage system." In deference to Mr Smith, but in justice to his claims as the inventor, it seems not inappropriately called the Deanston system. "In proceeding to apply this system of drainage to a farm, the first object," says Mr Smith, "is to allow a sufficient fall or *level*, as it is commonly termed, for a main drain to receive the water flowing from the ordinary or parallel drains." We do not here describe the system, referring to Mr Smith's own description. Suffice it to remark the necessity of "closely covering the upper surface of the stones with a thin thatch or flautcher, divot or turf, as many drains are ruined at once by the running in of the loose earth."

With regard to deep ploughing, Mr Smith remarks, "All who have ever studied or experienced the most common gardening must be aware of the important advantages of deep working, and, when it can be attained in the broad field of farming, at so small a cost as 9s. per acre, they may easily believe that the whole will be more than doubly repaid in every succeeding grain crop, and abundantly even in pasture. When this subject was treated of in the Second Report of Drummond's Agricultural Museum, published in March 1833, the system was beginning to be adopted in a few places, in a very few districts of Scotland, England, and Ireland, and, in most instances, on a very limited scale. Since then, the intrinsic merits and evident results of the system have raised its character even with many of its former opponents, and one cannot now travel almost anywhere in the country without seeing, either on a large or a small scale, the operation of thorough draining going on. The deep ploughing is not yet so general, but it will undoubtedly follow; and, it is to be regretted, that, in the meantime, some zealous and good farmers, not aware of its advantages, are filling their drains so near the surface, as to mar the future thorough application of the system of deep working." "I have been often asked," says Mr Smith in a note, "if I would recommend subsoil ploughing of land which had not been drained. To this I answer, certainly not. * * * So soon as wet lands are thoroughly drained, deep ploughing may follow with the greatest advantage, but not sooner."

"Thorough draining," adds Mr Smith, "is the foundation of all good husbandry, and when combined with deep ploughing, ensures a general and uniform fertility, assisted, no doubt, by the essentials, thorough working and cleaning, ample manuring, and a proper rotation of cropping."

in the house with him. Sir Richard was an old bachelor, and was so intent on his schemes and calculations, that young Buchanan and he often sat for weeks together, on opposite sides of the fire, without exchanging a syllable. The old man, however, was in his other moods extremely kind and familiar, and recollected his pupil in after life.

"The powerful fall and supply of water in the Teith having suggested to the elder of the Buchanans the idea of placing a cotton-spinning establishment at this spot, where it now stands, the scheme was soon ripened into action. There was a lint mill with a dam upon the property, and the owner disposed of the mill to him, and gave him a feu of six acres along the margin of the stream. Carding and roving for jenny-spinning were then the only processes which were driven by power (as it is termed), and for this purpose the old lint mill was appropriated, a building being erected close by for the reception of the jennies. At first, the Highlanders were shy of entering this tower of Babel, with its unknown sounds and sights: they considered it a sort of prison. From the respectable manner in which the works were conducted, they were gradually reconciled to the employment, and were quite willing that both themselves and children should be engaged. Archibald Buchanan was then a fine athletic young man of eighteen or nineteen, of a social generous disposition; he mingled with the people; and thus a number of active young men of the district, of the better classes, were led to work at Deanston; and so expert did they become, that as fine yarn was then spun at Deanston as has subsequently been made by the best spinners in Manchester. Some of these young men afterwards made fortunes in business, and the firm of the Macphails in Glasgow (extensive spinners and power weavers) had its origin in one of the family repairing from Ross-shire to work at Deanston.

"In the year 1793, the works at Deanston passed into the hands of a Yorkshire Quaker, a benevolent old gentleman named Flounders; and in 1808 they became the property of James Finlay and Co. from Glasgow, with whom Mr Archibald Buchanan had become connected. The establishment was at this time remodelled under the charge of the present manager, Mr Smith (a nephew of Mr Buchanan), who is well known for his mechanical as well as his agricultural inventions and improvements. In 1822, the company made arrangements with the neighbouring proprietors for

additional water-power, by which they acquired a fall of 20 feet, making the whole fall 33 feet.

"An extensive plan of enlargement and improvement was now adopted; the works were thriving, and machinery was daily becoming more and more perfect. In this plan, it was proposed to erect eight water wheels in one square building, each to be 36 feet in diameter, and 11 feet wide inside, being overshot, and having the shrouding and buckets 24 inches deep. At present four of those wheels are in operation, and pedestals have been erected for two more. They are the most gigantic-looking things we ever saw, and distribute, by innumerable shafts, the whole of the vast concentrated power over the different apartments. Each wheel has a power equal to eighty horses!

"The whole of the works are lighted with gas, and they possessed this advantage so early as 1813, before any of our towns could boast the same brilliant light. Tunnels are made all under ground, by which communication can be had with the different departments without going out of doors, and every other facility has been adopted for carrying on the operations. Carts proceed daily to Glasgow with the produce. The construction of the various works must have cost an enormous outlay of money, and a considerable charge annually will be brought against it in the shape of interest; but we were informed that the power being once acquired, the annual expenditure for management and repairs is small indeed—not exceeding, on the average, L.400 per annum. The steadiness of the stream of the Teith, which flows from Loch Katrine and five of her lakes, renders the command of water extremely uniform, and the loss of a few hours' work per day for a week or fortnight in the driest period of summer is all the stoppage the works ever experience.

"The process of manufacture may be described as follows:—The bags of cotton, containing each about 300 pounds weight, are laid upon the floor in rows, taken out and thrown into a machine called a *Willow*. This willow is a revolving cylinder with iron teeth, which divides and breaks down the masses. The *materiel* is then conveyed to another machine—*the Angel*. The cotton is then weighed in small portions, spread out, and put into a machine which determines and regulates the grist of the thread. Passing through pairs of rollers, the cotton is struck by iron beaters (as in a thrashing-mill) at the rate of six thousand feet per minute! The lighter dust is drawn through a revolving wire sieve by the

action of a fanner, and is thus blown to the open air, ridding all the processes of that annoyance which used to be so hurtful to health. The cotton is now in the form of a web—is next wound on rollers—and put to the carding-machines, whereby the fibres of the cotton are completely separated, and any remaining lumps or refuse are taken out.

"The machines used here are of a peculiar construction, in which a process formerly done by hand is now performed by mechanism, and for which Mr Smith holds a patent. By the variously improved construction of this machine, the saving of labour in this process will amount to about thirty per cent. Some peculiar and beautiful movements are introduced, but it is impossible to describe them. The next process to which the material passes, is the drawing machine, wherein the fibres are drawn into a parallel and longitudinal position, by means of successive pairs of rollers, the first pair holding the material, and allowing it to pass with a slow progress, whilst the second pair lay hold of it and pull it in the same way as a man draws straw for thatching. When the fibres have been sufficiently brought to parallel (which is done by repeating this process three or four times in the same machine), the material is carried to what is called a *roving frame*, where it is drawn to a much smaller grist, and then twisted into a thready form, and is wound upon bobbins. These bobbins are carried to spinning machines, when the grist is still more reduced, until the thread reaches its desired size, when it is twisted sufficiently firm to become thread fit for weaving. The thread intended for warp is spun upon a machine called a *throstle*, which is a modification of Sir Richard Arkwright's original machine, and at this work a recent American invention has been adopted; it admits of great velocity in the twisting process, and, consequently, produces a much greater quantity of work in the same time. The bobbins, by the movements of which the twist is thrown into thread, go at the amazing velocity of 8000 revolutions per minute! The effect is magical. These machines are attended by children, chiefly little girls, who are singularly dexterous, and they are superintended in divisions by grown-up women—one male superintendant having the general charge of a department. The work is light and easy, but requires constant attention and great cleanliness and order, and thus it may be said to form an excellent school for training the young to habits of attention and industry. These little girls follow the employment with spirit and cheerfulness, from

eight to twelve hours a-day. The yarn intended for woof or weft is upon the *mule jenny*, a machine invented by a Mr Crompton, near Bolton, Lancashire. It is an adaptation of the twisting process of the old jenny, or meickle wheel of this country, to the drawing process of Sir Richard Arkwright. Hitherto such machines have generally been worked by men of great strength and skill, who acquired high wages, and were the chief movers in all the combinations of the cotton trade. To obviate the inconvenience of these strikes, the attention of mechanical men has been for many years directed. The machines employed here were invented by Mr Smith some years ago, for which he holds patents for the United Kingdom, most of the countries on the continent of Europe, and for America. The machine is now being extensively introduced in the trade generally. Mr Smith has just completed an adaptation of this principle to mules for spinning wool, and which is likely to be of vast importance in the present rising state of the woollen manufactures of our country.

"The invention of this machine removes the only laborious and slavish employment that remained in the cotton manufacture, and effects a saving of about 50 per cent., besides producing an article of superior quality, and insuring regularity. It has created a demand for young females' labour, who are better paid than when they worked under the spinners—the money being thus more equally distributed. It gives, besides, to this country an important advantage over the cheap labour of other countries.

"In preparing the warp for the weaving process, from 500 to 1000 bobbins are arranged in regular rows in a wooden frame, and from these the threads proceed towards a beam, or roller, on which they are wound, having a peculiarly beautiful appearance, the threads converging towards the mass, like the rays of the sun from behind a cloud. Being collected, the threads are passed through a machine whereby the threads are stiffened, by being immersed in a paste formed of flour and glue boiled together with water. Brushes attached to mechanism sweep along the surfaces of threads, laying all the fibres, and rendering them smooth and uniform. Fanners are put in rapid motion, and blow heated air upon the mass of threads, so as to render it perfectly dry before being placed on the weavers' beam. From this it is carried to the power-loom, where the whole operations are performed by mechanism; the young women, who attend two looms each, having merely to supply the woof from time to time, and mend such

threads of the warp as may break in the process. The woof is supplied in little pirns or cops, formed on the self-acting mules; each loom will, on cloth of ordinary thickness, such as a common calico, produce about thirty yards per day, making 60 the work of each girl. These looms, to the number of about 300, are arranged in rows, with alleys between, in a most spacious apartment, which, when lighted with gas, has a most magnificent effect.

"In going over the vast establishment, it seemed to us like entering an illuminated village, and we shall not soon forget the effect of 300 gas lights in one apartment. This building is quite novel in its structure, the roof being composed of groined arches, supported on cast-iron columns, 12 feet high, and the rise of the arches being 6 feet; the greatest height of the ceiling is 18 feet. The groins are in squares of 33 feet 6 inches, and in the centre of each groin there is a circular opening 8 feet in diameter, surmounted by a handsome glass cupola light, affording a most uniform and perfect light for the operations carried on below. The arches are rendered water-tight in the most simple manner by a coating of pitched coal tar, about a quarter of an inch in thickness, and the whole is covered with three or four feet of soil, intended to form a garden for flowers and other plants. It is remarkable, that during the intense frost of the winter 1837–8, the hardening did not penetrate more than one and a-half inches into this soil—owing, doubtless, to the heat from below. This building covers altogether upwards of half an acre, and every individual in the apartment can be seen from any point. The whole is fire-proof. The general order of management at the Deanston Works is very much on the principle of Arkwright—a proof of the talents of that eminent person. There is a head or superintendant to each department—every one has his own allotted part—and in most cases they are paid by the piece, not in weekly wages. They receive the amount of their earnings every Thursday morning (that being the market day); and the youngest individual about the works is paid his or her wages into their own hand, which seems to give them an idea of personal consequence. They have all the privilege of leaving any moment they choose, without previous warning; and we were informed that this is found to insure a more steady, agreeable, and lengthened service than could be obtained by the firmest indenture. There is no fine or punishment, excepting for damage to the works through evident carelessness. The order of the establishment is preserved by the dismissal of offending individuals,

or their banishment for a limited period. By 'stopping the supplies,' every member of the family is interested in the good conduct of the whole, and a banished child, man, or friend, finds no rest at home. The morals of the people are in general very correct; no drunkard is permitted about the establishment. We inquired of an intelligent medical gentleman at Doune (Dr M'Ansh) whether the spinners were as healthy as the other villagers. His answer was, 'They are not so robust (owing to their confinement), but their health is as steady and uniform.'

"Immediately adjoining the works is a handsome little village, built and founded by the company, which contains about 1200 inhabitants. The houses are neat, built in one long street parallel to the water course, and are two stories high, with attics. They are most exemplary patterns of cleanliness, and to each house is attached a small piece of garden ground, and a range of grass plot for bleaching. A school-room is united to the establishment, capable of containing 200 children, and a teacher is paid by the company. The young children generally go to school when about five years of age; and as none are admitted into the works until they are nine, they are mostly good readers, and able to write and cypher before they enter the works. The children employed in the works from nine to thirteen years of age, must, according to the Factory Act, work only eight hours per day, and about three hours are devoted to the school-room. The number at this age amounts to 100, and they are divided into relays of 33 each; so that while two relays are at work, one is attending school. The youth above thirteen years of age and under sixteen are expected to attend an evening school four nights in the week; and a Sabbath school in the village contains about 150 pupils. Thus the works at Deanston seem to possess every facility and recommendation; they have changed the aspect of the country—beautiful and romantic as it is—by introducing into it habits of industry, order, and the highest mechanical genius and dexterity; they cause a circulation of money to the extent of about L.20,000 per annum; they furnish employment for the people of all ages; they have called forth the spirit and activity of the agriculturists to meet the ever-recurring demands of the place; and in all respects they are a splendid monument of British enterprise, skill, and perseverance."*

* To this account it may now be added, that Mr Smith has ceased to be a partner, and has retired from the management, while the machine making department is

## V.—Parochial Economy.

*Market-Town.*—Stirling is the principal market for grain. It is eight miles distant from Doune.

*Villages.*—The only two considerable villages in the parish are Doune and Deanston. Doune is a pleasant village, with three principal streets. It contains a market cross, a handsome church, and several good houses. It was formerly celebrated for three manufactures,—viz. skiuning, Highland purses, and Highland pistols. The houses are well built, mostly slated, and of rather recent erection. Deanston, the other considerable village, is mentioned in the Lady of the Lake, where it it spelt Deanstone.

> Torry and Lanrick now we past,
> And Deanstone lies behind them cast.

It is a very neat and clean-looking village, consisting of two rows of houses, which form one wide street, with a lane behind. The one row, which is small, is several feet below the level of the street; the other consists of four detached divisions of equal extent. The houses are uniform (two stories high with attics) and white-washed, giving the village a very neat appearance.

There are four hamlets or small villages besides, viz. Buchany, or Burn of Cambus, Drumvaich, Delvorich, and Bridge of Teith, sometimes called the Cotton Row, and formerly the new town of Doune,—a name which is now more applicable to Deanston. Buchany and Burn of Cambus were formerly distinct villages, but three houses of the latter only remain.

*Means of Communication.*—Doune is a post-town. We have a mail-gig daily between Stirling and Callander, and two carriers twice a-week betwixt Doune and Stirling. Though there is no great length of turnpike roads in the parish, a stage-coach runs between Callander and Stirling daily in summer, and twice a-week (Mondays and Fridays) in winter. Last two summers, there were two coaches daily connecting with the Edinburgh and Glasgow Railway.

The former Account said, "There is no bridge over Teith below Callander, except one near Doune, called Bridge of Teith." This complaint continued to be well founded up till 1842, when a suspension bridge was erected at Lanrick on plans by Mr Smith of Deanston.

now given up, with the exception of what is required for the wants of the establishment, which has long been celebrated for the manufacture of the patent self-acting mule invented by Mr Smith. This gentleman is well known as an eminent agriculturist and engineer—ranking with not only the Wattses and Arkwrights for his mechanical skill, but also with the Howards and Clarksons for his benevolence.

*Ecclesiastical State.*—Formerly the parish church stood at Kilmadock, the site of the "ancient monastery of St Madocus;" but it was taken down in 1744. The last church was built at Doune, in 1746. The former Account says that it was built about the year 1756, the first incumbent of the new church being Mr James Smith. The fact is, Mr Smith's predecessor preached ten years in Doune. Mr Smith succeeded Mr Archibald Napier in 1755, his other predecessors being, Messrs George Campbell (1705–1711), John Logan, David Drummond, John Edmonstone, William Edmonstone, (who is mentioned in the kirk-session records from 1623), and Alexander Fergy (1576), with Robert Fogo and Thomas Redoch (reidars) readers (in 1576 and 1569 respectively.)

The church is situated towards the east end of the parish, and is convenient for the greater part of the population. It is a very handsome if not elegant church: and on the whole, very commodious. The style is chiefly Gothic.

The only interesting benefactions on record are a set of eight Bibles and Psalm Books, besides pulpit ones, presented to the kirk-session by the Earl of Moray on the opening of the new church; and the only important ones four silver communion cups, with the other necessary utensils, presented by William Mitchell, Esq. of Bushy Park, Jamaica, a native of Doune.

The church is seated for 1121, but is capable of accommodating 1400 persons. The age of the manse is unknown. It was repaired thirty years ago.

The glebe is stated in last Account at six acres in extent. It contains upwards of seven acres, including the garden. The stipend is 18 chalders, half meal and half barley, with L. 10 for communion elements. According to the Report of the Commission for Religious Instruction, the glebe is L.7 in value, with a right to cut peats; and the stipend, L.288, 7s. 1d., the unappropriated teind being L.625, 2s. 9d.

There is a chapel at Bridge of Teith in communion with the United Associate Synod. The minister is supported by seat-rents and collections, his stipend being stated at L.100.

A congregation has lately been formed in connection with the Congregational Union of Scotland.

A small Wesleyan Methodist chapel is in progress.*

There is a general Bible and Missionary Association in Doune,

* To this it falls now to be added, that there are in Doune (which contains five churches or congregations in all) two churches in connection with the "Free Protesting Church of Scotland."

which, up till this year, has collected L.30 annually and upwards; besides one connected with the congregation at Bridge of Teith, the income of which varies from L.20 to L.30.

The probable average annual amount of collections yearly in the parish church for religious and charitable objects may be stated at from L.80 to L.100.

*Education.*—There are seven schools in the parish. Of these, one is the parochial school, three are endowed, at least partially, the rest supported by individual subscription. The parochial teacher has the maximum salary, and the legal accommodation.

*Literature.*—There is a circulating library in connection with Deanston Works, besides religious ones attached to each of the three oldest churches in the place.

*Savings' Bank.*—There is a savings' bank in Doune, viz. the "Kilmadock Parish Savings' Bank," besides one at Deanston for the cotton workers exclusively.

*Poor and Parochial Funds.*—The average number of persons receiving parochial aid is about 55 (though it has suddenly risen, by the pressure of the times, to 62,) and the average sum allotted to each is about 1s. 6d. per week, or L.3, 18s. per annum.

The annual amount of contributions for their relief is upwards of L.200, about L.60 having hitherto been collected at the church door, and the rest contributed by the heritors, who voluntarily assess themselves.

*Fairs.*—The Doune fairs are well known. Of these there are six annually. The great fair, called the Latter Fair, is held on the first Tuesday and Wednesday of November; the sheep fair on Tuesday, and the black-cattle on Wednesday. The next largest is held on the fourth Wednesday of the same month. The others, which are smaller, or mostly nominal, are, Candlemas Fair, 11th February, for grain and general business; May Fair, second Wednesday of May, for milch cows and cattle for graziug; July Fair, 26th July, for hiring shearers and general business; and Yuill Fair, last Wednesday of December, for fat cattle, grain, and general business.

*Inns, &c.*—There are 14 public-houses in the parish; besides two at Deanston, in which no spirits are sold.

*Fuel.*—The fuel used, besides wood, is peat and coal. The former is procured at the hill (Uamvar) and at Moss Flanders; the latter either at Bannockburn or near Alloa. The one costs about 5s. and the other, exclusive of 5s. for carting, from 7s. to 8s. per cart load.

*Revised January* 1844.